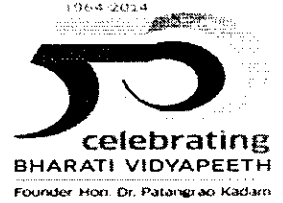




**BHARATI VIDYAPEETH DEEMED UNIVERSITY  
DENTAL COLLEGE AND HOSPITAL  
SECTOR -7, C.B.D. (BELAPUR), NAVI MUMBAI – 400614  
Tel:022-27564646 Fax:022-27564655**



## **WOMEN EMPOWERMENT COMMITTEE**

**Co-ordinator Dr Sarita Shrivastava**

**Advisor : Dr Meenakshi Verma**

**Members : Dr Minakshi Bhattacharjee**

**Dr Meghana Kulkarni**

**Dr Sukumar Lipare**

### **Objectives**

- 1.To Create awareness on gender equality issues by organizing seminars,publishing and displaying handouts on gender sensitization
2. To Prevent gender discrimination and sexual harassment of students and staff by sensitizing the students and staff and changing their patriarchal mindset towards women
- 3.To lay a stepping stone for building a society free of any gender bias as envisaged by the Indian Constitution
- 4.To reach out to underprivileged women to teach them about their rights
5. To conduct guest lectures, seminars and workshops on gender sensitization
- 6.To Create a friendly environment so that students and staff can share their concerns with the cell and also to sensitise the college staff towards womens problems
- 7.To help women lead a balanced life with good mental and physical health
8. To make them aware about the guidelines of Supreme Court and to ensure that sexual harassment is treated as an unacceptable social behavior within the institution and the society

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### **Vision**

To enable female teaching and nonteaching staff and students to tap their true potential and to maintain a dignified and congenial environment at the workplace

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NAVI MUMBAI - 400 614.**

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### Mission

To train the women to acquire a wide range of knowledge and to identify women with leadership and entrepreneur quality who can become change makers of the society and be job providers instead of job seekers and to encourage students to become self-reliant and economically independent

To make students aware of various types of sexual abuse and their right to complain as per supreme court guidelines

### Long term goals


1.To create and ensure a balanced gender equal environment in the campus both for students and staff

2.To propose specific strategies for upliftment of women and their representation in higher levels in all walks of life

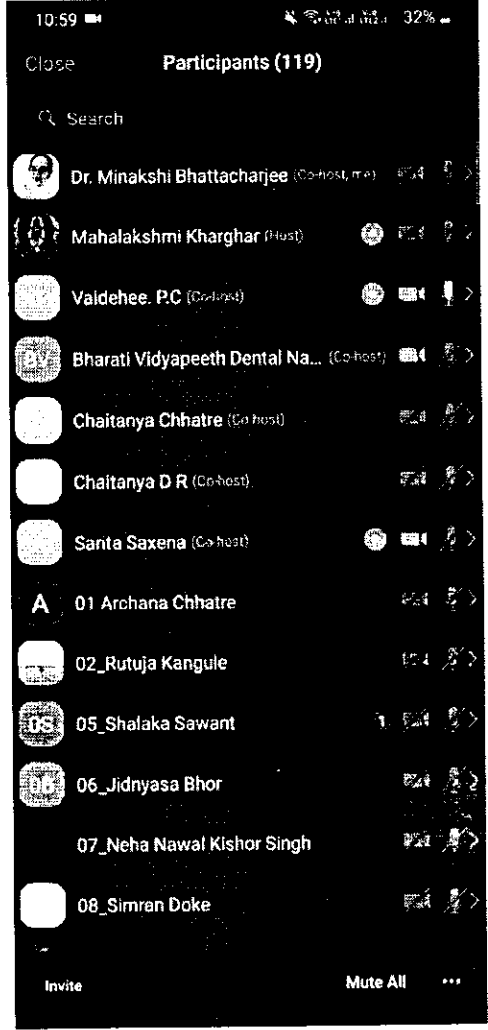
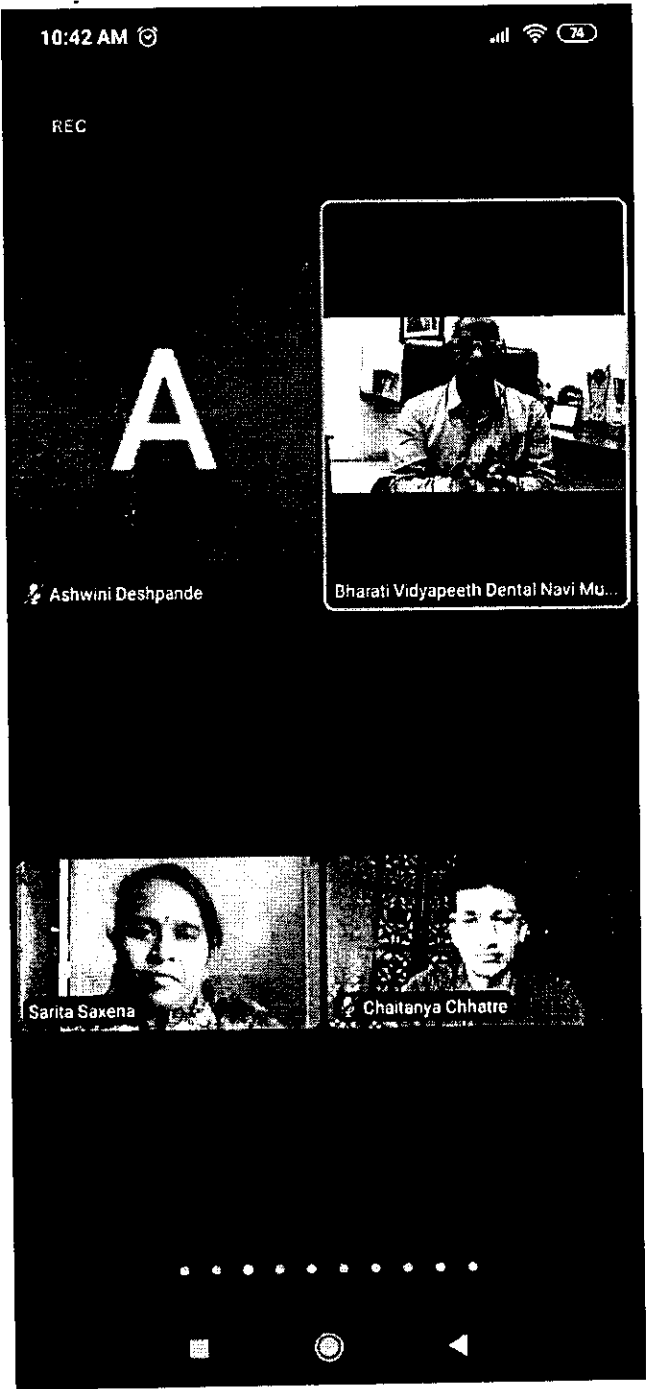
3.To have regular feedback from students and staff regarding the environment at campus

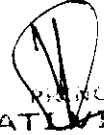
### ACTIVITIES DONE BY WOMEN EMPOWERMENT CELL

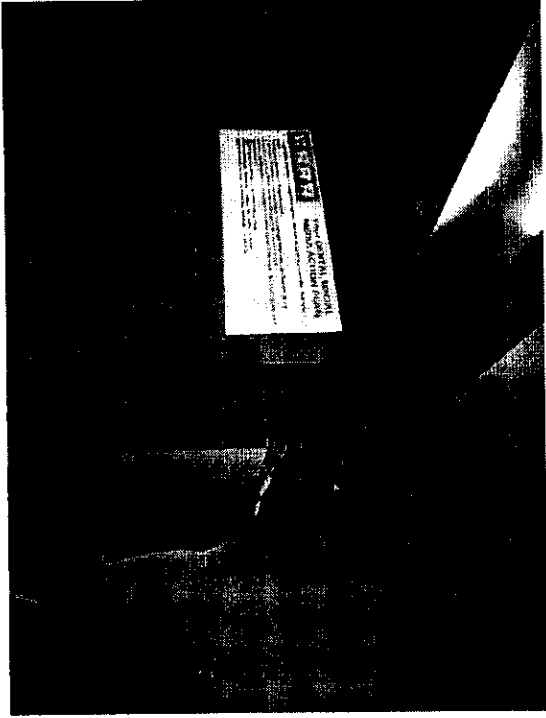
1. A session on Women's social economic and legal rights by Advocate Vaidehee Chhatre was arranged on Occasion of Respected Balasaheb's Birthday on 13<sup>th</sup> Jan 2021 at 10.30 am. The session was conducted on online platform on zoom and 130 people attended the session
2. A programme was organized on 4<sup>th</sup> march 2021. The programme started with a walkathon in college premises at 9 am followed by a talk by a Guest Speaker Dr Anisa Shaikh on topic "Being Unapologetically you. Embrace that powerful woman inside. Build your Brand in post Covid Era" This was followed by a talk By Principal Sir Dr V .Sreenivasan on "SOFT SKILLS". E poster Competition was held wherein all year students participated and submitted posters online. 50 students and 50 teaching and non teaching staff attended the event

  
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# DENTAL COLLEGE AND HOSPITAL

SECTOR-7, C.B.D. BELAPUR, NAVI MUMBAI - 400 614

Approved with a score of [2017] by NAAC  
A Grade  
Approved with a score of [2018] by NAAC  
A Grade  
Approved with a score of [2019] by NAAC  
A Grade

Principal Dr. V. Sreenivasan  
M.D.S.

BVDU/DCH/NM/ 215 /2020.21  
Date 21/07/2021

## NOTICE

RESEARCH METHODOLOGY LECTURES (REVISED SCHEDULE) FOR FIRST  
MDS POSTGRADUATE STUDENTS  
(TUESDAY 1.00 PM-2.00 PM)

DATE	TOPIC	STAFF
01/06/21	Literature search and critical appraisal of scientific literature	Dr. V. Sreenivasan
08/06/21	Literature search and critical appraisal of scientific literature	Dr. V. Sreenivasan
15/06/21	Research bias and types	Dr. Suyog Sawant
22/06/21	Evidence Based Dentistry	Dr. V. Sreenivasan
29/06/21	Evidence Based Dentistry	Dr. V. Sreenivasan
06/07/21	Ethical considerations in Research	Dr. Haritha N
13/07/21	Designing a questionnaire study	Dr. Ashwin Jawdekar
20/07/21	Qualitative Research	Dr. Suyog Sawant
27/07/21	Animal experimental protocols, Principles in the development, execution, and interpretation of methodologies	Dr. Parag Gangurde
03/08/21	Documents in Research	Dr. Meghana Kulkarni
10/08/21	Development of skills for preparing clear concise Scientific abstracts and Publications	Dr. Ashwin Jawdekar

- \*Interested faculty as well as 2<sup>nd</sup> and 3<sup>rd</sup> MDS students may also attend the above lectures after due consent from HOD/Incharges
- \*Attendance is mandatory for all 1<sup>st</sup> MDS students
- \*The lectures will be delivered on an online platform, the link for the same will be shared a day prior by the concerned staff.

Principal  
Dr. V. Sreenivasan

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# BHARATI VIDYAPEETH

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## DENTAL COLLEGE & HOSPITAL, NAVI MUMBAI


Final Year First Term

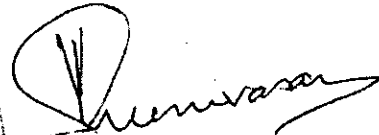
BY 001 DC MUMBAI 053/0-9/12/2020

### Lecture and Practical Schedule from 10/12/20 onwards

Timings	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8:00am-9:00am	Physical Clinical Posting In Respective Departments	Pedodontics	Physical Clinical Posting In Respective Departments	Periodontics	Physical Clinical Posting In Respective Departments	Public Health Dentistry Periodontics
9:00am-10:00am		Periodontics		Orthodontics		Public Health Dentistry Periodontics
10:00am-11:00am		Orthodontics		OMDR		OMDR
11:00am-12:00pm		OMDR		Prosthodontics		Orthodontics
12:00pm-1:00pm		Lunch		Lunch		Lunch
1:00-2:00pm		Conservative Dentistry		Public Health Dentistry		★ Ethics
2:00pm-3:00pm		Public Health Dentistry		Oral Surgery		Online Clinical Posting
3:00pm - 4.00 pm		Online Clinical Posting		Online Clinical Posting		Online Clinical Posting

- On Monday, Wednesday and Friday physical clinical postings will be held in the respective departments of the college
- On Tuesday, Thursday, and Saturday online lectures and practicals will be conducted.
- \*Terminal Exams for Final First Subjects - 04/01/2021 to 11/01/2021
- \*2<sup>nd</sup> Sessional Exams for Final First Subjects - 01/02/2021 - 06/02/2021

  
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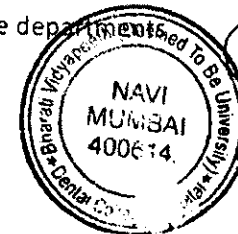
**Bharati Vidyapeeth (Deemed to be University)**  
Dental College & Hospital,  
Navi Mumbai.

Second Year first term timetable (From 01/07/2021 onwards)

BY 10/06/2021 334/2021 date - 28/06/2021

Time	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
8.30am-9.30am	P	General Microbiology	P	General Pathology	P	Preclinical Prosthodontics
9.30am-10.30am	H	DMS (Prostho)	H	General Microbiology	H	General Pathology
10.30am-11.30am	Y	Preclinical Conservative Dentistry	Y	General Pharmacology	Y	General Microbiology
11.30am-12.30pm	S	General Pharmacology	S	DMS (Cons)	S	★ EVS
12.30pm-1.30pm	I	Lunch	I	Lunch	I	Lunch
1.30pm-2.30pm	C	General Pathology	C	Oral pathology	C	General Pharmacology
2.30pm-3.30pm	A	Assignment - General Microbiology	A	Assignment - General Pathology	A	Assignment - General Pharmacology
	L		L		L	
	Practical		Practical		Practical	

- On Monday, Wednesday, and Friday there will be physical practicals in college in respective departments
- On Tuesday, Thursday, and Saturday there will be online lectures and practicals
- 1<sup>st</sup> Sessional exams will be held in 01/09/21-09/09/21
- Terminal examinations will be held from 15/11/21 to 26/11/21



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*Principals*  
**PRINCIPAL**  
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DENTAL COLLEGE AND HOSPITAL  
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**Bharati Vidyapeeth (Deemed to be University) College of Ayurved , Pune.**

**Criterion I –Curricular aspects  
Year- July 2020 to June 2021.**

**1.3.1. Institution integrates cross cutting issues relevant to professional ethics, Gender, Human values, Environment & sustainability into the curriculum**

**Internship Orientation Program**

Internship Orientation Program was organized in the college of Ayurved, Bharati Vidyapeeth [DU], Pune on **06/03/2021 to 13/03/2021**.

Seven day program was inaugurated by Principal and Dean of college and started with Hippocrates oath.

Total 74 interns have attended the program.

Important topics like ethics and social responsibility with various opportunity in administrative field was explained by Dr. Kaustubh Bondre. Scope and opportunities in Ayurved after BAMS graduation was elaborated by Dr. Rasik Pavaskar. Scope in Ayurvedic pharma industries was explained by Dr Ramdas Kute. Recent trends in dermatology was explained by Dr Nitin Dhepe. Apart from these faculty members form our college Dr Pai, Dr Rokade, Dr Dalvi-Pawar , Dr Deshpande, Dr Matekar, Dr Namewar, Dr Kumbhar, Dr Kulkarni, Dr Patil, Dr Mohite, Dr Mulik, Dr Patwardhan, Dr Dhurve and Dr Paliwal have delivered lectures on various topics to guide interns.

  
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## Internship Reorientation programme



**BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY), PUNE INDIA  
COLLEGE OF AYURVED  
PUNE- SATARA ROAD, PUNE-411043**

**INTERNSHIP ORIENTATION PROGRAMME**

**From 06 / 03 / 2021 TO 13 / 03 / 2021**

**Venue: - Dhanavantari Hall College of Ayurveda.**

<b>Day 1 : 06 / 03 / 2021 Saturday</b>		
10.30am to 11.00am	Welcome & Hippocrates Oath	Hon'ble Principal Dr.A.B.Patil Sir
11.00am to 12.00 noon	Ethics and Social Responsibility with various Opportunities in Administrative field	Dr.Kaustubh Bondre Sir
<b>Day 2 : 08 / 03 / 2021 Monday</b>		
10.00am to 11.00am	Scope & opportunities in Ayurveda after B.A.M.S Graduation	Dr. Pawaskar Sir
11.00am to 12.00 noon	Common paediatric problem in General Practice	Dr. Pai Madam
12.00 noon to 01.00pm	Training on Hospital infection control	Dr. Rokade Sir
<b>Day 3: 09 / 03 / 2021 Tuesday</b>		
10.00am to 11.00am	Scope in Ayurvedic Pharmaceutical industry	Dr. Ramdas Kute Sir
11.00am to 12.00 noon	Ayurvedic Formulation & prescription Writing in Clinical Practice	Dr.Dalvi Madam
12.00 noon to 01.00pm	Pharmacovigilance for Ayurved	Dr. Deshpande Madam
<b>Day 4: 10 / 03 / 2021 Wednesday</b>		
10.00am to 11.00am	Panchakarma in General Practice	Dr. Matekar Madam
11.00am to 12.00 noon	Medico-legal issues	Dr. Namewar Sir
12.00 noon to 01.00pm	Emergency management in Hospital	Dr. Kumbhar Sir
<b>Day 5: 11 / 03 / 2021 Thursday</b>		
09.30am to 10.30am	Emergency in Gyn & Obs. Practice	Dr. Kulkarni Madam
10.30am to 11.30 am	Recent trends in Dermatology	Dr. Nitin Dhepe Sir
1.30 am to 12.30pm	ENT in General Practice	Dr. G. B. Patil Sir
<b>Day 6: 12 / 03 / 2021 Friday</b>		
09.30am to 10.30am	Medical ethics and Gender sensitization	Dr.Mohite Madam
10.30am to 11.30 am	National Health Programme	Dr.Patwardhan Sir
1.30 am to 12.30pm	Emergency in Ophthalmic Practice	Dr. Mulik Sir
<b>Day 7: 13 / 03 / 2021 Saturday</b>		
10.00am to 11.00 am	Documentation & Internship Rules and Regulation	Dr. Dhurve Sir
1.00 am to 12.00 noon	Logbook writing and case taking	Dr. Amit Paliwal Sir

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**Bharati Vidyapeeth (Deemed to be University) College of Ayurved , Pune.**

**Criterion I –Curricular aspects  
Year- July 2020 to June 2021.**

**1.3.1. Institution integrates cross cutting issues relevant to professional ethics, Gender, Human values, Environment & sustainability into the curriculum**

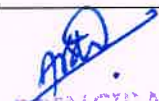
**Gender Sensitization**

Gender Sensitization training programme for college students plays an important role in the development and growth of the students. The students are the message bearers for the rest of the society.

**The objective of the training programme is to:**

- Sensitize the students on the gender discrimination.
- Familiar them regarding the constitutional safeguard for gender equality.
- Train the youth on the socio-economic status of Women
- To make them understand the implicit gender based discrimination against women in a lifecycle approach
- Enable them to know the constitutional provisions and laws relating to gender issues in India.

Sr.no	Date	Time	Course	Attendee
1	16/2/21	3.30-4.30 pm	III BAMS	90
2	17/2/21	3.30-4.30 pm	I BAMS	84
3	18/2/21	2.30-3.30pm 3.30-4.30 pm	II BAMS PG	54 51
4	20/2/21	11.30-12.30 pm	IV BAMS	86

  
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**Bharati Vidyapeeth (Deemed to be University) College of Ayurved , Pune.**

**Criterion I –Curricular aspects  
Year- July 2020 to June 2021.**

**1.3.1 Institution integrates crosscutting issues relevant to professional ethics, Gender, Human values, Environment and sustainability into curriculum**

**1.3.1**

**Report**

**World Environment Day Celebration**

On the occasion of world environment day, Sapling plantation event was organized on 5/06/2021 By NSS unit & Dravyaguna department of BVDU College of Ayurved at the Bharati Vidyapeeth University campus, Dhankawadi, Pune.

As we know, Plantation of tree is important as they improve the life and fulfill essential needs of mankind. As it turns out, while trees can help to tackle the rising temperature around the world, on a more personal level planting trees can be life changing career for people as well.

Every year, the Dravyaguna department conducts tree plantation drives at different spots on campus. Volunteers of NSS unit as well as teaching and non-teaching staff of Dravyaguna department participated in this.

On 5/06/2021, students planted a more than 50 saplings of indigenous trees. Dr Abhijit Patil, principal of BVDU College of Ayurved, was also present for the occasion. Tree plantation program went out smoothly; saplings were planted under the guidance of Dr Ninad Nangare & Dr. Amol Patil. 15 Volunteers took active participation and enjoyed a lot, they were provided with refreshments afterwards. This day was really a memorable and taught student and volunteers, the importance of our beautiful environment.

  
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Teaching learning and evaluation of Environmental science for UG students: Examination

**BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY), PUNE, INDIA**

\*College: 10 COLLEGE OF AYURVED, PUNE  
 Course: (637) BACHELOR OF AYURVEDIC MEDICINE & SURGERY (2017 COURSE)  
 Course Part: (1801) FINAL-B.A.M.S.  
 Marks For: ENVIRONMENTAL STUDIES  
 Exam: January 2021

Sr No	PRN No	M/F	Name	Result
1	1710060004	M	BALDANIA JAIMIN MAGANBHAI	PASS
2	1710060018	M	DUBEY TARUNKUMAR SANJAYBHAI	PASS
3	1710060033	F	JADHAV SHRAVANI PRADEEP	PASS
4	1710060040	M	KADLASKAR SHRAVAN BHARAT	Ab
5	1710060048	F	KSHIRSAGAR VIBHAWARI VINOD	PASS
6	1710060063	F	PATEL HETALBEN DILIPBHAI	PASS
7	1710060065	M	PATEL SHAIWALKUMAR BHARATBHAI	PASS
8	1710060067	M	PATEL VISHVAP NARESHBHAI	PASS
9	1710060083	F	SARTHI SINGH	Ab
10	1710060087	F	SHAHANE SHRADDHA SUNIL	PASS
11	1710060088	F	SHAIKH ARSHIYA SHAKIL	PASS
12	1710060098	F	WARE SUCHITA RAJESH	PASS
13	1710060100	F	YADAV SHWETA RAMCHANDRA	PASS

		%
Registered Student :	13	
Appear Student :	11	
Pass Student :	11	100.00
Fail Student :	0	0.00
Absent Student :	2	

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Controller of Examinations

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**Bharati Vidyapeeth (Deemed to be University) College of Ayurved , Pune.**

**Criterion I –Curricular aspects**

**Year- July 2020 to June 2021.**

**1.3.1. Institution integrates cross cutting issues relevant to professional ethics, Gender, Human values, Environment & sustainability into the curriculum**

**Conduction of Induction program for sensitization of students in relation to human values**

<b>1<sup>st</sup> March , Monday</b>			
1.30 to 2.30 pm	Dr.Kavita Indapurkar	Know your syllabus Lectures by HOD (BAMS Course Syllabus exploration w.s.r to 1 <sup>ST</sup> BAMS	The syllabus designed, covers all aspects of Medical field; makes the student efficient in Future Medical Practice.
2.30 pm to 4 pm	Dr.Kirti Bhati	Personal Health and hygiene Importance of diet in ASU	Awareness of Eating healthy Hygienic food with its benefit to society.
4 pm to 5.30 pm	Dr.Swati Mohite	Professional and Medical Ethics	Developed Responsibility in students with Positive impact of the knowledge of Professional and Medical Ethics
<b>2<sup>nd</sup> March , Tuesday</b>			
1.30 to 2.30 pm	Dr.Umesh Ghate	Basics of PrakritiPareeksha	Enabled Students for Self Prakriti assessment.
2.30 pm to 4 pm	Dr.Prasad Pandkar	Role and impact of Physician in society	Information about Physician's devotional approach towards the welfare of the health of the community. Positive effect of the Good Ethical Practice.
4 pm to 5.30 pm	Dr.SavitaNilakhe Dr.VedikaSadhale	VadatuSanskritam	Importance of the knowledge of Vibhakti while studying Sanskrit.
<b>3rd March , Wednesday</b>			

1.30 pm to 2.30 pm	Dr.MadhuriBhide	Games and Sports	Relaxation and enjoyment.
2.30 pm to 4 pm	Dr.Manasi Deshpande	Know regulatory bodies and statutory bodies	Information of the various regulatory bodies like CCIM, CCRAS, AyushDept
4 pm to 5.30 pm	Dr.GirishShirke	Lecture by eminent person of ASU. Experiences in Ayurved Practice	Uplift the spirit of the students towards Ayurvedic Practice.
<b>4th March , Thursday</b>			
1.30 to 2.30 pm	Dr.AmitPaliwal	Role of ASU in Public Health and Primary Health Center.	Information regarding the impact of Ayurved& other traditional medicines in remote areas; working system of Ayurved Practitioner in different PHCs.
2.30 pm to 4 pm	Manashakti Kendra Pansare Madam	Stress Management and capacity building to address medical challenges. Time Management	Understanding the various means to tackle stress in daily life also prevention of stress. Smart time management for productive life.
4 pm to 5.30 pm	Dr.Yogesh Kale	Motivational lecture by eminent person of ASU. Scope and opportunities in Ayurved field.	Information about the result of devotional work in the field of Ayurved and importance of hardwork to serve the society. Scope for students of Ayurved as practioner, academician etc.
<b>5th March , Friday</b>			
1.30 to 2.30 pm	Dr.Praveen Sadhale	Skills Basic Life Support (BLS) and First Aid	Live demonstration of CPR Technique, different medical emergencies and their management. Hands on training of CPR.
2.30 pm to 4 pm			
4 pm to 5.30 pm			
<b>6th March , Saturday</b>			

<b>Visit to College and Hospital of BVDUCOA Pune</b>			
9.30 am to 12.30 pm	Hospital Visit & College Herbal Garden and Museum Visit under the guidance of Dr.SachinPatil&Dr.RupeshKaddam		
<b>8<sup>th</sup> March , Monday</b>			
1.30 to 2.30 pm	Dr.SavitaNilakhe Dr.VedikaSadhale	VadatuSanskritam	Basic understanding about Sanskrit language.Importance of proper pronunciation in Sanskrit language. Basic easy method of effective speaking in Sanskrit.
2.30 pm to 4 pm	Dr.SavitaNilakhe	Yoga and Meditation (Fundamental principles)	Understanding the Broad spectrum of Yoga, Importance of Meditation &Pranayam
4 pm to 5.30 pm	Dr.Sneha Salunkhe	Biomedical waste Management	Need of management for controlling the risk factors for the prevention of infectious diseases. Effective waste management with categorization in different colour bags.
<b>9<sup>th</sup> March , Tuesday</b>			
1.30 to 2.30 pm	Dr.Arvind Kadus	Lecture by Eminent Pharmaceutical Industrialist (in the field of Ayurved)	Inspiring journey towards becoming a Pharmaceutical Industrialist.
2.30 pm to 4 pm	Dr.Chitra Bedekar	Mrig Ayurveda	Understanding about Hastyayurved.
4 pm to 5.30 pm	Dr.MadhuriBhide	Vriksha Ayurveda	Importance of Plantation, advantages, making the organic fertilizer.
<b>10<sup>th</sup> March , Wednesday</b>			




1.30 to 2.30 pm	Dr.SavitaNilakhe Dr.VedikaSadhale	VadatuSanskritam	Easy conversation in Sanskrit. Importance of Sanskrit in Ayurved.
2pm to 3.30pm	Dr. Chiplunkar	Introduction about modern medicine and other systems of medicines.	Introduction of Sports Medicine.Scoliosis treatment, 3D Spinal Techniques & scoliosis bracing.
4 pm to 5.30 pm	Mr.SanjayGawali	Computer skills	Informative session about basic computer skills
<b>11th March , Thursday</b>			
1.30 to 2.30 pm	Dr. Verma Sir	*Understanding Interpersonal relationship in healthcare system. *Understanding the Process of Group Learning and Group Dynamics. *Understanding different methods of Self Learning and Collaborative learning.	Inspiring tips to become a successful practitioner & raise social status significantly with the help of maintaining good relationships in healthcare system.
2.30 pm to 4 pm	Dr. Verma sir (Dr.Suzane)	Communicative English	Understanding different grammer topics & dialogue delivery for effective communication in English.
4. pm to 5.30 pm	Dr.Ninad Nangre	Biodiversity and ASU	Interdependence of various natural factors with each other, importance of identification &cultivation the herbs,moral& legal methods for the preservation of biodiversity.



<b>12th March</b>				
<b>Field Visit to Other Institutions</b>				
1.30 pm to 3 pm	Dr.Umesh Ghate	Dr. SupriyaBhalerao	Introduction of Research, its types, its application in Medical field, requisites of researcher.	
3pm to 5.30 pm	Dr.Umesh Ghate	Dr.Shamim Sheikh	Information of biotechnology as an interdisciplinary subject, its application in medical field	
<b>15th March , Monday</b>				
1.30 to 2.30 pm	Dr. Swati Mohite	Comprehend the learning Pedagogy and the role in learning Skills	Various teaching & learning methodologies. Learning pedagogy & role in learning skills.	
2.30 pm to 4 pm	Dr.Ajit Kolhatkar	Recent Advances in ASU	Present advances & its availability of digitized texts ,softwares like AYUSOFT & SATYAM Ayurveda	
4 pm to 5.30 pm	Dr.Savita Nilakhe Dr.Vedika Sadhale	VadatuSanskritam	Current situation of CORONA, causes, effects, effective management through Lifestyle management as suggested by Ayurved	
<b>16th March , Tuesday</b>				
1.30 to 2.30 pm	Dr.Savita Nilakhe Dr.Vedika Sadhale	VadatuSanskritam	Sanskrit drama Realization Sanskrit as easy language of communication	
2.30 pm to 3.30 pm	Dr.AmolPatil	Yoga Practice and relaxation techniques	Different Yoga postures, Suryanamskar proper meditation techniques.	
3.30 pm to 4.30pm	Dr.VasudhaAs utkar	History Philosophy and concepts of ASU Uniqueness of Ayurved,	The Unique preventive & curative aspect of	

		Siddha, Sowa Rigpa, Unani as Compared to other systems of Medicine.	Ayurved compared to other systems of Medicine, holistic approach conveyed.	
4.30 pm to 5.30pm	Dr.SuwarnaShelar	* AYUSH related Videos (Presentation and discussion)	Exploration to Ayush related documentaries.	
<b>17<sup>th</sup> March</b>				
1.30 to 2.30 pm	Dr.Savita Nilakhe Dr.Vedika Sadhale	VadatuSanskritam	Exploration to Sanskrit songs	
2.30 pm to 4 pm	Dr.PallaviKhatawkar	National health status, Goals and Policies	Health promotion & disease prevention	
4 pm to 5.30 pm	Team of HODs (1 <sup>st</sup> BAMS)	Discussion, Debates, Task giving, Feedback	Student got the motivation through Interaction ,exchange of thoughts between students & the teachers on various topics Indian Medicine System, Career in Ayurvedetc	

  
**PRINCIPAL**  
 Bharati Vidyapeeth  
 (Deemed to be University)  
 College of Ayurved  
 Pune-Satara Road, Pune-411 043.

**BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY)  
HOMOEOPATHIC MEDICAL COLLEGE & HOSPITAL  
PUNE, DHANKAWADI-43**

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Oath Ceremony Report Of 37<sup>th</sup> Interns Batch

Date: 25/03/2021

Timing: 3pm to 4.30pm

Oath ceremony was held for 37<sup>th</sup> Interns Batch (2019-2020) by ICTP department under –

ICTP Incharge – Dr. Mrs Nerlekar

ICTP Co-ordinator – Dr. Nadgauda

ICTP Co-ordinator – Dr. Mrs Jagtap and Dr Mrs. Koraykar

Total Interns – 94 (Internship completed by 70, Remaining: 24)

Attendance – 32(Offline) 38(online)

Absent – 8

The oath ceremony notice was put prior, dated 23/3/2021 to the student and staff. On account of COVID-19 pandemic situation only 40 students were permitted to attend the ceremony in person.

The ceremony started with lamp lighting by the Principal. This was followed by the feedback of the posting in charges, namely Dr L Mali, Dr S. Manhas, Dr A. Talathi, Dr J. Patil, Dr S Nadgauda, and Dr.R. Shinde. The feedback was given in regards to the following points

- 1) Patient seen with follow up in internship training
- 2) Behavior and Discipline of students
- 3) Case Taking and Processing
- 4) Project report
- 5) Extra ordinary work done by any intern
- 6) Sincerity

The ICTP incharge ,Dr Nerlekar addressed the interns and guided them for their future. She shared her experiences and gave a detail report regarding the 37<sup>th</sup> interns batch. This was followed by the feedback given by the interns of the 37<sup>th</sup> batch. Their feedback highlighted the

learning experiences in COVID-19 pandemic situation, learnings from different staff members of each subject, their future plans. A recorded feedback video of an intern was also streamed online.

The event was then followed by the Principal's address where sir boosted students confidence to practice Homoeopathy, he motivated students for research activities, highlighted the importance of post graduate education and improvement in the project work. He appreciated the functioning of the Posting incharges and of the ICTP team.

The Hahnemannian oath was given to the interns by Principal Dr. A.B.Jadhav. The event was concluded by the vote of thanks by Dr Sumitra Jagtap.

The highlight of the ceremony was that for the first time the oath was also streamed online. On account of the pandemic situation, a zoom link was shared to the students where they participated in the event through digital platform.

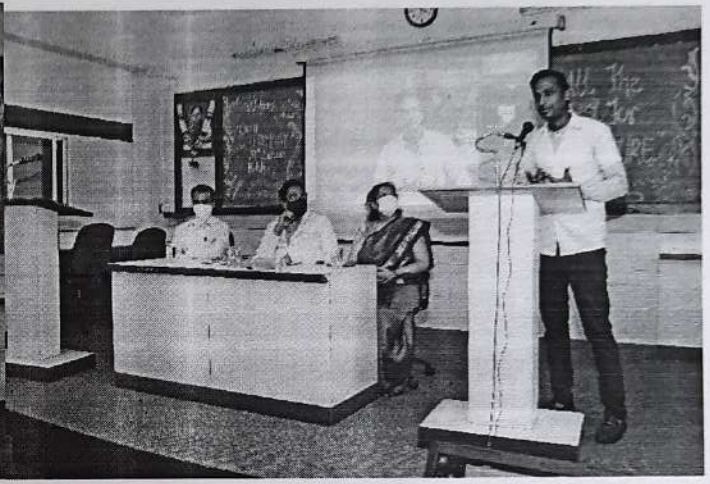


**Lamp Lightning by The Prinicpal**





**ICTP Incharge addressing the interns**



**Feedback By posting Incharges and Interns of 37<sup>th</sup> Batch**



**Oath Ceremony**



Vote of thanks by Dr Sumitra Jagtap

Sum  
D. 1922-19. A. Kulkarni.



**BHARATI VIDYAPEETH (DEEMED TO BE UNIVERSITY)  
HOMOEOPATHIC MEDICAL COLLEGE,  
KATRAJ-DHANKAWADI  
PUNE-43**

## Report of NSS Regular Activity 2020-21

In this academic year 2020-21 university sanctioned 100 student's strength volunteers our NSS unit. After enrolment of 100 volunteers our college NSS unit has performed following activities.

1. NSS orientation programme:

NSS orientation program was conducted online under the guidance of University NSS Co-Ordinator Dr. A.R. Mhetre and Program Officer Dr. S.S. Manhas on 14<sup>th</sup> October 2020 in which 100 volunteers from our college participated.

2. Independence day:

On 15<sup>th</sup> August 2020, college NSS unit celebrated Independence Day was celebrated by paying tributes to the freedom fighters, by conducting online session . All the NSS volunteers attended the program.

3. College Foundation day: 16/8/20

On account of the college, college foundation day was celebrated on the 16<sup>th</sup> August 2020 Free medical checkup and medication camp was held on this day. 113 patients were checked and the medicines were given free of cost.

4. Gobal hand washing day : Home visits by volunteers under "MY FAMILY MY RESPONSIBILITY" on 15/10/20 organized by NSS ,UNICEF,Higher Education Maharashtra Government .

On this occation volunteers participated in even Quiz competiton and talent hunt video competition .



5. Teachers' day:

On 5<sup>th</sup> September 2020, NSS volunteers participated in online/offline teachers' day program. On this day, the senior most teachers were felicitated and honoured with a shawl and momentó by our Principal Dr.A.B.Jadhav and NSS University Co-ordinator Dr.A.R.Mhetre and NSS Program Officer Dr.Mrs.S.S.Manhas.

6. COVID-19 Awareness program:

Online Webinar was held for awareness on COVID-19 was organized on 10<sup>th</sup> September 2020 which was attended by 85 NSS volunteers from our NSS unit.

7. Vaccination Awareness :

Vaccination awareness in society by one to one publicity by volunteers around their locality by mobile phones etc from 1<sup>st</sup> Jan 21 till the date.

8. On occasion of the Gobal hand washing day 2020, a state level online orientation program was organized by UNICEF, NSS Higher and Technical Education department GOM, Rotary culb, Western India Football Asso, Center for youth development and activities on 13/10/20.

9. Volunteers participated in online for "Prerana The Leadership Program" organized by Shivaji University Kholapur on 11/7/20 -15/7/20 .

10. International Yoga Day was celebrated with the theme "YOGA @HOME YOGA WITH FAMILY" as well online yoga training and awareness program was organized, a virtual event "Lets make compation contagious" by Bharati Vidyapeeth (DU) parterned with Ministry of AYUSH and Heartfullness Institute .

11. One day National Webinar on "GENDER SENSITIZATION" was jointly organized by Higher and Technical Edu dept Govt of Maharashtra , kaviyatri Bahinabai Choudhari North Maharashtra University Jalagaon and UNICEF on 9/7/2020 .



12. Online workshop on "COVID -19 STIGMA and DISCRIMINATION" on 23/5/20 by NSS and UNICEF was attended by volunteers and Program Officer .
13. Orientation of NSS Officials and volunteers on COVID-19 by NSS and UNICEF on 7/5/2020- training in Marathi .
14. Maharashtra NSS : strength of Nation and its role in COVID-19 disaster management organized by SPPU (1.) on 2/5/2020 guidance and dialogue with Mr.D.Kartigen Regional Director NSS Pune (2) on 28/4/2020 by Dr.Atul.Salunkhe State NSS Official.
15. 23/4/2020 Online Training for NSS volunteers on COVID-19 on Youtube in Marathi by NSS,UNICEF,Higher Technical Edu and Govt of Maharashtra.
16. COVID-19 Myths and Facts link was shared for NSS Units PO and volunteers
17. Home-made masks were prepared and distributed in family and around for which demo video was provided on 11/4/2020.
18. 19/12/2020 Volunteers meeting was organized for further activities in COVID-19 in hospital seminar hall.
19. Blood Donation Camp was organized with the help of NGO where 12 male and 5 female volunteers donated the blood
20. Republic Day was celebrated on the college terrace on 26/1/21.



Program Officer  
Dr. S.S. Manhas



Principal  
Dr. A.B. Jadhav

## **BP107P. HUMAN ANATOMY AND PHYSIOLOGY (Practical)**

**4 Hours/week**

Practical physiology is complimentary to the theoretical discussions in physiology. Practicals allow the verification of physiological processes discussed in theory classes through experiments on living tissue, intact animals or normal human beings. This is helpful for developing an insight on the subject.

1. Study of compound microscope.
2. Microscopic study of epithelial and connective tissue
3. Microscopic study of muscular and nervous tissue
4. Identification of axial bones
5. Identification of appendicular bones
  
6. Introduction to hemocytometry.
7. Enumeration of white blood cell (WBC) count
8. Enumeration of total red blood corpuscles (RBC) count
9. Determination of bleeding time
10. Determination of clotting time
11. Estimation of hemoglobin content
12. Determination of blood group.
13. Determination of erythrocyte sedimentation rate (ESR).
14. Determination of heart rate and pulse rate.
15. Recording of blood pressure.

### **Recommended Books (Latest Editions)**

1. Essentials of Medical Physiology by K. Sembulingam and P. Sembulingam. Jaypee brothers medical publishers, New Delhi.
  2. Anatomy and Physiology in Health and Illness by Kathleen J.W. Wilson, Churchill Livingstone, New York
  3. Physiological basis of Medical Practice-Best and Tailor. Williams & Wilkins Co, Riverview, MI USA
  4. Text book of Medical Physiology- Arthur C, Guyton and John.E. Hall. Miamisburg, OH, U.S.A.
-



## ADVANCED PHARMACOLOGY - I (MPL 102T)

### Scope

The subject is designed to strengthen the basic knowledge in the field of pharmacology and to impart recent advances in the drugs used for the treatment of various diseases. In addition, this subject helps the students to understand the concepts of drug action and mechanisms involved

### Objectives

Upon completion of the course the student shall be able to :

- Discuss the pathophysiology and pharmacotherapy of certain diseases
- Explain the mechanism of drug actions at cellular and molecular level
- Understand the adverse effects, contraindications and clinical uses of drugs used in treatment of diseases

### THEORY

60 Hrs

- |    |                   |                                                                                                                                                                                                                                     |     |
|----|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 1. | General           | Pharmacology                                                                                                                                                                                                                        | 12  |
|    | a.                | Pharmacokinetics: The dynamics of drug absorption, distribution, biotransformation and elimination. Concepts of linear and non-linear compartment models. Significance of Protein binding.                                          | Hrs |
|    | b.                | Pharmacodynamics: Mechanism of drug action and the relationship between drug concentration and effect. Receptors, structural and functional families of receptors, quantitation of drug receptors interaction and elicited effects. |     |
| 2  | Neurotransmission |                                                                                                                                                                                                                                     | 12  |
|    | a.                | General aspects and steps involved in neurotransmission.                                                                                                                                                                            | Hrs |
|    | b.                | Neurohumoral transmission in autonomic nervous system (Detailed study about neurotransmitters- Adrenaline and Acetyl choline).                                                                                                      |     |
|    | c.                | Neurohumoral transmission in central nervous system (Detailed study about neurotransmitters- histamine, serotonin, dopamine, GABA, glutamate and glycine).                                                                          |     |
|    | d.                | Non adrenergic non cholinergic transmission (NANC). Co-transmission                                                                                                                                                                 |     |

### Systemic Pharmacology

A detailed study on pathophysiology of diseases, mechanism of action, pharmacology and toxicology of existing as well as novel drugs used in the following systems

#### Autonomic Pharmacology

Parasympathomimetics and lytics, sympathomimetics and lytics, agents affecting neuromuscular junction

- |   |                                                                                                                                                                                                                                               |           |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 3 | Central nervous system Pharmacology<br>General and local anesthetics<br>Sedatives and hypnotics, drugs used to treat anxiety.<br>Depression, psychosis, mania, epilepsy, neurodegenerative diseases.<br>Narcotic and non-narcotic analgesics. | 12<br>Hrs |
| 4 | Cardiovascular Pharmacology<br>Diuretics, antihypertensives, antiischemics, anti-arrhythmics, drugs for heart failure and hyperlipidemia.<br>Hematinics, coagulants, anticoagulants, fibrinolytics and antiplatelet drugs                     | 12<br>Hrs |
| 5 | Autocoid Pharmacology<br>The physiological and pathological role of Histamine, Serotonin, Kinins Prostaglandins Opioid autocoids.<br>Pharmacology of antihistamines, 5HT antagonists.                                                         | 12<br>Hrs |

### REFEERENCES

1. The Pharmacological Basis of Therapeutics, Goodman and Gillman's
2. Principles of Pharmacology. The Pathophysiologic basis of drug Therapy by David E Golan, Armen H, Tashjian Jr, Ehrin J, Armstrong, April W, Armstrong, Wolters, Kluwer-Lippincott Williams & Wilkins Publishers.
3. Basic and Clinical Pharmacology by B.G Katzung
4. Hand book of Clinical Pharmacokinetics by Gibaldi and Prescott.
5. Applied biopharmaceutics and Pharmacokinetics by Leon Shargel and Andrew B.C.Yu.
6. Graham Smith. Oxford textbook of Clinical Pharmacology.
7. Avery Drug Treatment
8. Dipiro Pharmacology, Pathophysiological approach.
9. Green Pathophysiology for Pharmacists.

PHARMACOLOGICAL AND TOXICOLOGICAL SCREENING  
METHODS - I  
(MPL 103T)

**Scope**

This subject is designed to impart the knowledge on preclinical evaluation of drugs and recent experimental techniques in the drug discovery and development. The subject content helps the student to understand the maintenance of laboratory animals as per the guidelines, basic knowledge of various in-vitro and in-vivo preclinical evaluation processes

**Objectives**

Upon completion of the course the student shall be able to,

- Appraise the regulations and ethical requirement for the usage of experimental animals.
- Describe the various animals used in the drug discovery process and good laboratory practices in maintenance and handling of experimental animals
- Describe the various newer screening methods involved in the drug discovery process
- Appreciate and correlate the preclinical data to humans

**THEORY**

60 Hrs

1. Laboratory Animals 12 Hrs  
Common laboratory animals: Description, handling and applications of different species and strains of animals.  
Transgenic animals: Production, maintenance and applications  
Anaesthesia and euthanasia of experimental animals.  
Maintenance and breeding of laboratory animals.  
CPCSEA guidelines to conduct experiments on animals  
  
Good laboratory practice.  
Bioassay-Principle, scope and limitations and methods
2. Preclinical screening of new substances for the pharmacological activity using in vivo, in vitro, and other possible animal alternative models. 12 Hrs  
General principles of preclinical screening. CNS Pharmacology: behavioral and muscle coordination, CNS stimulants and



depressants, anxiolytics, anti-psychotics, anti epileptics and  
nootropics. Drugs for neurodegenerative diseases like  
Parkinsonism, Alzheimers and multiple sclerosis. Drugs acting on  
Autonomic Nervous System.

- 3 Preclinical screening of new substances for the 12  
pharmacological activity using in vivo, in vitro, and other Hrs  
possible animal alternative models.

Respiratory Pharmacology: anti-asthmatics, drugs for COPD and  
anti allergics. Reproductive Pharmacology: Aphrodisiacs and  
antifertility agents Analgesics, antiinflammatory and antipyretic  
agents. Gastrointestinal drugs: anti ulcer, anti -emetic, anti-  
diarrheal and laxatives.

- 4 Preclinical screening of new substances for the 12  
pharmacological activity using in vivo, in vitro, and other Hrs  
possible animal alternative models.

Cardiovascular Pharmacology: antihypertensives, antiarrhythmics,  
antianginal, antiatherosclerotic agents and diuretics. Drugs for  
metabolic disorders like anti-diabetic, antidyslipidemic agents.  
Anti cancer agents. Hepatoprotective screening methods.

- 5 Preclinical screening of new substances for the 12  
pharmacological activity using in vivo, in vitro, and other Hrs  
possible animal alternative models.

Immunomodulators, Immunosuppressants and immunostimulants

General principles of immunoassay: theoretical basis and  
optimization of immunoassay, heterogeneous and homogenous  
immunoassay systems. Immunoassay methods evaluation;  
protocol outline, objectives and preparation. Immunoassay for  
digoxin and insulin

Limitations of animal experimentation and alternate animal  
experiments.

Extrapolation of in vitro data to preclinical and preclinical to  
humans

## CELLULAR AND MOLECULAR PHARMACOLOGY (MPL 104T)

### Scope:

The subject imparts a fundamental knowledge on the structure and functions of cellular components and help to understand the interaction of these components with drugs. This information will further help the student to apply the knowledge in drug discovery process.

### Objectives:

Upon completion of the course, the student shall be able to,

- Explain the receptor signal transduction processes.
- Explain the molecular pathways affected by drugs.
- Appreciate the applicability of molecular pharmacology and biomarkers in drug discovery process.
- Demonstrate molecular biology techniques as applicable for pharmacology

THEORY		60 Hrs
1.	Cell biology Structure and functions of cell and its organelles Genome organization. Gene expression and its regulation, importance of siRNA and micro RNA, gene mapping and gene sequencing Cell cycles and its regulation. Cell death- events, regulators, intrinsic and extrinsic pathways of apoptosis. Necrosis and autophagy.	12 Hrs
2	Cell signaling Intercellular and intracellular signaling pathways. Classification of receptor family and molecular structure ligand gated ion channels; G-protein coupled receptors, tyrosine kinase receptors and nuclear receptors. Secondary messengers: cyclic AMP, cyclic GMP, calcium ion, inositol 1,4,5-trisphosphate, (IP3), NO, and diacylglycerol. Detailed study of following intracellular signaling pathways: cyclic AMP signaling pathway, mitogen-activated protein kinase (MAPK) signaling, Janus kinase (JAK)/signal transducer and activator of transcription (STAT) signaling pathway.	12 Hrs



- |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |           |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| 3 | <p>Principles and applications of genomic and proteomic tools<br/> DNA electrophoresis, PCR (reverse transcription and real time),<br/> Gene sequencing, micro array technique, SDS page, ELISA and<br/> western blotting,<br/> Recombinant DNA technology and gene therapy<br/> Basic principles of recombinant DNA technology-Restriction<br/> enzymes, various types of vectors. Applications of recombinant<br/> DNA technology.<br/> Gene therapy- Various types of gene transfer techniques, clinical<br/> applications and recent advances in gene therapy.</p> | 12<br>Hrs |
| 4 | <p>Pharmacogenomics<br/> Gene mapping and cloning of disease gene.<br/> Genetic variation and its role in health/ pharmacology<br/> Polymorphisms affecting drug metabolism<br/> Genetic variation in drug transporters<br/> Genetic variation in G protein coupled receptors<br/> Applications of proteomics science: Genomics, proteomics,<br/> metabolomics, functionomics, nutrigenomics<br/> Immunotherapeutics<br/> Types of immunotherapeutics, humanisation antibody therapy,<br/> Immunotherapeutics in clinical practice</p>                                 | 12<br>Hrs |
| 5 | <p>a. Cell culture techniques<br/> Basic equipments used in cell culture lab. Cell culture media,<br/> various types of cell culture, general procedure for cell cultures;<br/> isolation of cells, subculture, cryopreservation, characterization of<br/> cells and their application.<br/> Principles and applications of cell viability assays, glucose uptake<br/> assay, Calcium influx assays<br/> Principles and applications of flow cytometry</p> <p>b. Biosimilars</p>                                                                                       | 12<br>Hrs |

**REFERENCES:**

1. The Cell, A Molecular Approach. Geoffrey M Cooper.
2. Pharmacogenomics: The Search for Individualized Therapies. Edited by J. Licinio and M -L. Wong
3. Handbook of Cell Signaling (Second Edition) Edited by Ralph A. et.al
4. Molecular Pharmacology: From DNA to Drug Discovery. John Dickenson et.al
5. Basic Cell Culture protocols by Cheril D.Helgason and Cindy L.Miller
6. Basic Cell Culture (Practical Approach ) by J. M. Davis (Editor)
7. Animal Cell Culture: A Practical Approach by John R. Masters (Editor)
8. Current protocols in molecular biology vol I to VI edited by Frederick M.Ausuvel et la.



**PHARMACOLOGICAL PRACTICAL - I**  
**(MPL 105P)**

1. Analysis of pharmacopoeial compounds and their formulations by UV Vis spectrophotometer
2. Simultaneous estimation of multi component containing formulations by UV spectrophotometry
3. Experiments based on HPLC
4. Experiments based on Gas Chromatography
5. Estimation of riboflavin/quinine sulphate by fluorimetry
6. Estimation of sodium/potassium by flame photometry

**Handling of laboratory animals.**

1. Various routes of drug administration.
2. Techniques of blood sampling, anesthesia and euthanasia of experimental animals.
3. Functional observation battery tests (modified Irwin test)
4. Evaluation of CNS stimulant, depressant, anxiogenics and anxiolytic, anticonvulsant activity.
5. Evaluation of analgesic, anti-inflammatory, local anesthetic, mydriatic and miotic activity.
6. Evaluation of diuretic activity.
7. Evaluation of antiulcer activity by pylorus ligation method.
8. Oral glucose tolerance test.
9. Isolation and identification of DNA from various sources (Bacteria, Cauliflower, onion, Goat liver).
10. Isolation of RNA from yeast
11. Estimation of proteins by Bradford/Lowry's in biological samples.
12. Estimation of RNA/DNA by UV Spectroscopy
13. Gene amplification by PCR.
14. Protein quantification Western Blotting.
15. Enzyme based in-vitro assays (MPO, AChEs,  $\alpha$  amylase,  $\alpha$  glucosidase).
16. Cell viability assays (MTT/Trypan blue/SRB).
17. DNA fragmentation assay by agarose gel electrophoresis.
18. DNA damage study by Comet assay.
19. Apoptosis determination by fluorescent imaging studies.
20. Pharmacokinetic studies and data analysis of drugs given by different routes of administration using softwares
21. Enzyme inhibition and induction activity
22. Extraction of drug from various biological samples and estimation of drugs in biological fluids using different analytical techniques (UV)
23. Extraction of drug from various biological samples and estimation of drugs in biological fluids using different analytical techniques (HPLC)

## Guidelines for Pharm.D internship

1. In the Final year of academic program, each student will be posted to at least four different specialties during the internship period (12 months) on roster basis.
2. Out of the total internship duration of 12 months, 6 months training in General Medicine, two months training each in Pediatrics and O&G shall be made compulsory and evaluation of the training should be done through maintenance of a log book.
3. During internship each intern is expected to provide the following services in the ward independently.
  - Ward round participation
  - Treatment chart review
  - Medication history interview
  - Drugs and poison information
  - Detection and management of Adverse drug reactions
  - Patient counseling
  - Therapeutic interventions
4. Each student is required to maintain the log book of services provided on daily basis.
5. The internship work log book should be signed by a preceptor (Teacher – Practitioner) on weekly basis and provide feedback to the intern.
6. The internship work of the student should be assessed by testing the knowledge, skills and attitude during and also at the end of internship.
7. The evaluation of satisfactory completion of the internship is done based on
  - Proficiency of knowledge
  - Competency
  - Responsibility and punctuality
  - Involvement in patient care.
  - Team behavior
  - Initiative and participation in active discussions and research.

### 8. Evaluation Criterion

Intern's performance is evaluated using the following scoring system

Poor	Fair	Below Average	Average	Above average	Excellent
0	1	2	3	4	5

A score of 3 and above represents satisfactory completion of internship for the issue of internship completion certificate.

9. However, if the candidates work is not satisfactory & the scoring is less than 3 he/she has to continue the internship to the satisfaction of the Preceptors.

\*\*\*\*\*

## **CERTIFICATE OF INTERNSHIP**

**(on the institution letter head)**

This is to certify that Mr/Ms \_\_\_\_\_  
of \_\_\_\_\_ [Institution name and address] has  
successfully completed the Internship in the following  
units/departments as prescribed under regulation 16 and  
Appendix C of Pharm D Regulations 2008.

<b>Department</b>	<b>Date</b>		<b>Total duration [ in months ]</b>
	<b>From</b>	<b>To</b>	
<b>Medicine</b> [Six Months compulsory]			
<b>Any 3 of the following</b>			
<b>Surgery</b>			
<b>Paediatrics</b>			
<b>OB &amp;G</b>			
<b>Psychiatry</b>			
<b>Skin and VD</b>			
<b>Orthopaedics</b>			

**Preceptor**

**Head of the Institution**

**Seal of the Institution**

## Second year

### 2.1 PATHOPHYSIOLOGY (THEORY)

**Theory : 3 Hrs. /Week**

1. **Scope of the Subject:** This course is designed to impart a thorough knowledge of the relevant aspects of pathology of various conditions with reference to its pharmacological applications, and understanding of basic Pathophysiological mechanisms. Hence it will not only help to study the syllabus of pathology, but also to get baseline knowledge of its application in other subject of pharmacy.
2. **Objectives of the Subject :** Upon completion of the subject student shall be able to –
  - a. describe the etiology and pathogenesis of the selected disease states;
  - b. name the signs and symptoms of the diseases; and
  - c. mention the complications of the diseases.

#### **Text books (Theory)**

- a. Pathologic basis of disease by- Cotran, Kumar, Robbins
- b. Text book of Pathology- Harsh Mohan
- c. Text book of Pathology- Y.M. Bhide

#### **Reference books (Theory)**

- a. Clinical Pharmacy and Therapeutics; Second edition; Roger Walker; Churchill Livingstone publication

### 3. Detailed syllabus and lecture wise schedule :

#### **Chapter**

- 1 **Basic principles of cell injury and Adaptation**
  - a) Causes, Pathogenesis and morphology of cell injury
  - b) Abnormalities in lipoproteinaemia, glycogen infiltration and glycogen infiltration and glycogen infiltration and glycogen storage diseases
- 2 **Inflammation**
  - a) Pathogenesis of acute inflammation, Chemical mediators in inflammation, Types of chronic inflammation
  - b) Repairs of wounds in the skin, factors influencing healing of wounds
- 3 **Diseases of Immunity**
  - a) Introduction to T and B cells
  - b) MHC proteins or transplantation antigens
  - c) Immune tolerance
    - Hypersensitivity  
Hypersensitivity type I, II, III, IV, Biological significance, Allergy due to food, chemicals and drugs
    - Autoimmunity  
Criteria for autoimmunity, Classifications of autoimmune diseases in man, mechanism of autoimmunity, Transplantation and immunologic tolerance, allograft rejections, transplantation antigens, mechanism of rejection of allograft.
    - Acquired immune deficiency syndrome (AIDS)



- Amyloidosis

- 4 **Cancer:** differences between benign and malignant tumors, Histological diagnosis of malignancy, invasions and metastasis, patterns of spread, disturbances of growth of cells, classification of tumors, general biology of tumors, spread of malignant tumors, etiology and pathogenesis of cancer.
- 5 Types of shock, mechanisms, stages and management
- 6 Biological effects of radiation
- 7 Environmental and nutritional diseases
  - i) Air pollution and smoking- SO<sub>2</sub>,NO, NO<sub>2</sub>, and CO
  - ii) Protein calorie malnutrition, vitamins, obesity, pathogenesis of starvation.
- 8 Pathophysiology of common diseases
  - a. Parkinsonism
  - b. Schizophrenia
  - c. Depression and mania
  - d. Hypertension,
  - e. Stroke (ischaemic and hemorrhage)
  - f. Angina, CCF, Atherosclerosis, Myocardial infarction
  - g. Diabetes Mellitus
  - h. Peptic ulcer and inflammatory bowel diseases
  - i. Cirrhosis and Alcoholic liver diseases
  - j. Acute and chronic renal failure
  - k. Asthma and chronic obstructive airway diseases
- 9 Infectious diseases :  
Sexually transmitted diseases (HIV,Syphilis,Gonorrhoea), Urinary tract infections, Pneumonia, Typhoid, Tuberculosis, Leprosy, Malaria Dysentery (bacterial and amoebic ), Hepatitis- infective hepatitis.

#### 4. Assignments :

##### Title of the Experiment

- 1 Chemical Mediators of inflammation
- 2 Drug Hypersensitivity
- 3 Cigarette smoking & its ill effects
- 4 Biological Effects of Radiation
- 5 Etiology and hazards of obesity
- 6 Complications of diabetes
- 7 Diagnosis of cancer
- 8 Disorders of vitamins
- 9 Methods in Pathology-Laboratory values of clinical significance
- 10 Pathophysiology of Dengue Hemorrhagic Fever (DHF)

##### Format of the assignment

- 1 Minimum & Maximum number of pages.
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year
4. It shall be computer draft copy.
5. Name and signature of the student
6. Time allocated for presentation may be 8+2 Min.

## 2.2 PHARMACEUTICAL MICROBIOLOGY (THEORY)

**Theory : 3 Hrs. /Week**

- 1. Scope of the Subject:** Microbiology has always been an essential component of pharmacy curriculum. This is because of the relevance of microbiology to pharmaceutical sciences and more specifically to pharmaceutical industry. Pharmaceutical biotechnology is the logical extension of pharmaceutical microbiology, which is expected to change the complete drug product scenario in the future.

This course deals with the various aspects of microorganisms, its classification, morphology, laboratory cultivation identification and maintenance. It also discusses with sterilization of pharmaceutical products, equipment, media etc. The course further discusses the immunological preparations, diseases its transmission, diagnosis, control and immunological tests.

**2. Objectives of the Subject :**

Upon completion of the subject student shall be able to –

- know the anatomy, identification, growth factors and sterilization of microorganisms;
- know the mode of transmission of disease causing microorganism, symptoms of disease, and treatment aspect;
- do estimation of RNA and DNA and there by identifying the source;
- do cultivation and identification of the microorganisms in the laboratory;
- do identification of diseases by performing the diagnostic tests; and
- appreciate the behavior of motility and behavioral characteristics of microorganisms.

**Text books (Theory)**

- Vanitha Kale and Kishor Bhusari “ Applied Microbiology ” Himalaya Publishing house Mumbai.
- Mary Louis Turgeon “ Immunology and Serology in Laboratory Medicines” 2<sup>nd</sup> edition, 1996 Mosby- Year book inc St. Louis Missouri 63146.
- Harsh Mohan, “ Text book of Pathology” 3<sup>rd</sup> edition, 1998, B-3 Ansari road Darya ganj N. Delhi.

**Reference books (Theory)**

- Prescot L.M., Jarley G.P Klein D.A “Microbiology” 2<sup>nd</sup>- edition Mc Graw Hill Company Inc
- Rawlins E.A.”Bentley’s Text Book of Pharmaceutics” B ailliere Tindals 24-28 London 1988
- Forbisher “ Fundamentals of Microbiology” Philidelphia W.B. Saunders.
- Prescott L.M. Jarley G.P., Klein.D.A. “ Microbiology.”2<sup>nd</sup> edition WMC Brown Publishers, Oxford. 1993
- War Roitt, Jonathan Brostoff, David male, “ Immunology”3<sup>rd</sup> edition 1996, Mosby-year book Europe Ltd, London.
- Pharmacopoeia of India, Govt of India, 1996.

### 3. Detailed syllabus and lecture wise schedule :

#### Title of the topic

- 1 Introduction to the science of microbiology. Major divisions of microbial world and Relationship among them.
- 2 Different methods of classification of microbes and study of Bacteria, Fungi, virus, Rickettsiae, Spirochetes.
- 3 Nutritional requirements, growth and cultivation of bacteria and virus. Study of different important media required for the growth of aerobic and anaerobic bacteria & fungi. Differential media, enriched media and selective media, maintenance of lab cultures.
- 4 Different methods used in isolation and identification of bacteria with emphasis to different staining techniques and biochemical reactions. Counting of bacteria -Total and Viable counting techniques.
- 5 Detailed study of different methods of sterilization including their merits and demerits. Sterilization methods for all pharmaceutical products. Detailed study of sterility testing of different pharmaceutical preparations . Brief information on Validation.
- 6 Disinfectants- Study of disinfectants, antiseptics, fungicidal and virucidal agents factors affecting their activation and mechanism of action. Evaluation of bactericidal, bacteristatic, , virucidal activities, evaluation of preservatives in pharmaceutical preparations.
- 7 Immunology- Immunity, Definition, Classification, General principles of natural immunity, Phagocytosis, acquired immunity( active and passive ) . Antigens, chemical nature of antigens structure and formation of Antibodies, Antigen-Antibody reactions. Bacterial exotoxins and endotoxins. Significance of toxoids in active immunity, Immunization programme, and importance of booster dose.
- 8 Diagnostic tests : Schick's Test, Elisa test, Western Blot test, Southern Blot PCR Widal, QBC, Mantoux Peripheral smear. Study of malarial parasite.
- 9 Microbial culture sensitivity Testing: Interpretation of results Principles and methods of different microbiological assays, microbiological assay of Penicillin, Streptomycin and vitamin B<sub>2</sub> and B<sub>12</sub>. Standardisation of vaccines and sera.
- 10 Study of infectious diseases: Typhoid, Tuberculosis, Malaria, Cholera, Hepatitis, Meningitis, Syphilis & Gonorrhoea and HIV.

## 2.2 PHARMACEUTICAL MICROBIOLOGY (PRACTICAL)

**Practical : 3 Hrs./Week**

#### Title of the Experiment:

- 1 Study of apparatus used in experimental microbiology\*.
- 2 Sterilisation of glass ware's. Preparation of media and sterilisation.\*
- 3 Staining techniques – Simple staining ; Gram's staining ; Negative staining\*\*
- 4 Study of motility characters\*.
- 5 Enumeration of micro-organisms (Total and Viable)\*
- 6 Study of the methods of isolation of pure culture.\*
- 7 Bio chemical testing for the identification of micro\*-organisms.

- 8 Cultural sensitivity testing for some micro-organisms.\*
- 9 Sterility testing for powders and liquids.\*
- 10 Determination of minimum inhibitory concentration.\*
- 11 Microbiological assay of antibiotics by cup plate method.\*
- 12 Microbiological assay of vitamins by Turbidometric method\*\*
- 13 Determination of RWC.\*\*
- 14 Diagnostic tests for some common diseases, Widal, malarial parasite.\*\*

\* Indicate minor experiment & \*\* indicate major experiment

#### **Assignments:**

- 1 Visit to some pathological laboratories & study the activities and equipment/instruments used and reporting the same.
2. Visit to milk dairies (Pasturization) and microbial laboratories(other sterization methods) & study the activities and equipment/instruments used and reporting the same.
3. Library assignments
  - a. Report of recent microbial techniques developed in diagnosing some common diseases.
  - b. Latest advancement developed in identifying, cultivating & handling of microorganisms.

#### **Format of the assignment:**

1. Minimum & Maximum number of pages.
2. It shall be computer draft copy.
3. Reference(s) shall be included at the end.
4. Name and signature of the student.
5. Assignment can be a combined presentation at the end of the academic year.
6. Time allocated for presentation may be 8+2 Min.

#### **Scheme of Practical Examination:**

	<b>Sessionals</b>	<b>Annual</b>
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
<b>Max Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>03hrs</b>	<b>04hrs</b>

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).



## 2.3 PHARMACOGNOSY & PHYTOPHARMACEUTICALS (THEORY)

**Theory : 3 Hrs. /Week**

1. **Scope and objectives:** This subject has been introduced for the pharmacy course in order to make the student aware of medicinal uses of various naturally occurring drugs its history, sources, distribution, method of cultivation, active constituents, medicinal uses, identification tests, preservation methods, substitutes and adulterants.
2. **Upon completion of the course student shall be able to:**
  - a. under stand the basic principles of cultivation, collection and storage of crude drugs;
  - b. know the source, active constituents and uses of crude drugs; and
  - c. appreciate the applications of primary and secondary metabolites of the plant.

### 3. Course materials:

#### Text books

- a. Pharmacognosy by G.E. Trease & W.C.Evans.
- b. Pharmacognosy by C.K.Kokate,Gokhale & A.C.Purohit.

#### Reference books

- a. Pharmacognosy by Brady &Tyler.E.
- b. Pharmacognosy by T.E.Wallis.
- c. Pharmacognosy by C.S. Shah & Qadery.
- d. Pharmacognosy by M.A. Iyengar.

### 4. Lecture wise programme:

#### Topics

- 1 Introduction.
- 2 Definition, history and scope of Pharmacognosy.
- 3 Classification of crude drugs.
- 4 Cultivation, collection, processing and storage of crude drugs.
- 5 Detailed method of cultivation of crude drugs.
- 6 Study of cell wall constituents and cell inclusions.
- 7 Microscopical and powder Microscopical study of crude drugs.
- 8 Study of natural pesticides.
- 9 Detailed study of various cell constituents.
- 10 Carbohydrates and related products.
- 11 Detailed study carbohydrates containing drugs.(11 drugs)
- 12 Definition sources, method extraction, chemistry and method of analysis of lipids.
- 13 Detailed study of oils.
- 14 Definition, classification, chemistry and method of analysis of protein.
- 15 Study of plants fibers used in surgical dressings and related products.
- 16 Different methods of adulteration of crude drugs.

## 2.3 PHARMACOGNOSY & PHYTOPHARMACEUTICALS (PRACTICAL)

**Practical : 3 Hrs./Week**

**General Requirements:** Laboratory Napkin, Observation Book 150 pages Zero brush, Needle, Blade, Match box.

**List of experiments:**

- 1 Introduction of Pharmacognosy laboratory and experiments.
- 2 Study of cell wall constituents and cell inclusions.
- 3 Macro, powder and microscopic study of Datura.
- 4 Macro, powder and microscopic study of Senna.
- 5 Macro, powder and microscopic study of Cassia.cinnamon.
- 6 Macro, powder and microscopic study of Cinchona.
- 7 Macro, powder and microscopic study of Ephedra.
- 8 Macro, powder and microscopic study of Quassia.
- 9 Macro, powder and microscopic study of Clove
- 10 Macro, powder and microscopic study of Fennel.
- 11 Macro, powder and microscopic study of Coriander.
- 12 Macro, powder and microscopic study of Isapgol.
- 13 Macro, powder and microscopic study of Nux vomica.
- 14 Macro, powder and microscopic study of Rauwolfia.
- 15 Macro, powder and microscopic study of Liquorice.
- 16 Macro, powder and microscopic study of Ginger.
- 17 Macro, powder and microscopic study of Podophyllum.
- 18 Determination of Iodine value.
- 19 Determination of Saponification value and unsaponifiable matter.
- 20 Determination of ester value.
- 21 Determination of Acid value.
- 22 Chemical tests for Acacia.
- 23 Chemical tests for Tragacanth.
- 24 Chemical tests for Agar.
- 25 Chemical tests for Starch.
- 26 Chemical tests for Lipids.(castor oil,sesame oil, shark liver oil,bees wax)
- 27 Chemical tests for Gelatin.

**Scheme of Practical Examination:**

	<b>Sessionals</b>	<b>Annual</b>
Identification	04	10
Synopsis	04	10
Major Experiment	07	20
Minor Experiment	03	15
Viva	02	15
<b>Max Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>03hrs</b>	<b>04hrs</b>

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance.

## 2.4 PHARMACOLOGY – I (THEORY)

### Theory : 3 Hrs. /Week

1. **Scope of the Subject:** This subject will provide an opportunity for the student to learn about the drug with regard to classification, pharmacodynamic and pharmacokinetic aspects, adverse effects, uses, dose, route of administration, precautions, contraindications and interaction with other drugs. In this subject, apart from general pharmacology, drugs acting on autonomic nervous system, cardiovascular system, central nervous system, blood and blood forming agents and renal system will be taught. In addition to theoretical knowledge, the basic practical knowledge relevant to therapeutics will be imparted.
2. **Objectives of the Subject :** Upon completion of the subject student shall be able to (Know, do, appreciate) –
  - a. understand the pharmacological aspects of drugs falling under the above mentioned chapters;
  - b. handle and carry out the animal experiments;
  - c. appreciate the importance of pharmacology subject as a basis of therapeutics; and
  - d. correlate and apply the knowledge therapeutically.

#### **Text books (Theory)** (Author, Title, Edition, Publication Place, Publisher, Year of Publication)

- a. Tripathi, K. D. Essentials of medical pharmacology. 4<sup>th</sup> Ed, 1999. Publisher: Jaypee, Delhi.
- b. Satoskar, R.S. and Bhadarkar, S.D. Pharmacology and pharmacotherapeutics. 16<sup>th</sup> edition (single volume), 1999. Publisher: Popular, Dubai.
- c. Rang, H.P. & Dale, M.M. Pharmacology. 4<sup>th</sup> edition, 1999. Publisher: Churchill Living stone.

#### **Reference books (Theory)**(Author, Title, Edition, Publication Place, Publisher, Publication Year)

- a. Goodman Gilman, A., Rall, T.W., Nies, A.I.S. and Taylor, P. Goodman and Gilman's The pharmacological Basis of therapeutics. 9<sup>th</sup> Ed, 1996. Publisher Mc Graw Hill, Pergamon press.
- b. Craig, C.R.&Stitzel, R.E. Modern Pharmacology. Latest edition. Publisher: Little Brown.Co
- c. Katzung, B.G. Basic and clinical pharmacology. Latest edition. Publisher: Prentice Hall, Int.
- d. Shargel and Leon. Applied Biopharmaceutics and pharmacokinetics. Latest edition. Publisher: Prentice Hall, London.

#### **Text books (Practical) :**

Kulkarni, S. K. and Dandia, P. C. Hand book of experimental pharmacology. Latest edition, Publisher: Vallab, Delhi.

#### **Reference books (Practical)**

- a. Macleod, L.J. Pharmacological experiments on intact preparations. Latest edition, Publisher: Churchill livingstone.

- b. Macleod, L.J. Pharmacological experiments on isolated preparations. Latest edition, Publisher: Churchill livingstone.
- c. Ghosh, M.N. Fundamentals of experimental pharmacology. Latest edition, Publisher: Scientific book agency, Kolkata.
- d. Ian Kitchen. Textbook of in vitro practical pharmacology. Latest edition, Publisher: Black well Scientific.

### 3. Detailed syllabus and lecture wise schedule :

#### Title of the topic

##### 1. **General Pharmacology**

- a) Introduction, definitions and scope of pharmacology
- b) Routes of administration of drugs
- c) Pharmacokinetics (absorption, distribution, metabolism and excretion)
- d) Pharmacodynamics
- e) Factors modifying drug effects
- f) Drug toxicity - Acute, sub-acute and chronic toxicity.
- g) Pre-clinical evaluations
- h) Drug interactions

*Note:* The term Pharmacology used here refers to the classification, mechanism of action, pharmacokinetics, pharmacodynamics, adverse effects, contraindications, Therapeutic uses, interactions and dose and route of administration.

##### 2. **Pharmacology of drugs acting on ANS**

- a) Adrenergic and antiadrenergic drugs
- b) Cholinergic and anticholinergic drugs
- c) Neuromuscular blockers
- d) Mydriatics and miotics
- e) Drugs used in myasthenia gravis
- f) Drugs used in Parkinsonism

##### 3. **Pharmacology of drugs acting on cardiovascular system**

- a) Antihypertensives
- b) Anti-anginal drugs
- c) Anti-arrhythmic drugs
- d) Drugs used for therapy of Congestive Heart Failure
- e) Drugs used for hyperlipidaemias



4. **Pharmacology of drugs acting on Central Nervous System**
  - a) General anesthetics
  - b) Sedatives and hypnotics
  - c) Anticonvulsants
  - d) Analgesic and anti-inflammatory agents
  - e) *Psychotropic drugs*
  - f) Alcohol and methyl alcohol
  - g) CNS stimulants and cognition enhancers
  - h) Pharmacology of local anaesthetics
  
5. **Pharmacology of Drugs acting on Respiratory tract**
  - a) Bronchodilators
  - b) Mucolytics
  - c) Expectorants
  - d) Antitussives
  - e) Nasal Decongestants
  
6. **Pharmacology of Hormones and Hormone antagonists**
  - a) Thyroid and Antithyroid drugs
  - b) Insulin, Insulin analogues and oral hypoglycemic agents
  - c) Sex hormones and oral contraceptives
  - d) Oxytocin and other stimulants and relaxants
  
7. **Pharmacology of autocooids and their antagonists**
  - a) Histamines and Antihistaminics
  - b) 5-Hydroxytryptamine and its antagonists
  - c) Lipid derived autocooids and platelet activating factor

## 2.5 COMMUNITY PHARMACY (THEORY)

**Theory : 2 Hrs. /Week**

1. **Scope:** In the changing scenario of pharmacy practice in India, Community Pharmacists are expected to offer various pharmaceutical care services. In order to meet this demand, students will be learning various skills such as dispensing of drugs, responding to minor ailments by providing suitable safe medication, patient counselling, health screening services for improved patient care in the community set up.
2. **Objectives:** Upon completion of the course, the student shall be able to –
  - a. know pharmaceutical care services;
  - b. know the business and professional practice management skills in community pharmacies;
  - c. do patient counselling & provide health screening services to public in community pharmacy;
  - d. respond to minor ailments and provide appropriate medication;
  - e. show empathy and sympathy to patients; and
  - f. appreciate the concept of Rational drug therapy.

### **Text Books:**

- a. Health Education and Community Pharmacy by N.S.Parmar.
- b. WHO consultative group report.
- c. Drug store & Business management by Mohammed Ali & Jyoti.

### **Reference books:**

- a. Handbook of pharmacy – health care. Edt. Robin J Harman. The Pharmaceutical press.
- b. Comprehensive Pharmacy Review – Edt. Leon Shargel. Lippincott Williams & Wilkins.

### **Special requirements:**

1. Either the college is having model community pharmacy (meeting the schedule N requirement) or sign MoU with at least 4-5 community pharmacies nearby to the college for training the students on dispensing and counselling activities.
2. Special equipments like B.P apparatus, Glucometer, Peak flow meter, and apparatus for cholesterol estimation.

### **3. Scheme of evaluation (80 Marks)**

- |                                                                                                                                                                 |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 1. Synopsis                                                                                                                                                     | 10 |
| 2. Major Experiment<br>(Counselling of patients with specific diseases – emphasis should be given on Counselling introduction, content, process and conclusion) | 30 |
| 3. Minor Experiment (Ability to measure B.P/ CBG / Lung function)                                                                                               | 15 |
| 4. Prescription Analysis (Analyzing the prescriptions for probable drug interaction and ability to tell the management)                                         | 15 |
| 5. Viva – Voce                                                                                                                                                  | 10 |

#### 4. Lecture wise programme :

##### Topics

- 1 **Definition, scope, of community pharmacy  
Roles and responsibilities of Community pharmacist**
- 2 **Community Pharmacy Management**
  - a) Selection of site, Space layout, and design
  - b) Staff, Materials- coding, stocking
  - c) Legal requirements
  - d) Maintenance of various registers
  - e) Use of Computers: Business and health care soft wares
- 3 **Prescriptions – parts of prescription, legality & identification of medication related problems like drug interactions.**
- 4 **Inventory control in community pharmacy**  
Definition, various methods of Inventory Control  
**ABC, VED, EOQ, Lead time, safety stock**
- 5 **Pharmaceutical care**  
Definition and Principles of Pharmaceutical care.
- 6 **Patient counselling**  
Definition, outcomes, various stages, barriers, Strategies to overcome barriers  
Patient information leaflets- content, design, & layouts, advisory labels
- 7 **Patient medication adherence**  
Definition, Factors affecting medication adherence, role of pharmacist in improving the adherence.
- 8 **Health screening services**  
Definition, importance, methods for screening  
Blood pressure/ blood sugar/ lung function and Cholesterol testing
- 9 **OTC Medication- Definition, OTC medication list & Counselling**
- 10 **Health Education**  
WHO Definition of health, and health promotion, care for children, pregnant & breast feeding women, and geriatric patients.  
Commonly occurring Communicable Diseases, causative agents, Clinical presentations and prevention of communicable diseases – Tuberculosis, Hepatitis, Typhoid, Amoebiasis, Malaria, Leprosy, Syphilis, Gonorrhea and AIDS  
Balance diet, and treatment & prevention of deficiency disorders  
Family planning – role of pharmacist
- 11 **Responding to symptoms of minor ailments**  
Relevant pathophysiology, common drug therapy to, Pain, GI disturbances (Nausea, Vomiting, Dyspepsia, diarrhea, constipation), Pyrexia, Ophthalmic symptoms, worms infestations.
- 12 **Essential Drugs concept and Rational Drug Therapy**  
**Role of community pharmacist**
- 13 **Code of ethics for community pharmacists**

## 2.6 PHARMACOTHERAPEUTICS - I (THEORY)

**Theory : 3 Hrs. /Week**

1. **Scope of the Subject:** This course is designed to impart knowledge and skills necessary for contribution to quality use of medicines. Chapters dealt cover briefly pathophysiology and mostly therapeutics of various diseases. This will enable the student to understand the pathophysiology of common diseases and their management.
2. **Objectives:** At completion of this subject it is expected that students will be able to understand –
  - a. the pathophysiology of selected disease states and the rationale for drug therapy;
  - b. the therapeutic approach to management of these diseases;
  - c. the controversies in drug therapy;
  - d. the importance of preparation of individualised therapeutic plans based on diagnosis;
  - e. needs to identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects);
  - f. describe the pathophysiology of selected disease states and explain the rationale for drug therapy;
  - g. summarise the therapeutic approach to management of these diseases including reference to the latest available evidence;
  - h. discuss the controversies in drug therapy;
  - i. discuss the preparation of individualised therapeutic plans based on diagnosis; and
  - j. identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).

### **Text Books**

- a. Clinical Pharmacy and Therapeutics - Roger and Walker, Churchill Livingstone publication.
- b. Pharmacotherapy: A Pathophysiologic approach - Joseph T. Dipiro et al. Appleton & Lange.

### **Reference Books**

- a. Pathologic basis of disease - Robins SL, W.B.Saunders publication.
- b. Pathology and therapeutics for Pharmacists: A Basis for Clinical Pharmacy Practice - Green and Harris, Chapman and Hall publication.
- c. Clinical Pharmacy and Therapeutics - Eric T. Herfindal, Williams and Wilkins Publication.
- d. Applied Therapeutics: The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA
- e. Avery's Drug Treatment, 4th Edn, 1997, Adis International Limited.
- f. Relevant review articles from recent medical and pharmaceutical literature.



### 3. Detailed syllabus and lecture wise schedule :

**Etiopathogenesis and pharmacotherapy of diseases associated with following systems/ diseases**

**Title of the topic**

- 1 **Cardiovascular system:** Hypertension, Congestive cardiac failure, Angina Pectoris, Myocardial infarction, Hyperlipidaemias, Electrophysiology of heart and Arrhythmias
- 2 **Respiratory system :** Introduction to Pulmonary function test, Asthma, Chronic obstructive airways disease, Drug induced pulmonary diseases  
**Endocrine system :** Diabetes, Thyroid diseases, Oral contraceptives, Hormone replacement therapy, Osteoporosis
- 3 **General prescribing guidelines for**
  - a. Paediatric patients
  - b. Geriatric patients
  - c. Pregnancy and breast feeding
- 4 **Ophthalmology:** Glaucoma, Conjunctivitis- viral & bacterial
- 5 **Introduction to rational drug use**  
Definition, Role of pharmacist Essential drug concept Rational drug formulations

## 2.6 PHARMACOTHERAPEUTICS - I (PRACTICAL)

**Practical : 3 Hrs./Week**

**Practicals :**

Hospital postings in various departments designed to complement the lectures by providing practical clinical discussion; attending ward rounds; follow up the progress and changes made in drug therapy in allotted patients; case presentation upon discharge. Students are required to maintain a record of cases presented and the same should be submitted at the end of the course for evaluation. A minimum of 20 cases should be presented and recorded covering most common diseases.

**Assignments :**

Students are required to submit written assignments on the topics given to them. Topics allotted should cover recent developments in drug therapy of various diseases. A minimum of THREE assignments [1500 – 2000 words] should be submitted for evaluation.

**Format of the assignment:**

1. Minimum & Maximum number of pages.
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year.
4. It shall be computer draft copy.
5. Name and signature of the student.
6. Time allocated for presentation may be 8+2 Min.

**Scheme of Practical Examination:**

	<b>Sessionals</b>	<b>Annual</b>
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
<b>Max Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>03hrs</b>	<b>04hrs</b>

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

## **Third Year**

### **3.1 PHARMACOLOGY – II (THEORY)**

**Theory : 3 Hrs. /Week**

- 1. Scope of the Subject:** This subject will provide an opportunity for the student to learn about the drug with regard to classification, pharmacodynamic and pharmacokinetic aspects, adverse effects, uses, dose, route of administration, precautions, contraindications and interaction with other drugs. In this subject, drugs acting on autacoids, respiratory system, GIT, immune system and hormones, and pharmacology of autocoids and hormones will be concentrated. In addition, pharmacology of chemotherapeutic agents, vitamins, essential minerals and principles of toxicology are also taught. In addition to theoretical knowledge, the basic practical knowledge relevant to therapeutics will be imparted.
- 2. Objectives of the Subject Upon completion of the subject student shall be able to:**
  - a. understand the pharmacological aspects of drugs falling under the above mentioned chapters,
  - b. carry out the animal experiments confidently,
  - c. appreciate the importance of pharmacology subject as a basis of therapeutics, and
  - d. correlate and apply the knowledge therapeutically.

#### **Text books (Theory)**

- a. Tripathi, K. D. Essentials of medical pharmacology. 4<sup>th</sup> edition, 1999. Publisher: Jaypee, Delhi.
- b. Satoskar, R.S. and Bhadarkar, S.D. Pharmacology and pharmacotherapeutics. 16<sup>th</sup> edition (single volume), 1999. Publisher: Popular, Dubai.
- c. Rang, H.P. and Dale, M.M. Pharmacology. 4<sup>th</sup> edition, 1999. Publisher: Churchill Living stone.

#### **Reference books (Theory)**

- a. Goodman Gilman, A., Rall, T.W., Nies, A.I.S. and Taylor, P. Goodman and Gilman's The pharmacological Basis of therapeutics. 9<sup>th</sup> edition, 1996. Publisher: Mc Graw Hill, Pergamon press.
- b. Craig, C.R. and Stitzel, R.E. Modern Pharmacology. Latest edition. Publisher: Little Brown and company.
- c. Katzung, B.G. Basic and clinical pharmacology. Latest edition. Publisher: Prentice Hall, International.
- d. Gupta, P.K. and Salunkhe, D.K. Modern Toxicology. Volume I, II and III. Latest edition. Publisher: B.V. Gupta, Metropolitan Book Co. (p) Ltd, New Delhi.

#### **Text books (Practical)**

Kulkarni, S. K. and Dandia, P. C. Hand book of experimental pharmacology. Latest edition, Publisher: Vallab, Delhi.

**Reference books (Practical) :**

- a. Macleod, L.J. Pharmacological experiments on intact preparations. Latest edition, Publisher: Churchill livingstone.
- b. Macleod, L.J. Pharmacological experiments on isolated preparations. Latest edition, Publisher: Churchill livingstone.
- c. Ghosh, M.N. Fundamentals of experimental pharmacology. Latest edition, Publisher: Scientific book agency, Kolkata.
- d. Ian Kitchen. Textbook of in vitro practical pharmacology. Latest edition, Publisher: Black well Scientific.

**3. Detailed syllabus and lecture wise schedule:****Title of the topic**

1. **Pharmacology of Drugs acting on Blood and blood forming agents**
  - a) Anticoagulants
  - b) Thrombolytics and antiplatelet agents
  - c) Haemopoietics and plasma expanders
2. **Pharmacology of drugs acting on Renal System**
  - a) Diuretics
  - b) Antidiuretics
3. **Chemotherapy**
  - a) Introduction
  - b) Sulfonamides and co-trimoxazole
  - c) Penicillins and Cephalosporins
  - d) Tetracyclins and Chloramphenicol
  - e) Macrolides, Aminoglycosides, Polyene & Polypeptide antibiotics
  - f) Quinolines and Fluroquinolines
  - g) Antifungal antibiotics
  - h) Antiviral agents
  - i) Chemotherapy of tuberculosis and leprosy
  - j) Chemotherapy of Malaria
  - k) Chemotherapy of protozoal infections (amoebiasis, Giardiasis)
  - l) Pharmacology of Anthelmintic drugs
  - m) Chemotherapy of cancer (Neoplasms)
4. **Immunopharmacology**  
Pharmacology of immunosuppressants and stimulants
5. **Principles of Animal toxicology**  
Acute, sub acute and chronic toxicity

6. **The dynamic cell: The structures and functions of the components of the cell**

- a) Cell and macromolecules: Cellular classification, subcellular organelles, macromolecules, large macromolecular assemblies
- b) Chromosome structure: Pro and eukaryotic chromosome structures, chromatin structure, genome complexity, the flow of genetic information.
- c) DNA replication: General, bacterial and eukaryotic DNA replication.
- d) The cell cycle: Restriction point, cell cycle regulators and modifiers.
- e) Cell signaling: Communication between cells and their environment, ion-channels, signal transduction pathways (MAP kinase, P38 kinase, JNK, Ras and PI3-kinase pathways, biosensors).

**The Gene: Genome structure and function:**

- a) Gene structure: Organization and elucidation of genetic code.
- b) Gene expression: Expression systems (pro and eukaryotic), genetic elements that control gene expression (nucleosomes, histones, acetylation, HDACS, DNA binding protein families.
- c) Transcription and Transcription factors: Basic principles of transcription in pro and eukaryotes. Transcription factors that regulate transcription in pro and eukaryotes.

RNA processing: rRNA, tRNA and mRNA processing.

Protein synthesis: Mechanisms of protein synthesis, initiation in eukaryotes, translation control and post-translation events

Altered gene functions: Mutations, deletions, amplifications, LOH, traslocations, trinucleotide repeats and other genetic abnormalities.

Oncogenes and tumor suppressor genes.

The gene sequencing, mapping and cloning of human disease genes.

Introduction to gene therapy and targeting.

Recombinant DNA technology: principles. Processes (gene transfer technology) and applications

**Books:**

- 1 Molecular Biology of the Cell by Alberts B., Bray, D., Lewis, J., Raff M., Roberts, K and Watson, JD, 3<sup>rd</sup> edition.
- 2 Molecular Cell Biology By Lodish, H., Baltimore, D., Berk, A et al., 5<sup>th</sup> edition.
- 3 Molecular Biology by Turner, PC., McLennan, AG., Bates, AD and White MRH 2<sup>nd</sup> edition.
- 4 Genes VIII by Lewin, B., (2004)
- 5 Pharmaceutical Biotechnology, by Crommelin, DJA and Sindelar RD (1997)
- 6 Recombinant DNA by Watson, JD., Gilman, M., et al., (1996)
- 7 Biopharmaceutical: Biochemistry and Biotechnology by Walsh, G., (1998)



### 3.1 PHARMACOLOGY – II (PRACTICAL)

**Practical : 3 Hrs./Week**

**List of Experiments:**

1. Study of laboratory animals and their handling (a. Frogs, b. Mice, c. Rats, d. Guinea pigs, e. Rabbits).
2. Study of physiological salt solutions used in experimental pharmacology.
3. Study of laboratory appliances used in experimental pharmacology.
4. Study of use of anesthetics in laboratory animals.
5. To record the dose response curve of Ach using isolated ileum/rectus abdominis muscle preparation.
6. To carry out bioassay of Ach using isolated ileum/rectus abdominis muscle preparation by interpolation method.
7. To carry out bioassay of Ach using isolated ileum/rectus abdominis muscle preparation by three point method.
8. To record the dose response curve of Histamine using isolated guinea-pig ileum preparation.
9. Study of agonistic and antagonistic effects of drugs using isolated guinea-pig ileum preparation.
10. To carry out bioassay of Histamine using isolated guinea-pig ileum preparation by interpolation method.
11. To carry out bioassay of Histamine using guinea-pig ileum preparation by three point method.
12. To study the routes of administration of drugs in animals (Rats, Mice, Rabbits).
13. Study of theory, principle, procedure involved and interpretation of given results for the following experiments:
  - a) Analgesic property of drug using analgesiometer.
  - b) Antiinflammatory effect of drugs using rat-paw edema method.
  - c) Anticonvulsant activity of drugs using maximal electroshock and pentylene tetrazole methods.
  - d) Antidepressant activity of drugs using pole climbing apparatus and pentobarbitone induced sleeping time methods.
  - e) Locomotor activity evaluation of drugs using actophotometer and rotorod.
  - f) Cardiotonic activity of drugs using isolated frog heart and mammalian heart preparations.

**Scheme of Practical Examination:**

	<b>Sessionals</b>	<b>Annual</b>
Identification	02	10
Synopsis	04	10
Major Experiment (Bioassay)	08	30
Minor Experiment (Interpretation of given Graph or simulated experiment)	04	10
Viva	02	10
<b>Max Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>3hrs</b>	<b>4hrs</b>

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

### 3.2 PHARMACEUTICAL ANALYSIS (THEORY)

**Theory : 3 Hrs. /Week**

**1. Quality Assurance:**

- a. Introduction, sources of quality variation, control of quality variation.
- b. Concept of statistical quality control.
- c. Validation methods- quality of equipment, validation of equipment and validation of analytical instruments and calibration.
- d. GLP, ISO 9000.
- e. Total quality management, quality review and documentation.
- f. ICH- international conference for harmonization-guidelines.
- g. Regulatory control.

**2. Chromatography:**

Introduction, history, classification, separation techniques, choice of methods. The following techniques be discussed with relevant examples of pharmaceutical products involving principles and techniques of separation of drugs from excipients.

- a. **Column Chromatography:** Adsorption column chromatography, Operational technique, frontal analysis and elution analysis. Factors affecting column efficiency, applications and partition chromatography.
- b. **TLC:** Introduction, principle, techniques,  $R_f$  value and applications.
- c. **PC:** Introduction, principle, types of paper chromatography, preparation techniques, development techniques, applications.
- d. **Ion-exchange chromatography:** Introduction, principles, types of ion exchange synthetic resins, physical properties, factors affecting ion exchange, methodology and applications.
- e. **HPLC:** Introduction, theory, instrumentation, and applications.
- f. **HPTLC:** Introduction, theory, instrumentation, and applications.
- g. **Gas Chromatography:** Introduction, theory, instrumentation-carrier gases, types of columns, stationary phases in GLC & GSC. Detectors- Flame ionization detectors, electron capture detector, thermal conductivity detector. Typical gas chromatogram, derivatisation techniques, programmed temperature gas chromatography, applications.
- h. **Electrophoresis:** Principles of separation, equipment for paper and gel electrophoresis, and application.
- i. **Gel filtration and affinity chromatography:** Introduction, technique, applications.

### 3. **Electrometric Methods:**

Theoretical aspects, instrumentation, interpretation of data/spectra and analytical applications be discussed on the following topics.

- a. **Potentiometry:** Electrical potential, electrochemical cell, reference electrodes, indicator electrodes, measurement of potential and pH, construction and working of electrodes, Potentiometric titrations, methods of detecting end point, Karl Fischer titration.
- b. **Conductometry:** Introduction, conductivity cell, conductometric titrations and applications.
- c. **Polarography:** Instrumentation, DME, residual current, diffusion current and limiting current, polarographic wave, Ilkovic's equation, Effect of oxygen on polarographic wave, Polarographic maxima and suppressors and applications.
- d. **Amperometric Titrations:** Introduction, types of electrodes used, reference and indicator electrode, instrumentation, titration procedure, advantages and disadvantages of Amperometry over potentiometry. Pharma applications.

### 4. **Spectroscopy:**

Theoretical aspects, instrumentation, elements of interpretation of data/spectra and application of analytical techniques be discussed on:

#### a. **Absorption Spectroscopy:**

- Theory of electronic, atomic and molecular spectra. Fundamental laws of photometry, Beer-Lambert's Law, application and its deviation, limitation of Beer law, application of the law to single and multiple component analysis, measurement of equilibrium constant and rate constant by spectroscopy. Spectra of isolated chromophores, auxochromes, batho-chromic shift, hypsochromic shift, hyperchromic and hypochromic effect, effect of solvent on absorption spectra, molecular structure and infrared spectra.  
**Instrumentation** – Photometer, U.V.-Visible spectrophotometer – sources of U.V.-Visible radiations, collimating systems, monochromators, samples cells and following detectors-Photocell, Barrier layer cell, Phototube, Diode array, applications of U.V.-Visible spectroscopy in pharmacy and spectrophotometric titrations.
- **Infrared Spectroscopy:** Vibrational transitions, frequency – structure correlations, Infrared absorption bands, Instrumentation–IR spectrometer – sources of IR, Collimating systems, monochromators, sample cells, sample handling in IR spectroscopy and detectors– Thermocouple, Golay Cells, Thermistor, Bolometer, Pyroelectric detector, Applications of IR in pharmacy.

- **Fluorimetric Analysis:** Theory, luminescence, factors affecting fluorescence, quenching. Instrumentation, Applications, fluorescent indicators, study of pharmaceutically important compounds estimated by fluorimetry.
- b. **Flame Photometry:** Theory, nebulisation, flame and flame temperature, interferences, flame spectrometric techniques and instrumentation and pharmaceutical applications.
- c. **Atomic Absorption Spectrometry:** Introduction, Theory, types of electrodes, instrumentation and applications.
- d. **Atomic Emission Spectroscopy:** Spectroscopic sources, atomic emission spectrometers, photographic and photoelectric detection.
- e. **NMR & ESR (introduction only):** Introduction, theoretical aspects and applications.
- f. **Mass Spectroscopy: (Introduction only)** – Fragmentation, types of ions produced mass spectrum and applications.
- g. **Polarimetry: (Introduction only)** – Introduction to optical rotatory dispersion, circular dichroism, polarimeter.
- h. **X-RAY Diffraction: (Introduction only)** – Theory, reciprocal lattice concept, diffraction patterns and applications.
- i. **Thermal Analysis:** Introduction, instrumentation, applications, and DSC and DTA.

### 3.2 PHARMACEUTICAL ANALYSIS (PRACTICAL)

**Practical : 3 Hrs./Week**

**List of Experiments:**

1. Separation and identification of Amino Acids by Paper Chromatography.
2. Separation and identification of Sulpha drugs by TLC technique.
3. Effect of pH and solvent on the UV spectrum of given compound.
4. Comparison of the UV spectrum of a compound with that of its derivatives.
5. Determination of dissociation constant of indicators using UV-Visible spectroscopy.
6. Conductometric titration of mixture of acids with a strong base.
7. Potentiometric titration of a acid with a strong base.
8. Estimation of drugs by Fluorimetric technique.
9. Study of quenching effect in fluorimetry.
10. Colourimetric estimation of Supha drugs using BMR reagent.

11. Simultaneous estimation of two drugs present in given formulation.
12. Assay of Salicylic Acid by colourimetry.
13. Determination of Chlorides and Sulphates in Calcium gluconate by Nepheloturbidimetric Method.
14. Determination of Na/K by Flame Photometry.
15. Determination of pKa using pH meter.
16. Determination of specific rotation.
17. Comparison of the IR spectrum of a compound with that of its derivatives.
18. Demonstration of HPLC.
19. Demonstration of HPTLC.
20. Demonstration of GC-MS.
21. Demonstration of DSC.
22. Interpretation of NMR spectra of any one compound.

**Reference Books:**

1. Text Book of Pharm. Analysis by Higuchi. T and Hasen. E. B., New York Inter Science Publishers.
2. Quantitative Pharma. Analysis by Jenkins, The Blakiston division, New York.
3. Quantitative Drug Analysis, by Garrot. D, Chapman & Hall Ltd., London.
4. Undergraduate Instrumental Analysis by James. E., CBS Publishers.
5. Instrumental Analysis by Willard and Merritt, EWP, East West Press Ltd., Delhi/Madras.
6. Pharm Analysis by Skoog and West, Sounders Manipal College Publishing.
7. Text Book of Chemical Analysis, by A.I.Vogel, ELBS with Macmillan press, Hampshire.
8. Textbook of Pharm. Analysis by K.A.Connors, John Wiley & Sons, New York, Brisbane, Singapore.
9. Textbook of Pharm. Analysis (Practical) by Beckett & Stenlake, CBS Publishers, Delhi.
10. Textbook of Drug Analysis by P.D. Sethi., CBS Publishers, Delhi.
11. Spectroscopy by Silverstein, John & Wiley & Sons. Inc., Canada & Singapore.
12. How to practise GMP-A Plan for total quality control by P.P. Sharma, Vandana Publications, Agra.
13. The Science & Practice of Pharmacy by Remington Vol-I & II, Mack Publishing Co. Pennsylvania.
14. TLC by Stahl, Spring Verlay.
15. Text Book of Pharm. Chemistry by Chatten, CBS Publications.
16. Spectroscopy by William Kemp, ELBS with Macmillan Press, Hampshire.
17. I.P.-1996, The Controller of Publications, New Delhi.
18. BPC- Dept. of Health, U.K. for HMSO.
19. USP - Mack Publishing Co., Easton, PA.
20. The Extra Pharmacopoeia – The Pharm. Press, London.



## Practicals

### Title of the Experiment:

- 1 Study of agonistic and antagonistic effects of drugs using Guinea-pig ileum preparation.\*\*
- 2 To study the effects of drugs on intestinal motility using frog's esophagus model\*
- 3 To study the effects of drugs using rat uterus preparation.\*\*
- 4 To study the anticonvulsant property of drugs (any one model).\*
- 5 To study antihistaminic property of drug using histamine induced anaphylactic reaction in guinea pigs.
- 6 To study the apomorphine-induced compulsive behaviour (stereotypy) in mice.\*
- 7 To study the muscle relaxant property of diazepam in mice using rotarod apparatus.\*
- 8 To study the antiinflammatory property of indomethacin against carrageenan-induced paw oedema.\*\*
- 9 To study the anxiolytic effect of diazepam in mice using mirrored-chamber apparatus.\*\*
- 10 To demonstrate the effect of various drugs on the blood pressure and respiration of anaesthetized dog.
- 11 To study the effect of anthelmintics on earthworms.
- 12 To study the taming effect of chlorpromazine.\*
- 13 To study the effects of drugs on vas deferense of the male rat.\*\*
- 14 To study the effect of drugs on pesticide toxicity using rats as model.
- 15 To study the effect of drugs on heavy metal toxicity.

\*\* indicate major experiment & \* indicate minor experiment

### Scheme of Practical Examination:

	Sessionals	Annual
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
<b>Max Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>03hrs</b>	<b>04hrs</b>

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

### 3.3 PHARMACOTHERAPEUTICS – II (THEORY)

**Theory : 3 Hrs. /Week**

1. **Scope of the Subject:** This course is designed to impart knowledge and skills necessary for contribution to quality use of medicines. Chapters dealt cover briefly pathophysiology and mostly therapeutics of various diseases. This will enable the student to understand the pathophysiology of common diseases and their management.
2. **Objectives of the Subject Upon completion of the subject student shall be able to –**
  - a. know the pathophysiology of selected disease states and the rationale for drug therapy
  - b. know the therapeutic approach to management of these diseases;
  - c. know the controversies in drug therapy;
  - d. know the importance of preparation of individualised therapeutic plans based on diagnosis; and
  - e. appreciate the needs to identify the patient-specific parameters relevant in initiating drug therapy, and monitoring therapy (including alternatives, time-course of clinical and laboratory indices of therapeutic response and adverse effects).

**Text books (Theory)**

Clinical Pharmacy and Therapeutics - Roger and Walker, Churchill Livingstone publication

**Reference books (Theory)**

- a. Pharmacotherapy: A Pathophysiologic approach - Joseph T. Dipiro et al. Appleton & Lange
- b. Clinical Pharmacy and Therapeutics - Eric T. Herfindal, Williams and Wilkins Publication
- c. Applied Therapeutics: The clinical Use of Drugs. Lloyd Young and Koda-Kimble MA]

**3. Detailed syllabus and lecture wise schedule :**

**Etiopathogenesis and pharmacotherapy of diseases associated with following systems / diseases –**

**Title of the topic**

1. **Infectious disease:** Guidelines for the rational use of antibiotics and surgical Prophylaxis, Tuberculosis, Meningitis, Respiratory tract infections, Gastroenteritis, Endocarditis, Septicemia, Urinary tract infections, Protozoal infection- Malaria, HIV & Opportunistic infections, Fungal infections, Viral infections, Gonorrhoea and Syphilis
2. **Musculoskeletal disorders**  
Rheumatoid arthritis, Osteoarthritis, Gout, Spondylitis, Systemic lupus erythematosus.
3. **Renal system**  
Acute Renal Failure, Chronic Renal Failure, Renal Dialysis, Drug induced renal disorders;

- 4 **Oncology:** Basic principles of Cancer therapy, General introduction to cancer chemotherapy, chemotherapeutic agents, Chemotherapy of breast cancer, leukemia. Management of chemotherapy nausea and emesis
- 5 **Dermatology:** Psoriasis, Scabies, Eczema, Impetigo

### 3.3 PHARMACOTHERAPEUTICS – II (PRACTICAL)

**Practical : 3 Hrs./Week**

**Practicals :**

Hospital postings in various departments designed to complement the lectures by providing practical clinical discussion; attending ward rounds; follow up the progress and changes made in drug therapy in allotted patients; case presentation upon discharge. Students are required to maintain a record of cases presented and the same should be submitted at the end of the course for evaluation.

The student shall be trained to understand the principle and practice involved in selection of drug therapy including clinical discussion.

A minimum of 20 cases should be presented and recorded covering most common diseases.

**Assignments :**

Students are required to submit written assignments on the topics given to them. Topics allotted should cover recent developments in drug therapy of various diseases. A minimum of THREE assignments [1500 – 2000 words] should be submitted for evaluation.

**Format of the assignment :**

1. Minimum & Maximum number of pages.
2. Reference(s) shall be included at the end.
3. Assignment can be a combined presentation at the end of the academic year.
4. It shall be computer draft copy.
5. Name and signature of the student.
6. Time allocated for presentation may be 8+2 Min.

**Scheme of Practical Examination :**

	<b>Sessionals</b>	<b>Annual</b>
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
<b>Max Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>03hrs</b>	<b>04hrs</b>

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

### 3.4 PHARMACEUTICAL JURISPRUDENCE (THEORY)

**Theory : 2 Hrs. /Week**

1. **Scope of the Subject:** (4-6 lines): This course exposes the student to several important legislations related to the profession of pharmacy in India. The Drugs and Cosmetics Act, along with its amendments are the core of this course. Other acts, which are covered, include the Pharmacy Act, dangerous drugs, medicinal and toilet preparation Act etc. Besides this the new drug policy, professional ethics, DPCO, patent and design Act will be discussed.
2. **Objectives of the Subject:** Upon completion of the subject student shall be able to (Know, do, and appreciate) –
  - a. practice the Professional ethics;
  - b. understand the various concepts of the pharmaceutical legislation in India;
  - c. know the various parameters in the Drug and Cosmetic Act and rules;
  - d. know the Drug policy, DPCO, Patent and design act;
  - e. understand the labeling requirements and packaging guidelines for drugs and cosmetics;
  - f. be able to understand the concepts of Dangerous Drugs Act, Pharmacy Act and Excise duties Act; and
  - g. other laws as prescribed by the Pharmacy Council of India from time to time including International Laws.

**Text books (Theory)**

Mithal , B M. Textbook of Forensic Pharmacy. Calcutta :National; 1988.

**Reference books (Theory)**

- a. Singh, KK, editor. Beotra's the Laws of Drugs, Medicines & cosmetics. Allahabad: Law Book House; 1984.
- b. Jain, NK. A Textbook of forensic pharmacy. Delhi: Vallabh prakashan ; 1995.
- c. Reports of the Pharmaceutical enquiry Committee
- d. I.D.M.A., Mumbai. DPCO 1995
- e. Various reports of Amendments.
- f. Deshapande, S.W. The drugs and magic remedies act 1954 and rules 1955. Mumbai: Susmit Publications; 1998.
- g. Eastern Book Company .The narcotic and psychotropic substances act 1985, Lucknow: Eastern; 1987.

**3. Detailed syllabus and lecture wise schedule:**

**Title of the topic**

1. **Pharmaceutical Legislations** – A brief review.
2. Principle and Significance of professional ethics. Critical study of the code of pharmaceutical ethics drafted by PCI.
3. **Drugs and Cosmetics Act, 1940, and its rules 1945.**  
Objectives, Legal definition, Study of Schedule's with reference to Schedule B, C&C1, D, E1, F&F1, F2, F3, FF, G, H, J, K, M, N, P, R, V, W, X, Y.  
Sales, Import, labeling and packaging of Drugs And Cosmetics  
Provisions Relating to Indigenous Systems.  
Constitution and Functions of DTAB, DCC, CDL.  
Qualification and duties –Govt. analyst and Drugs Inspector.

4. **Pharmacy Act –1948.**  
Objectives Legal Definitions, General Study, Constitution and Functions of State & Central Council, Registration & Procedure, ER.
5. **Medicinal and Toilet Preparation Act –1955.**  
Objectives, Legal Definitions, Licensing, Bonded and Non Bonded Laboratory, Ware Housing, Manufacture of Ayurvedic, Homeopathic, Patent & Proprietary Preparations.
6. **Narcotic Drugs and Psychotropic substances Act-1985 and Rules.** Objectives, Legal Definitions, General Study, Constitution and Functions of narcotic & Psychotropic Consultative Committee, National Fund for Controlling the Drug Abuse, Prohibition, Control and regulations, Schedules to the Act.
7. **Study of Salient Features of Drugs and magic remedies Act and its rules.**
8. **Study of essential Commodities Act Relevant to drugs price control Order.**
9. **Drug Price control Order & National Drug Policy (Current).**
10. **Prevention Of Cruelty to animals Act-1960.**
11. **Patents & design Act-1970.**
12. **Brief study of prescription and Non-prescription Products.**

#### 4. Assignments:

##### **Format of the assignment**

1. Minimum & Maximum number of pages
2. It shall be a computer draft copy
3. Reference(s) shall be included at the end.
4. Name and signature of the student
5. Assignment can be a combined presentation at the end of the academic year.
6. Time allocated for presentation may be 8+2 Min

##### **Case studies relating to**

1. Drugs and Cosmetics Act and rules along with its amendments, Dangerous Drugs Act, Medicinal and Toilet preparation Act, New Drug Policy, Professional Ethics, Drugs (Price control) Order, Patent and Design Act.
2. Various prescription and non-prescription products.
3. Medical and surgical accessories.
4. Diagnostic aids and appliances available in the market.



### 3.5 MEDICINAL CHEMISTRY (THEORY)

#### Theory : 3 Hrs. /Week

1. Modern concept of rational drug design: A brief introduction to Quantitative Structure Activity Relationship (QSAR), prodrug, combinatorial chemistry and computer aided drug design (CADD) and concept of antisense molecules.

A study of the development of the following classes of drugs including SAR, mechanism of action, synthesis of important compounds, chemical nomenclature, brand names of important marketed products and their side effects.

2. Anti-infective agents
  - a) Local anti-infective agents
  - b) Preservatives
  - c) Antifungal agents
  - d) Urinary tract anti-infectives
  - e) Antitubercular agents
  - f) Antiviral agents and Anti AIDS agents
  - g) Antiprotozoal agents
  - h) Anthelmintics
  - i) Antiscabies and Antipedicular agents
3. Sulphonamides and sulphones
4. Antimalarials
5. Antibiotics
6. Antineoplastic agents
7. Cardiovascular agents
  - a) Antihypertensive agents
  - b) Antianginal agents and vasodilators
  - c) Antiarrhythmic agents
  - d) Antihyperlipidemic agents
  - e) Coagulants and Anticoagulants
  - f) Endocrine
8. Hypoglycemic agents
9. Thyroid and Antithyroid agents
10. Diuretics
11. Diagnostic agents
12. Steroidal Hormones and Adrenocorticoids

### 3.5 MEDICINAL CHEMISTRY (PRACTICAL)

**Practical : 3 Hrs./Week**

1. Assays of important drugs from the course content.
2. Preparation of medicinally important compounds or intermediates required for synthesis of drugs.
3. Monograph analysis of important drugs.
4. Determination of partition coefficients, dissociation constants and molar refractivity of compounds for QSAR analysis.

**Reference Books:**

- a. Wilson and Gisvold's Text book of Organic, Medicinal and Pharmaceutical Chemistry, Lippincott-Raven Publishers-New York, Philadelphia.
- b. William.O.Foye, Principles of Medicinal Chemistry, B.I. Waverly Pvt. Ltd., New Delhi.
- c. Burgers, Medicinal Chemistry, M.E., Welly Med.Chemistry M.E. Walffed Johnwilley and Sons, Wiley-interscience Publication, New York, Toranto.
- d. A Text Book of Medicinal Chemistry Vol. I and II by Surendra N. Pandeya, S.G. Publisher, 6, Dildayal Nagar, Varanasi -10.
- e. Indian Pharmacopoeia 1985 and 1996. The Controller of Publications, Civil Lines, Delhi - 54.
- f. Current Index of Medical Specialities (CIMS) and MIMS India, MIMS, A.E. Morgan Publications (I) Pvt. Ltd, New Delhi-19.
- g. Organic Drug Synthesis-Ledniser Mitzsher Vol. I and II.
- h. Pharmaceutical Chemistry drug Synthesis Vol. I and II by H. J. Roth and A. Kleemann.
- i. The Science and Practice of Pharmacy Vol. 1 and 2, Remington, MACK Publishing Company, Easton, Pennsylvania.

### 3.6 PHARMACEUTICAL FORMULATIONS (THEORY)

**Theory : 2 Hrs. /Week**

1. **Scope of the Subject:** Scope and objectives of the course: Subject deals with the formulation and evaluation of various pharmaceutical dosage forms.
2. **Objectives of the Subject:** Upon completion of the subject student shall be able to (Know, do, appreciate) –
  - a. understand the principle involved in formulation of various pharmaceutical dosage forms;
  - b. prepare various pharmaceutical formulation;
  - c. perform evaluation of pharmaceutical dosage forms; and
  - d. understand and appreciate the concept of bioavailability and bioequivalence, their role in clinical situations.

**Text books (Theory)**

- a. Pharmaceutical dosage forms, Vol, I,II and III by lachman
- b. Rowlings Text book of Pharmaceutics
- c. Tutorial Pharmacy – Cooper & Gun

**Reference books (Theory)**

- a. Remington's Pharmaceutical Sciences
- b. USP/BP/IP

**3. Detailed syllabus and lecture wise schedule:**

**Title of the topic**

1. Pharmaceutical dosage form- concept and classification
2. **Tablets:** Formulation of different types of tablets, tablet excipients, granulation techniques quality control and evaluation of tablets. Tablet coating, Type of coating, quality control tests for coated tablet.
3. **Capsules;** Production and filling of hard gelatin capsules, Raw material for shell, finishing, quality control tests for capsules. Production and filling of soft gelatin capsules, quality control tests for soft gelatin capsules.
4. **Liquid orals:** Formulation and evaluation of suspensions, emulsions and solutions. Stability of these preparations
5. **Parenterals** Introduction Containers used for Parenterals (including official tests) Formulation of large and small volume Parenterals Sterilization
6. **Ophthalmic preparations (Semi – Solids):** Introduction and classification Factors affecting absorption and anatomy of skin Packaging storage and labeling, Ointments Types of Ointment Base Preparation of ointment, Jellies Types of jellies Formulation of jellies Suppositories, Method of preparation, Types Packaging
7. Definition and concept of **Controlled and novel Drug delivery systems** with available examples, viz. parenteral, trans dermal, buccal, rectal, nasal, implants, ocular

### 3.6 PHARMACEUTICAL FORMULATIONS (PRACTICAL)

**Practical : 3 Hrs./Week**

**List of Experiments :**

1. **Manufacture of Tablets**
  - a. Ordinary compressed tablet-wet granulation
  - b. Tablets prepared by direct compression.
  - c. Soluble tablet.
  - d. Chewable tablet.
2. **Formulation and filling of hard gelatin capsules**
3. **Manufacture of parenterals**
  - a. Ascorbic acid injection
  - b. Calcium gluconate injection
  - c. Sodium chloride infusion.
  - d. Dextrose and Sodium chloride injection/ infusion.
4. **Evaluation of Pharmaceutical formulations (QC tests)**
  - a. Tablets
  - b. Capsules
  - c. Injections
5. **Formulation of two liquid oral preparations and evaluation by assay**
  - a. Solution: Paracetamol Syrup
  - b. Antacid suspensions- Aluminum hydroxide gel
6. **Formulation of semisolids and evaluation by assay**
  - a. Salicylic acid and benzoic acid ointment
  - b. Gel formulation Diclofenac gel
7. **Cosmetic preparations**
  - a. Lipsticks
  - b. Cold cream and vanishing cream
  - c. Clear liquid shampoo
  - d. Tooth paste and tooth powders.
8. **Tablet coating (demonstration)**

**Scheme of Practical Examination :**

	<b>Sessionals</b>	<b>Annual</b>
Synopsis	05	15
Major Experiment	10	25
Minor Experiment	03	15
Viva	02	15
<b>Max Marks</b>	<b>20</b>	<b>70</b>
<b>Duration</b>	<b>03hrs</b>	<b>04hrs</b>

Note : Total sessional marks is 30 (20 for practical sessional plus 10 marks for regularity, promptness, viva-voce and record maintenance).

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**BP 505 T. PHARMACEUTICAL JURISPRUDENCE (Theory) 45 Hours**

**Scope:** This course is designed to impart basic knowledge on important legislations related to the profession of pharmacy in India.

**Objectives:** Upon completion of the course, the student shall be able to understand:

1. The Pharmaceutical legislations and their implications in the development and marketing of pharmaceuticals.
2. Various Indian pharmaceutical Acts and Laws
3. The regulatory authorities and agencies governing the manufacture and sale of pharmaceuticals
4. The code of ethics during the pharmaceutical practice

**Course Content:**

**UNIT-I 10 Hours**

**Drugs and Cosmetics Act, 1940 and its rules 1945:**  
 Objectives, Definitions, Legal definitions of schedules to the Act and Rules

Import of drugs – Classes of drugs and cosmetics prohibited from import, Import under license or permit- Offences and penalties.

Manufacture of drugs – Prohibition of manufacture and sale of certain drugs.

Conditions for grant of license and conditions of license for manufacture of drugs, Manufacture of drugs for test, examination and analysis, manufacture of new drug, loan license and repacking license.

**UNIT-II 10 Hours**

**Drugs and Cosmetics Act, 1940 and its rules 1945.**  
 Detailed study of Schedule G, H, M, N, P, T, U, V, X, Y, Part XII B, Sch F & DMR (OA)

Sale of Drugs – Wholesale, Retail sale and Restricted license. Offences and penalties

Labeling & Packing of drugs- General labeling requirements and specimen labels for drugs and cosmetics, List of permitted colors. Offences and penalties.

Administration of the Act and Rules – Drugs Technical Advisory Board, Central drugs

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4. The code of ethics during the pharmaceutical practice

**Course Content:**

**UNIT-I 10 Hours**

**Drugs and Cosmetics Act, 1940 and its rules 1945:**  
 Objectives, Definitions, Legal definitions of schedules to the Act and Rules

Import of drugs – Classes of drugs and cosmetics prohibited from import, Import under license or permit- Offences and penalties.

Manufacture of drugs – Prohibition of manufacture and sale of certain drugs.

Conditions for grant of license and conditions of license for manufacture of drugs, Manufacture of drugs for test, examination and analysis, manufacture of new drug, loan license and repacking license.

**UNIT-II 10 Hours**

**Drugs and Cosmetics Act, 1940 and its rules 1945.**  
 Detailed study of Schedule G, H, M, N, P, T, U, V, X, Y, Part XII B, Sch F & DMR (OA)

Sale of Drugs – Wholesale, Retail sale and Restricted license. Offences and penalties

Labeling & Packing of drugs- General labeling requirements and specimen labels for drugs and cosmetics, List of permitted colors. Offences and penalties.

Administration of the Act and Rules – Drugs Technical Advisory Board, Central drugs Laboratory, Drugs Consultative Committee, Government drug analysts, Licensing authorities, controlling authorities, Drugs Inspectors

**UNIT-III 10 Hours**

- **Pharmacy Act –1948:** Objectives, Definitions, Pharmacy Council of India: its constitution and functions, Education Regulations, State and Joint state pharmacy councils: constitution and functions, Registration of Pharmacists, Offences and

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Psychotropic Consultative Committee, National Fund for Controlling the Drug Abuse, Prohibition, Control and Regulation, opium poppy cultivation and production of poppy straw, manufacture, sale and export of opium, Offences and Penalties

**UNIT-IV 08 Hours**

- **Study of Salient Features of Drugs and Magic Remedies Act and its rules:** Objectives, Definitions, Prohibition of certain advertisements, Classes of Exempted advertisements, Offences and Penalties
- **Prevention of Cruelty to animals Act-1960:** Objectives, Definitions, Institutional Animal Ethics Committee, CPCSEA guidelines for Breeding and Stocking of Animals, Performance of Experiments, Transfer and acquisition of animals for experiment, Records, Power to suspend or revoke registration, Offences and Penalties
- **National Pharmaceutical Pricing Authority:** Drugs Price Control Order (DPCO)-2013, Objectives, Definitions, Sale prices of bulk drugs, Retail price of formulations, Retail price and ceiling price of scheduled formulations, National List of Essential Medicines (NLEM)

**UNIT-V 07 Hours**

- **Pharmaceutical Legislations** – A brief review, Introduction, Study of drugs enquiry committee, Health survey and development committee, Hathi committee and Mudaliar committee
- **Code of Pharmaceutical ethics** Definition, Pharmacist in relation to his job, trade, medical profession and his profession, Pharmacist's oath
- **Medical Termination of Pregnancy Act**
- **Right to Information Act**
- **Introduction to Intellectual Property Rights (IPR)**

**Recommended books: (Latest Edition)**

1. Forensic Pharmacy by B. Suresh

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**BP6061 PHARMACEUTICAL QUALITY ASSURANCE (Theory) 45 Hours**

**Scope:** This course deals with the various aspects of quality control and quality assurance aspects of pharmaceutical industries. It deals with the important aspects like cGMP, QC tests, documentation, quality certifications and regulatory affairs.

**Objectives:** Upon completion of the course student shall be able to:

- understand the cGMP aspects in a pharmaceutical industry
- appreciate the importance of documentation
- understand the scope of quality certifications applicable to pharmaceutical industries
- understand the responsibilities of QA & QC departments

**Course contents:**

**UNIT – I 10 Hours**  
**Quality Assurance and Quality Management concepts:** Definition and concept of Quality control, Quality assurance and GMP  
**Total Quality Management (TQM):** Definition, elements, philosophies  
**ICH Guidelines:** purpose, participants, process of harmonization, Brief overview of QSEM, with special emphasis on Q-series guidelines, ICH stability testing guidelines  
**Quality by design (QbD):** Definition, overview, elements of QbD program, tools  
**ISO 9000 & ISO14000:** Overview, Benefits, Elements, steps for registration  
**NABL accreditation :** Principles and procedure]

**UNIT - II 10 Hours**  
**Organization and personnel:** Personnel responsibilities, training, hygiene and personal records.  
**Premises:** Design, construction and plant layout, maintenance, sanitation, environmental control, utilities and maintenance of sterile areas, control of contamination.  
**Equipments and raw materials:** Equipment selection, purchase specifications, maintenance, purchase specifications and maintenance of stores for raw materials.

**UNIT – III 10 Hours**  
**Quality Control:** Quality control test for containers, rubber closures and secondary packing

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**Organization and personnel:** Personnel responsibilities, training, hygiene and personal records.  
**Premises:** Design, construction and plant layout, maintenance, sanitation, environmental control, utilities and maintenance of sterile areas, control of contamination.  
**Equipments and raw materials:** Equipment selection, purchase specifications, maintenance, purchase specifications and maintenance of stores for raw materials.

**UNIT – III 10 Hours**  
**Quality Control:** Quality control test for containers, rubber closures and secondary packing

**UNIT – IV 08 Hours**  
**Complaints:** Complaints and evaluation of complaints, Handling of return good, recalling and waste disposal.  
**Document maintenance in pharmaceutical industry:** Batch Formula Record, Master Formula Record, SOP, Quality audit, Quality Review and Quality documentation, Reports and documents, distribution records.

**UNIT – V 07 Hours**  
**Calibration and Validation:** Introduction, definition and general principles of calibration, qualification and validation, importance and scope of validation, types of validation, validation master plan. Calibration of pH meter, Qualification of UV-Visible spectrophotometer, General principles of Analytical method Validation.  
**Warehousing:** Good warehousing practice, materials management

**Recommended Books: (Latest Edition)**

- Quality Assurance Guide by organization of Pharmaceutical Products of India.

### Unit III

10 Hours

Study of morphology, classification, reproduction/replication and cultivation of Fungi and Viruses.

Classification and mode of action of disinfectants

Factors influencing disinfection, antiseptics and their evaluation. For bacteriostatic and bactericidal actions

Evaluation of bactericidal & Bacteriostatic.

Sterility testing of products (solids, liquids, ophthalmic and other sterile products) according to IP, BP and USP.

### Unit IV

08 Hours

Designing of aseptic area, laminar flow equipments; study of different sources of contamination in an aseptic area and methods of prevention, clean area classification.

Principles and methods of different microbiological assay. Methods for standardization of antibiotics, vitamins and amino acids.

Assessment of a new antibiotic.

### Unit V

07Hours

Types of spoilage, factors affecting the microbial spoilage of pharmaceutical products, sources and types of microbial contaminants, assessment of microbial contamination and spoilage.

Preservation of pharmaceutical products using antimicrobial agents, evaluation of microbial stability of formulations.

Growth of animal cells in culture, general procedure for cell culture, Primary, established and transformed cell cultures.

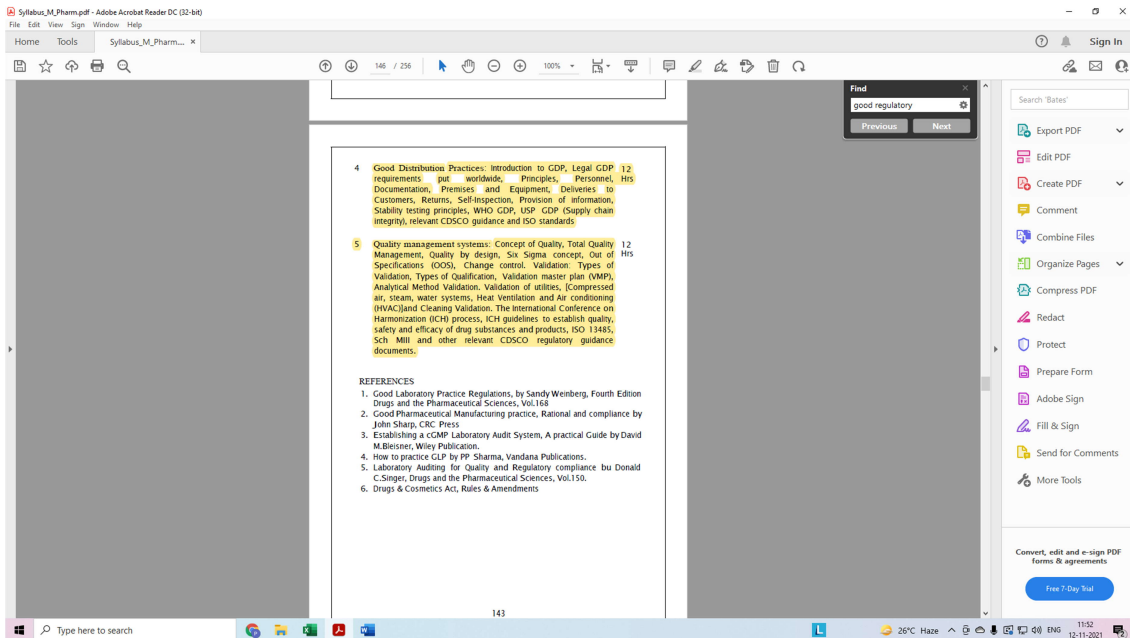
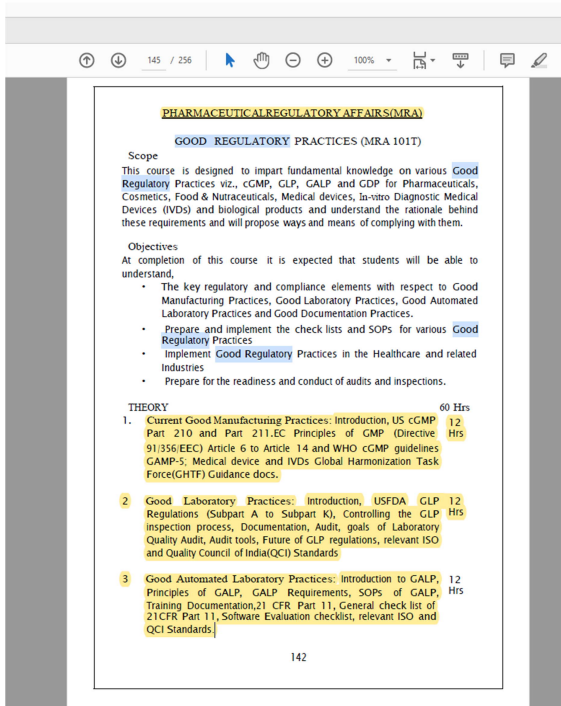
Application of cell cultures in pharmaceutical industry and research.



1. Introduction and study of different equipments and processing, e.g., B.O.D. incubator, laminar flow, aseptic hood, autoclave, hot air sterilizer, deep freezer, refrigerator, microscopes used in experimental microbiology.
2. Sterilization of glassware, preparation and sterilization of media.
3. Sub culturing of bacteria and fungus. Nutrient stabs and slants preparations.
4. Staining methods- Simple, Grams staining and acid fast staining (Demonstration with practical).
5. Isolation of pure culture of micro-organisms by multiple streak plate technique and other techniques.
6. Microbiological assay of antibiotics by cup plate method and other methods
7. Motility determination by Hanging drop method.
8. Sterility testing of pharmaceuticals.
9. Bacteriological analysis of water
10. Biochemical test.

#### **Recommended Books (Latest edition)**

1. W.B. Hugo and A.D. Russel: Pharmaceutical Microbiology, Blackwell Scientific publications, Oxford London.
2. Prescott and Dunn., Industrial Microbiology, 4<sup>th</sup> edition, CBS Publishers & Distributors, Delhi.
3. Pelczar, Chan Kreig, Microbiology, Tata McGraw Hill edn.
4. Malcolm Harris, Balliere Tindall and Cox: Pharmaceutical Microbiology.
5. Rose: Industrial Microbiology.
6. Probisher, Hinsdill et al: Fundamentals of Microbiology, 9th ed. Japan
7. Cooper and Gunn's: Tutorial Pharmacy, CBS Publisher and Distribution.
8. Pepler: Microbial Technology.
9. I.P., B.P., U.S.P.- latest editions.
10. Ananthnarayan : Text Book of Microbiology, Orient-Longman, Chennai
11. Edward: Fundamentals of Microbiology.
12. N.K.Jain: Pharmaceutical Microbiology, Vallabh Prakashan, Delhi
13. Bergeys manual of systematic bacteriology, Williams and Wilkins- A Waverly company





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**DOCUMENTATION AND REGULATORY WRITING**  
(DRA 1027)

**Scope**  
This course is designed to impart fundamental knowledge on documentation and general principles involved in regulatory writing and submission to agencies.

**Objectives**  
Upon completion of the course the student shall be able to,

- Know the various documents pertaining to drugs in pharmaceutical industry
- Understand the basics of regulatory compilation
- Create and assemble the regulation submission as per the requirements of agencies,
- Follow up the submissions and post approval document requirements

**THEORY** 40 Hrs

- Documentation in pharmaceutical industry** 12 Hrs  
Exploratory Product Development Brief (EPDB) for Drug substance and Drug product, Product Development Plan (PDP), Product Development Report (PDR), Master Formula Record, Batch Manufacturing Record and its calculations, Batch Reconciliation, Batch Packaging Records, Print pack specifications, Distribution records, Certificate of Analysis (CoA), Site Master File and Drug Master Files (DMF).
- Dossier preparation and submission** 12 Hrs  
Introduction and overview of dossiers, contents and organization of dossier, binders and sections, compilation and review of dossier. Paper submissions, overview and modes of CTD, electronic CTD submissions, Electronic submission. Planning electronic submission, requirements for submission, regulatory bindings and requirements, Tool and Technologies, electronic dossier submission process and validating the submission, Electronic Submission Gateway (ESG), Non eCTD electronic submissions (Nees), Asian CTD formats (ACTD) submission, Organizing, process and validation of submission, Submission in Sugam system of CDSCO

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- Regulations governing Clinical Trials** 12 Hrs  
India: Clinical Research regulations in India - Schedule Y & Medical Device Guidance  
USA: Regulations to conduct drug studies in USA (FDA)  
  - NDA 505(b)(1) of the FD&C Act (Application for approval of a new drug)
  - NDA 505(b)(2) of the FD&C Act (Application for approval of a new drug that relies, at least in part, on data not developed by the applicant)
  - ANDA 505(i) of the FD&C Act (Application for approval of a generic drug product)
  - FDA Guidance for Industry - Acceptance of Foreign Clinical Studies
  - FDA Clinical Trials Guidance Document: Good Clinical Practice
 EU: Clinical Research regulations in European Union (EMA)
- Clinical Research Related Guidelines** 12 Hrs  
  - Good Clinical Practice Guidelines (ICH GCP E6)
  - Indian GCP Guidelines
  - ICMR Ethical Guidelines for Biomedical Research
  - CDSCO guidelines
  - CHTR study group 5 guidance documents
  - Regulatory Guidance on Efficacy and Safety ICH Guidance's
  - E4 - Dose Response information to support Drug Registration
  - E7 - Studies in support of General Population Geriatrics
  - E8 - General Considerations of Clinical Trials
  - E10 - Choice of Control Groups and Related Issues in Clinical Trials
  - E 11 - Clinical Investigation of Medicinal Products in the Pediatric Population
  - General biostatistics principle applied in clinical research
- USA & EU Guidance** 12 Hrs  
 USA: FDA Guidance  
 CFR 312 Part 50: Protection of Human Subjects  
 CFR 312 Part 54: Financial Disclosure by Clinical Investigators

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- Know different Acts and guidelines that regulate Drugs & Cosmetics, Medical Devices, Biologicals & Herbs, and Food & Nutraceuticals industry in India.
- Understand the approval process and regulatory requirements for Drugs & Cosmetics, Medical Devices, Biologicals & Herbs, and Food & Nutraceuticals.

**THEORY** 09 Hrs

- Biologicals & Herbs, and Food & Nutraceuticals Acts and Rules (with latest amendments): 12 Hrs
  - Drugs and Cosmetics Act 1940 and Rules 1945: DPCO and MPPA
  - Other relevant provisions (rules, schedules and guidelines for approval of Drugs & Cosmetics, Medical Devices, Biologicals & Herbs and Food & Nutraceuticals in India)

Other relevant Acts: Narcotics Drugs and Psychotropic Substances Act, Medical and Toilet Preparations Excise Duties Act, 1955; Pharmacy Act, 1948; Drugs and Magic Remedies (Objectionable Advertisements) Act, 1955; Prevention of Cruelty to Animals Act.
- Regulatory requirements and approval procedures for Drugs & Cosmetics, Medical Devices, Biologicals & Herbs, and Food & Nutraceuticals: 12 Hrs
 

CDSCO (Central Drug Standard Control Organization) and State Licensing Authority: Organization, Responsibilities

  - Rules, regulations, guidelines and standards for regulatory filing of Drugs & Cosmetics, Medical Devices, Biologicals & Herbs, and Food & Nutraceuticals
  - Format and contents of Regulatory dossier filing

Clinical trial investigations:
- Indian Pharmacopoeial Standards, BIS standards and ISO and other relevant standards: 12 Hrs
- Bioavailability and Bioequivalence data (BA & BE), BCS Classification of Drugs, Regulatory Requirements for Hrs: 12

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**REGULATORY AFFAIRS PRACTICAL - I**  
(MBA 105P)

- Case studies (4 Nos.) of each of Good Pharmaceutical Practices.
- Documentation for in process and finished products Quality control tests for Solid, liquid, Semisolid and Sterile preparations.
- Preparation of SOPs, Analytical reports (Stability and validation)
- Protocol preparation for documentation of various types of records (BMR, MFR, DR)
- Labeling comparison between brand & generics.
- Preparation of clinical trial protocol for registering trial in India
- Registration for conducting BA, BE studies in India
- Import of drugs for research and developmental activities
- Preparation of regulatory dossier as per Indian CTD format and submission in SUGAM
- Registration for different Intellectual Property Rights in India
- GMP Audit Requirements as per CDSCO
- Preparation and documentation for Indian Patent application.
- Preparation of checklist for registration of ND as per ICH CTD format.
- Preparation of checklist for registration of NDA as per ICH CTD format.
- Preparation of checklist for registration of ANDA as per ICH CTD format.
- Case studies on response with scientific rationale to USFDA Warning Letter
- Preparation of submission checklist of IMPD for EU submission.
- Comparison study of marketing authorization procedures in EU.
- Comparative study of DMF system in US, EU and Japan
- Preparation of regulatory submission using eCTD software
- Preparation of Clinical Trial Application (CTA) for US submission
- Preparation of Clinical Trial Application (CTA) for EU submission
- Comparison of Clinical Trial Application requirements of US, EU and Japan of a dosage form.
- Regulatory requirements checklist for conducting clinical trials in India.
- Regulatory requirements checklist for conducting clinical trials in Europe.
- Regulatory requirements checklist for conducting clinical trials in USA

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**SEMESTER II**  
**REGULATORY ASPECTS OF DRUGS & COSMETICS**  
(MRA 2017)

**Scope**  
This course is designed to impart the fundamental knowledge on the drug development process, regulatory requirements for approval of new drugs, drug products and cosmetics in regulated and semi-regulated countries; prepares the students to learn in detail on the regulatory requirements, documentation requirements, and registration procedures for marketing the drug products and cosmetics in regulated and semi-regulated countries.

**Objectives**  
Upon completion of the course, the student shall be able to know

- process of drug discovery and development and generic product development
- regulatory approval process and registration procedures for API and drug products in US, EU
- Cosmetics regulations in regulated and semi-regulated countries
- A comparative study of India with other global regulated markets

**Theory** 60 Hrs

1. **USA & CANADA:** Organization structure and functions of FDA, 12 Hrs  
Federal register and Code of Federal Regulations (CFR), History and evolution of United States Federal, Food, Drug and Cosmetic Act (FDCA), Hatch Waxman act and Orange book, Purple book, Drug Master Files (DMF) system in US, Regulatory Approval Process for Investigational New Drug (IND), New Drug Application (NDA), Abbreviated New Drug Application (ANDA), Supplemental New Drug Application (sNDA), Regulatory requirements for Orphan drugs and Combination Products, Changes to an approved NDA, ANDA, Regulatory considerations for manufacturing, packaging and labeling of pharmaceuticals in USA, Legislation and regulations for import, manufacture, distribution and sale of cosmetics in USA and Canada.
2. **European Union & Australia:** Organization and structure of EMA & EDCM, General guidelines, Active Substance Master Files (ASMF) system in EU, Content and approval process of IMPD, Marketing Authorization procedures in EU (Centralized procedure, 12 Hrs

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**REGULATORY ASPECTS OF HERBAL AND BIOLOGICALS**  
(MRA 2022)

**Scope**  
This course is designed to impart fundamental knowledge on Regulatory Requirements, Licensing and Registration, Regulation on Labelling of Biologics in India, USA and Europe. It prepares the students to learn in detail on Regulatory Requirements for biologics, Vaccines and Blood Products

**Objectives**  
Upon the completion of the course the student shall be able to:

- Know the regulatory Requirements for Biologics and Vaccines
- Understand the regulation for newly developed biologics and biosimilars
- Know the pre-clinical and clinical development considerations of biologics
- Understand the Regulatory Requirements of Blood and/or its Components including Blood Products and label requirements

**Theory** 60 Hrs

1. **India:** Introduction, Applicable Regulations and Guidelines, 12 Hrs  
Principles for Development of Similar Biologics, Data Requirements for Preclinical Studies, Data Requirements for Clinical Trial Application, Data Requirements for Market Authorization Application, Pre-Market Data for Similar Biologics, Pharmacovigilance, GMP and GDP.
2. **USA:** Introduction to biologics, biologics, biological and biosimilars, different biological products, difference between generic drug and biosimilars, laws, regulations and guidance on biologics biosimilars, development and approval of biologics and biosimilars (IND, PMA, BLA, NDA, 510k), pre-clinical and clinical development considerations, advertising, labelling and packing of biologics, 12 Hrs
3. **European Union:** Introduction to Biologics; directives, scientific guidelines and guidance related to biologics in EU; comparability biosimilarity assessment, Plasma master file, TSE/ BSE evaluation, development and regulatory approval of biologics (investigational medicinal products and biosimilars), pre-clinical 12 Hrs

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### REGULATORY ASPECTS OF MEDICAL DEVICES (MRA 203T)

**Scope**  
This course is designed to impart the fundamental knowledge on the medical devices and in vivo diagnostics, basis of classification and product life cycle of medical devices, regulatory requirements for approval of medical devices in regulated countries like US, EU and Asian countries along with WHO regulations. It prepares the students to learn in detail on the harmonization initiatives, quality and ethical considerations, regulatory and documentation requirements for marketing medical devices and IVDs in regulated countries.

**Objectives**  
Upon completion of the course, the student shall be able to know

- basics of medical devices and IVDs, process of development, ethical and quality considerations
- harmonization initiatives for approval and marketing of medical devices and IVDs
- regulatory approval process for medical devices and IVDs in India, US, Canada, EU, Japan and ASEAN
- clinical evaluation and investigation of medical devices and IVDs

**Theory** 60 Hrs

1. **Medical Devices: Introduction, Definition, Risk based classification and Essential Principles of Medical Devices and IVDs. Differentiating medical devices IVDs and Combination Products from that of pharmaceuticals, History of Medical Device Regulation, Product Lifecycle of Medical Devices and Classification of Medical Devices.** 12 Hrs  
INDRP-GHTF: Introduction, Organizational Structure, Purpose and Functions, Regulatory Guidelines, Working Groups, Summary Technical Document (STED), Global Medical Device Nomenclature (GMDN).
2. **Ethics: Clinical Investigation of Medical Devices, Clinical Investigation Plan for Medical Devices, Good Clinical Practice for Clinical Investigation of medical devices (ISO 14155:2011) Quality Quality Systems Regulations of Medical Devices: ISO 13485, Quality Risk Management of Medical Devices: ISO 14971, Validation and Verification of Medical device, Adverse Event Reporting of Medical Device.** 12 Hrs

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### REGULATORY ASPECTS OF FOOD & NUTRACEUTICALS (MRA 204T)

**Scope**  
This course is designed to impart the fundamental knowledge on Regulatory Requirements, Registration and Labeling Regulations of Nutraceuticals in India, USA and Europe. It prepares the students to learn in detail on Regulatory Aspects for nutraceuticals and food supplements.

**Objectives**  
Upon completion of the course, the student shall be able to

- Know the regulatory Requirements for nutraceuticals
- Understand the regulation for registration and labeling of nutraceuticals and food supplements in India, USA and Europe.

**Theory** 60 Hrs

1. **Nutraceuticals: Introduction, History of Food and Nutraceutical Regulations, Meaning of Nutraceuticals, Dietary Supplements, Functional Foods, Medical Foods, Scope and Opportunities in Nutraceutical Market.** 12 Hrs
2. **Global Aspects: WHO guidelines on nutrition, NSF International: Its Role in the Dietary Supplements and Nutraceuticals Industries in India, NSF Certification, NSF Standards for Food And Dietary Supplements, Good Manufacturing Practices for Nutraceuticals.** 12 Hrs
3. **India: Food Safety and Standards Act, Food Safety and Standards Authority of India: Organization and Functions, Regulators for import, manufacture and sale of nutraceutical products in India, Recommended Dietary Allowances (RDA) in India.** 12 Hrs
4. **USA: US FDA Food Safety Modernization Act, Dietary Supplement Health and Education Act, U.S. regulations for manufacture and sale of nutraceuticals and dietary supplements, Labeling Requirements and Label Claims for Dietary Supplements, Recommended Dietary Allowances (RDA) in the US.** 12 Hrs

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REGULATORY AFFAIRS PRACTICAL - II  
(MRA 205P)

1. Case studies on
2. Change Management; Change control; Deviations
3. Corrective & Preventive Actions (CAPA)
4. Documentation of raw materials analysis as per official monographs
5. Preparation of audit checklist for various agencies
6. Preparation of submission to FDA using eCTD software
7. Preparation of submission to EMA using eCTD software
8. Preparation of submission to MHRA using eCTD software
9. Preparation of Biologics License Applications (BLA)
10. Preparation of documents required for Vaccine Product Approval
11. Comparison of clinical trial application requirements of US, EU and India of Biologics
12. Preparation of Checklist for Registration of Blood and Blood Products
13. Registration requirement comparison study in 5 emerging markets (WHO) and preparing check list for market authorization
14. Registration requirement comparison study in emerging markets (BRICS) and preparing check list for market authorization
15. Registration requirement comparison study in emerging markets (China and South Korea) and preparing check list for market authorization
16. Registration requirement comparison study in emerging markets (ASEAN) and preparing check list for market authorization
17. Registration requirement comparison study in emerging markets (GCC) and preparing check list for market authorization
18. Checklists for 510k and PMA for US market
19. Checklist for CE marking for various classes of devices for EU
20. STED Application for Class III Devices
21. Audit Checklists for Medical Device Facility
22. Clinical Investigation Plan for Medical Devices

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## Pharmacognosy and Phytochemistry I Theory

### BP 405 T.PHARMACOGNOSY AND PHYTOCHEMISTRY I (Theory)

45 Hours

**Scope:** The subject involves the fundamentals of Pharmacognosy like scope, classification of crude drugs, their identification and evaluation, phytochemicals present in them and their medicinal properties.

**Objectives:** Upon completion of the course, the student shall be able

1. to know the techniques in the cultivation and production of crude drugs
2. to know the crude drugs, their uses and chemical nature
3. know the evaluation techniques for the herbal drugs
4. to carry out the microscopic and morphological evaluation of crude drugs

#### Course Content:

#### UNIT-I Introduction to Pharmacognosy: 10 Hours

- (a) Definition, history, scope and development of Pharmacognosy  
(b) Sources of Drugs – Plants, Animals, Marine & Tissue culture  
(c) Organized drugs, unorganized drugs (dried latex, dried juices, dried extracts, gums and mucilages, oleoresins and oleo-gum-resins).

#### Classification of drugs:

Alphabetical, morphological, taxonomical, chemical, pharmacological, chemo and sero taxonomical classification of drugs

#### Quality control of Drugs of Natural Origin:

Adulteration of drugs of natural origin. Evaluation by organoleptic, microscopic, physical, chemical and biological methods and properties.

Quantitative microscopy of crude drugs including lycopodium spore method, leaf constants, camera lucida and diagrams of microscopic objects to scale with camera lucida.

#### UNIT-II Cultivation, Collection, Processing and storage of drugs of natural origin: 10 Hours

Cultivation and Collection of drugs of natural origin  
Factors influencing cultivation of medicinal plants.  
Plant hormones and their applications.  
Polyploidy, mutation and hybridization with reference to medicinal plants

#### Conservation of medicinal plants

#### UNIT-III Plant tissue culture: 07 Hours

Historical development of plant tissue culture, types of cultures, Nutritional requirements, growth and their maintenance.  
Applications of plant tissue culture in pharmacognosy.  
Edible vaccines

## Pharmacognosy and Phytochemistry I – Practical

### BP408 P. PHARMACOGNOSY AND PHYTOCHEMISTRY I (Practical)

4 Hours/Week

1. Analysis of crude drugs by chemical tests: (i) Tragacanth (ii) Acacia (iii) Agar (iv) Gelatin (v) starch (vi) Honey (vii) Castor oil
2. Determination of stomatal number and index
3. Determination of vein islet number, vein islet termination and palisade ratio.
4. Determination of size of starch grains, calcium oxalate crystals by eye piece micrometer
5. Determination of Fiber length and width
6. Determination of number of starch grains by Lycopodium spore method
7. Determination of Ash value
8. Determination of Extractive values of crude drugs
9. Determination of moisture content of crude drugs
10. Determination of swelling index and foaming

#### Recommended Books: (Latest Editions)

1. W.C.Evans, Trease and Evans Pharmacognosy, 16<sup>th</sup> edition, W.B. Saunders & Co., London, 2009.
2. Tyler, V.E., Brady, L.R. and Robbers, J.E., Pharmacognosy, 9<sup>th</sup> Edn., Lea and Febiger, Philadelphia, 1988.
3. Text Book of Pharmacognosy by T.E. Wallis
4. Mohammad Ali. Pharmacognosy and Phytochemistry, CBS Publishers & Distribution, New Delhi.
5. Text book of Pharmacognosy by C.K. Kokate, Purohit, Gokhlae (2007), 37<sup>th</sup> Edition, Nirali Prakashan, New Delhi.
6. Herbal drug industry by R.D. Choudhary (1996), 1<sup>st</sup> Edn, Eastern Publisher, New Delhi.
7. Essentials of Pharmacognosy, Dr.SH.Ansari, IInd edition, Birla publications, New Delhi, 2007
8. Practical Pharmacognosy: C.K. Kokate, Purohit, Gokhlae
9. Anatomy of Crude Drugs by M.A. Iyengar

## Pharmacognosy and Phytochemistry II theory

b) study of utilization of radioactive isotopes in the investigation of Biogenetic studies.

**UNIT-II 14 Hours**  
General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial applications of following secondary metabolites:

**Alkaloids:** Vinca, Rauwolfia, Belladonna, Opium,  
**Phenylpropanoids and Flavonoids:** Lignans, Tea, Ruta  
**Steroids, Cardiac Glycosides & Triterpenoids:** Liquorice, Dioscorea, Digitalis  
**Volatile oils:** Mentha, Clove, Cinnamon, Fennel, Coriander,  
**Tannins:** Catechu, Pterocarpus  
**Resins:** Benzoin, Guggul, Ginger, Asafoetida, Myrrh, Colophony  
**Glycosides:** Senna, Aloes, Bitter Almond  
**Iridoids, Other terpenoids & Naphthaquinones:** Gentian, Artemisia, taxus, carotenoids

**UNIT-III 06 Hours**  
Isolation, Identification and Analysis of Phytoconstituents

- Terpenoids: Menthol, Citral, Artemisin
- Glycosides: Glycyrrhetic acid & Rutin
- Alkaloids: Atropine, Quinine, Reserpine, Caffeine
- Resins: Podophyllotoxin, Curcumin

**UNIT-IV 10 Hours**  
Industrial production, estimation and utilization of the following phytoconstituents:  
Forskolin, Sennoside, Artemisinin, Diosgenin, Digoxin, Atropine, Podophyllotoxin, Caffeine, Taxol, Vincristine and Vinblastine

**UNIT V 8 Hours**  
**Basics of Phytochemistry**  
Modern methods of extraction, application of latest techniques like Spectroscopy, chromatography and electrophoresis in the isolation, purification and identification of crude drugs.

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## Pharmacognosy and Phytochemistry II Practical

### BP 508 P. PHARMACOGNOSY AND PHYTOCHEMISTRY II (Practical) 4 Hours/Week

- Morphology, histology and powder characteristics & extraction & detection of: Cinchona, Cinnamon, Senna, Clove, Ephedra, Fennel and Coriander
- Exercise involving isolation & detection of active principles
  - Caffeine - from tea dust.
  - Diosgenin from Dioscorea
  - Atropine from Belladonna
  - Sennosides from Senna
- Separation of sugars by Paper chromatography
- TLC of herbal extract
- Distillation of volatile oils and detection of phytoconstituents by TLC
- Analysis of crude drugs by chemical tests: (i) Asafoetida (ii) Benzoin (iii) Colophony (iv) Aloes (v) Myrrh

#### Recommended Books: (Latest Editions)

- W.C. Evans, Trease and Evans Pharmacognosy, 16<sup>th</sup> edition, W.B. Saunders & Co., London, 2009.
- Mohammad Ali. Pharmacognosy and Phytochemistry, CBS Publishers & Distribution, New Delhi.
- Text book of Pharmacognosy by C.K. Kokate, Purohit, Gokhale (2007), 37<sup>th</sup> Edition, Nirali Prakashan, New Delhi.
- Herbal drug industry by R.D. Choudhary (1996), 1<sup>st</sup> Edn, Eastern Publisher, New Delhi.
- Essentials of Pharmacognosy, Dr.SH.Ansari, 1<sup>st</sup> edition, Birla publications, New Delhi, 2007
- Herbal Cosmetics by H.Pande, Asia Pacific Business press, Inc, New Delhi.
- A.N. Kalia, Textbook of Industrial Pharmacognosy, CBS Publishers, New Delhi, 2005.
- R Endress, Plant cell Biotechnology, Springer-Verlag, Berlin, 1994.
- Pharmacognosy & Pharmacobiotechnology. James Bobbers, Marilyn KS, VE Tylor.
- The formulation and preparation of cosmetic, fragrances and flavours.
- Remington's Pharmaceutical sciences.
- Text Book of Biotechnology by Vyas and Dixit.
- Text Book of Biotechnology by R.C. Dubey.

## Herbal Drug technology Theory

<b>UNIT-II</b> <b>Nutraceuticals</b> General aspects, Market, growth, scope and types of products available in the market. Health benefits and role of Nutraceuticals in ailments like Diabetes, CVS diseases, Cancer, Irritable bowel syndrome and various Gastro intestinal diseases. Study of following herbs as health food: Alfalfa, Chicory, Ginger, Fenugreek, Garlic, Honey, Amla, Ginseng, Ashwagandha, Spirulina <b>Herbal-Drug and Herb-Food Interactions:</b> General introduction to interaction and classification. Study of following drugs and their possible side effects and interactions: Hypericum, kava-kava, Ginkobiloba, Ginseng, Garlic, Pepper & Ephedra.	<b>7 Hours</b>
<b>UNIT-III</b> <b>Herbal Cosmetics</b>	<b>10 Hours</b>

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Sources and description of raw materials of herbal origin used via, fixed oils, waxes, gums colours, perfumes, protective agents, bleaching agents, antioxidants in products such as skin care, hair care and oral hygiene products.

**Herbal excipients:**  
Herbal Excipients – Significance of substances of natural origin as excipients – colorants, sweeteners, binders, diluents, viscosity builders, disintegrants, flavors & perfumes.

**Herbal formulations :**  
Conventional herbal formulations like syrups, mixtures and tablets and Novel dosage forms like phytosomes

**UNIT-IV** **10 Hours**  
**Evaluation of Drugs** WHO & ICH guidelines for the assessment of herbal drugs  
Stability testing of herbal drugs.

**Patenting and Regulatory requirements of natural products:**  
a) Definition of the terms: Patent, IPR, Farmers right, Breeder's right, Bioprospecting and Biopiracy  
b) Patenting aspects of Traditional Knowledge and Natural Products. Case study of Curcuma & Neem.

**Regulatory Issues** - Regulations in India (ASU DTAB, ASU DCC), Regulation of

## Herbal Drug technology Practical

### BP 609 P. HERBAL DRUG TECHNOLOGY (Practical) 4 hours/ week

1. To perform preliminary phytochemical screening of crude drugs.
2. Determination of the alcohol content of Asava and Arista
3. Evaluation of excipients of natural origin
4. Incorporation of prepared and standardized extract in cosmetic formulations like creams, lotions and shampoos and their evaluation.
5. Incorporation of prepared and standardized extract in formulations like syrups, mixtures and tablets and their evaluation as per Pharmacopoeial requirements.
6. Monograph analysis of herbal drugs from recent Pharmacopoeias
7. Determination of Aldehyde content
8. Determination of Phenol content
9. Determination of total alkaloids

#### Recommended Books: (Latest Editions)

1. Textbook of Pharmacognosy by Trease & Evans.
2. Textbook of Pharmacognosy by Tyler, Brady & Robber.
3. Pharmacognosy by Kokate, Purohit and Gokhale
4. Essential of Pharmacognosy by Dr.S.H.Ansari
5. Pharmacognosy & Phytochemistry by V.D.Rangari
6. Pharmacopoeal standards for Ayurvedic Formulation (Council of Research in Indian Medicine & Homeopathy)
7. Mukherjee, P.W. Quality Control of Herbal Drugs: An Approach to Evaluation of Botanicals. Business Horizons Publishers, New Delhi, India, 2002.

## Advanced Pharmacognosy I

ADVANCED PHARMACOLOGY - I (MPG 102T)	
<p><b>SCOPE</b> To learn and understand the advances in the field of cultivation and isolation of drugs of natural origin, various phytopharmaceuticals, nutraceuticals and their medicinal use and health benefits.</p> <p><b>OBJECTIVES</b> Upon completion of the course, the student shall be able to know the,</p> <ul style="list-style-type: none"> <li>advances in the cultivation and production of drugs</li> <li>various phyto-pharmaceuticals and their source, its utilization and medicinal value.</li> <li>various nutraceuticals/herbs and their health benefits</li> <li>Drugs of marine origin</li> <li>Pharmacovigilance of drugs of natural origin</li> </ul>	
<p><b>THEORY</b> 60 Hrs</p>	
1.	<p><b>Plant drug cultivation:</b> General introduction to the importance of Pharmacognosy in herbal drug industry, Indian Council of Agricultural Research, Current Good Agricultural Practices, Current Good Cultivation Practices, Current Good Collection Practices, Conservation of medicinal plants- Ex-situ and In-situ conservation of medicinal plants. 12 Hrs</p>
2.	<p><b>Marine natural products:</b> General methods of isolation and purification, Study of Marine toxins, Recent advances in research in marine drugs, Problems faced in research on marine drugs such as taxonomical identification, chemical screening and their solution. 12 Hrs</p>
3.	<p><b>Nutraceuticals:</b> Current trends and future scope, Inorganic mineral supplements, Vitamin supplements, Digestive enzymes, Dietary fibres, Cereals and grains, Health drinks of natural origin, Antioxidants, Polyunsaturated fatty acids, Herbs as functional foods, Formulation and standardization of nutraceuticals, Regulatory aspects, FSSAI guidelines, Sources, name of marker compounds and their chemical nature, medicinal uses and health benefits of following 12 Hrs</p>
4.	<p><b>Phytopharmaceuticals:</b> Occurrence, isolation and characteristic features (Chemical nature, uses in pharmacy, medicinal and health benefits) of following. 12 Hrs</p> <ol style="list-style-type: none"> <li>Carotenoids - i) <math>\alpha</math> and <math>\beta</math> - Carotene ii) Xanthophyll (Lutein)</li> <li>Limonoids - i) d-Limonene ii) <math>\alpha</math> - Terpineol</li> <li>Saponins - i) Shatavarins</li> <li>Flavonoids - i) Resveratrol ii) Rutin iii) Hesperidin iv) Naringin v) Quercetin</li> <li>Phenolic acids- Ellagic acid</li> <li>Vitamins</li> <li>Tocotrienols and Tocopherols</li> <li>Andrographolide, Glycolipids, Guggulipids, Withanolides, Vascine, Taxol</li> <li>Miscellaneous</li> </ol>
5.	<p><b>Pharmacovigilance of drugs of natural origin:</b> WHO and AYUSH guidelines for safety monitoring of natural medicine, Spontaneous reporting schemes for bioterrorism adverse reactions, bio drug-drug and bio drug-food interactions with suitable examples. 12 Hrs</p>
<p><b>REFERENCES (Latest Editions of)</b></p> <ol style="list-style-type: none"> <li>Pharmacognosy - G. F. Trease and W.C. Evans. Saunders Edinburgh, New York.</li> <li>Pharmacognosy-Tyler, Brady, Robbers</li> <li>Modern Methods of Plant Analysis- Peach &amp; M.V. Tracey, Vol. I&amp;II</li> <li>Text Book of Pharmacognosy by T.E. Wallis</li> <li>Marine Natural Products-Vol. I to IV.</li> <li>Natural products: A lab guide by Raphael Ikan, Academic Press 1991.</li> <li>Glimpses of Indian Ethano Pharmacology, P. Pushpangadam. Ulf Nyman. V.George Tropical Botanic Garden &amp; Research Institute, 1995.</li> <li>Medicinal natural products (a biosynthetic approach), Paul M. Dewick, John Wiley &amp; Sons Ltd., England, 1998.</li> <li>Chemistry of Marine Natural Products- Paul J. Schewer 1973.</li> </ol>	

## Phytochemistry

PHYTOCHEMISTRY (MPG 103T)	
<p><b>SCOPE</b> Students shall be equipped with the knowledge of natural product drug discovery and will be able to isolate, identify and extract and the phyto-constituents</p> <p><b>OBJECTIVES</b> Upon completion of the course, the student shall be able to know the,</p> <ul style="list-style-type: none"> <li>different classes of phytoconstituents, their biosynthetic pathways, their properties, extraction and general process of natural product drug discovery</li> <li>phytochemical fingerprinting and structure elucidation of phytoconstituents.</li> </ul>	
<p><b>THEORY</b> 60 Hrs</p>	
1.	<p><b>Biosynthetic pathways and Radio tracing techniques:</b> Constituents &amp; their Biosynthesis, Isolation, Characterization and purification with a special reference to their importance in herbal industries of following phyto-pharmaceuticals containing drugs: 12 Hrs</p> <ol style="list-style-type: none"> <li>Alkaloids: Ephedrine, Quinine, Strychnine, Piperine, Berberine, Taxol, Vinca alkaloids.</li> <li>Glycosides: Digitoxin, Glycyrrhizin, Sennosides, Bacosides, Quercetin.</li> <li>Steroids: Hecogenin, guggulosterone and withanolides</li> <li>Coumarin: Umbelliferone.</li> <li>Terpenoids: Cucurbitacins</li> </ol>
2.	<p><b>Drug discovery and development:</b> History of herbs as source of drugs and drug discovery, the lead structure selection process, structure development, product discovery process and drug registration, Selection and optimization of lead compounds with suitable examples from the following source : artemisin, andrographolides. Clinical studies emphasising on phases of clinical trials, protocol design for lead molecules. 12 Hrs</p>
3.	<p><b>Extraction and Phytochemical studies:</b> Recent advances in extractions with emphasis on selection of method and choice of solvent for extraction, successive and exhaustive extraction and other methods of extraction commonly used like microwave 12 Hrs</p>
<p>assisted extraction, Methods of fractionation. Separation of phytoconstituents by latest CCCET, SCFE techniques including preparative HPLC and Flash column chromatography.</p>	
4.	<p><b>Phytochemical finger printing:</b> HPTLC and LCMS/GCMS applications in the characterization of herbal extracts. Structure elucidation of phytoconstituents. 12 Hrs</p>
5.	<p><b>Structure elucidation</b> of the following compounds by spectroscopic techniques like UV, IR, MS, NMR (1H, 13C) 12 Hrs</p> <ol style="list-style-type: none"> <li>Carvone, Citral, Menthol</li> <li>Luteolin, Kaempferol</li> <li>Nicotine, Caffeine iv) Glycyrrhizin.</li> </ol>
<p><b>REFERENCES (Latest Editions of)</b></p> <ol style="list-style-type: none"> <li>Organic chemistry by I.L. Finar Vol.II</li> <li>Pharmacognosy by Trease and Evans, ELBS.</li> <li>Pharmacognosy by Tyler and Brady.</li> <li>Text book of Pharmacognosy by Wallis.</li> <li>Clark's isolation and Identification of drugs by A.C. Mottal.</li> <li>Plant Drug Analysis by Wagner &amp; Bladt.</li> <li>Wilson and Gisvold's text book of Organic Medicinal and Pharmaceutical Chemistry by Deorge. R.F.</li> <li>The Chemistry of Natural Products, Edited by R.H. Thomson, Springer International Edn. 1994.</li> <li>Natural Products Chemistry Practical Manual by Anees A Siddiqui and Seemi Siddiqui</li> <li>Organic Chemistry of Natural Products, Vol. 1&amp;2. Gurdeep R Chatwal.</li> <li>Chemistry of Natural Products- Vol. 1 onwards IWPAAC.</li> <li>Modern Methods of Plant Analysis- Peach &amp; M.V. Tracey, Vol. I&amp;II</li> <li>Medicinal Natural products - a biosynthetic approach, Dewick PM, John Wiley &amp; Sons, Toronto, 1998.</li> <li>Chemistry of Natural Products, Bhat SV, Nagasampagi BA, Meenakshi S, Narosa Publishing House, New Delhi.</li> </ol>	

## Quality Control and Standardization of Herbals – Theory

### **BP 806 ET. QUALITY CONTROL AND STANDARDIZATION OF HERBALS (Theory)**

**Scope:** In this subject the student learns about the various methods and guidelines for evaluation and standardization of herbs and herbal drugs. The subject also provides an opportunity for the student to learn cGMP, GAP and GLP in traditional system of medicines.

**Objectives:** Upon completion of the subject student shall be able to;

1. know WHO guidelines for quality control of herbal drugs
2. know Quality assurance in herbal drug industry
3. know the regulatory approval process and their registration in Indian and international markets
4. appreciate EU and ICH guidelines for quality control of herbal drugs

#### **Unit I** **10 hours**

Basic tests for drugs – Pharmaceutical substances, Medicinal plants materials and dosage forms

WHO guidelines for quality control of herbal drugs.

Evaluation of commercial crude drugs intended for use

#### **Unit II** **10 hours**

**Quality assurance in herbal drug industry of cGMP, GAP, GMP and GLP in traditional system of medicine.**

**WHO Guidelines on current good manufacturing Practices (cGMP) for Herbal Medicines**

**WHO Guidelines on GACP for Medicinal Plants.**

#### **Unit III** **10 hours**

EU and ICH guidelines for quality control of herbal drugs.

Research Guidelines for Evaluating the **Safety and Efficacy of Herbal Medicines**

#### **Unit IV** **08 hours**

Stability testing of herbal medicines. Application of various chromatographic techniques in standardization of herbal products.

Preparation of documents for new drug application and export registration

GMP requirements and Drugs & Cosmetics Act provisions.



# Industrial Pharmacognostical Technology

## INDUSTRIAL PHARMACOGNOSTICAL TECHNOLOGY (MPG 104T)

### SCOPE

To understand the Industrial and commercial potential of drugs of natural origin, integrate traditional Indian systems of medicine with modern medicine and also to know regulatory and quality policy for the trade of herbals and drugs of natural origin.

### OBJECTIVES

By the end of the course the student shall be able to know,

- the requirements for setting up the herbal/natural drug industry.
- the guidelines for quality of herbal/natural medicines and regulatory issues.
- the patenting/IPR of herbals/natural drugs and trade of raw and finished materials.

### THEORY

60 Hrs

1. **Herbal drug industry:** Infrastructure of herbal drug industry 12 Hrs  
Involved in production of standardized extracts and various dosage forms. Current challenges in upgrading and modernization of herbal formulations. Entrepreneurship Development, Project selection, project report, technical knowledge, Capital venture, plant design, layout and construction. Pilot plant scale –up techniques, case studies of herbal extracts. Formulation and production management of herbals.
2. **Regulatory requirements for setting herbal drug industry:** 12 Hrs  
Global marketing management. Indian and international patent law as applicable herbal drugs and natural products. Export - Import (EXIM) policy, TRIPS. Quality assurance in herbal/natural drug products. Concepts of TQM, GMP, GLP, ISO-9000.
3. **Monographs of herbal drugs:** General parameters of monographs of herbal drugs and comparative study in IP, USP, Ayurvedic Pharmacopoeia, Siddha and Unani Pharmacopoeia, American herbal pharmacopoeia, British herbal pharmacopoeia, WHO guidelines in quality assessment of herbal drugs.

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4. **Testing of natural products and drugs:** Herbal medicines - 12 Hrs  
clinical laboratory testing. Stability testing of natural products, Hrs protocols.

5. **Patents:** Indian and international patent laws, proposed 12 Hrs  
amendments as applicable to herbal/natural products and process. Geographical indication, Copyright, Patentable subject matters, novelty, non obviousness, utility, enablement and best mode, procedure for Indian patent filing, patent processing, grant of patents, rights of patents, cases of patents, opposition and revocation of patents, patent search and literature, Controllers of patents.

### REFERENCES (Latest Editions of)

1. Herbal drug industry by R.D. Choudhary (1996), Eastern Publisher, New Delhi.
2. GMP for Botanicals - Regulatory and Quality issues on Phytomedicine by Pulok K Mukharjee (2003), 1st Edition, Business horizons Robert Verpoorte, New Delhi.
3. Quality control of herbal drugs by Pulok K Mukharjee (2002), Business Horizons Pharmaceutical Publisher, New Delhi.
4. PDR for Herbal Medicines (2000), Medicinal Economic Company, New Jersey.
5. Indian Herbal Pharmacopoeia (2002), IDMA, Mumbai.
6. Text book of Pharmacognosy by C.K. Kokate, Purohit, Gokhale (1996), Nirali Prakashan, New Delhi.
7. Text book of Pharmacognosy and Phytochemistry by Vinod D. Rangari (2002), Part I & II, Career Publication, Nasik, India.
8. Plant drug analysis by H.Wagner and S.Bladt, Springer, Berlin.
9. Standardization of Botanicals. Testing and extraction methods of medicinal herbs by V. Rajpal (2004), Vol.1, Eastern Publisher, New Delhi.
10. Phytochemical Dictionary. Handbook of Bioactive Compounds from Plants by J.B.Harborne, (1999), 11nd Edition, Taylor and Francis Ltd, UK.
11. Herbal Medicine. Expanded Commission E Monographs by M.Blumenthal, (2004), 1ST Edition,
12. Drug Formulation Manual by D.P.S.Kohli and D.H.Shah (1998), Eastern Publisher, New Delhi.

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## Pharmacognosy Practical I

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### PHARMACOGNOSY PRACTICAL - I (MPG I05P)

1. Analysis of Pharmacopoeial compounds of natural origin and their formulations by UV Vis spectrophotometer
2. Analysis of recorded spectra of simple phytoconstituents
3. Experiments based on Gas Chromatography
4. Estimation of sodium/potassium by flame photometry
5. Development of fingerprint of selected medicinal plant extracts commonly used in herbal drug industry viz. Ashwagandha, Tulsi, Bael, Amla, Ginger, Aloe, Vidang, Senna, Lawsonia by TLC/HPTLC method.
6. Methods of extraction
7. Phytochemical screening
8. Demonstration of HPLC- estimation of glycerrhizin
9. Monograph analysis of clove oil
10. Monograph analysis of castor oil.
11. Identification of bioactive constituents from plant extracts
12. Formulation of different dosage forms and their standardisation.

## Medicinal Plant biotechnology

MEDICINAL PLANT BIOTECHNOLOGY  
(MPG 201T)

SCOPE

To explore the knowledge of Biotechnology and its application in the improvement of quality of medicinal plants

OBJECTIVES

Upon completion of the course, the student shall be able to,

- Know the process like genetic engineering in medicinal plants for higher yield of Phytopharmaceuticals.
- Use the biotechnological techniques for obtaining and improving the quality of natural products/medicinal plants

THEORY

60 Hrs

1. Introduction to Plant biotechnology: Historical perspectives, 12 prospects for development of plant biotechnology as a source of medicinal agents. Applications in pharmacy and allied fields. Genetic and molecular biology as applied to pharmacognosy, study of DNA, RNA and protein replication, genetic code, regulation of gene expression, structure and complicity of genome, cell signaling, DNA recombinant technology. 12 Hrs
2. Different tissue culture techniques: Organogenesis and embryogenesis, synthetic seed and monoclonal variation, Protoplast fusion, Hairy root multiple shoot cultures and their applications. Micro propagation of medicinal and aromatic plants. Sterilization methods involved in tissue culture, gene transfer in plants and their applications. 15 Hrs
3. Immobilisation techniques & Secondary Metabolite Production: Immobilization techniques of plant cell and its application on secondary metabolite Production. Cloning of plant cell: Different methods of cloning and its applications. Advantages and disadvantages of plant cell cloning. Secondary metabolism in tissue cultures with emphasis on production of medicinal agents. Precursors and elicitors on production of secondary metabolites. 15 Hrs
4. Biotransformation and Transgenesis: Biotransformation, bioreactors for pilot and large scale cultures of plant cells and retention of biosynthetic potential in cell culture. Transgenic 13 Hrs

## Advanced Pharmacognosy-II

### ADVANCED PHARMACOGNOSY - II (MPG 202T)

#### SCOPE

To know and understand the Adulteration and Deterioration that occurs in herbal/natural drugs and methods of detection of the same. Study of herbal remedies and their validations, including methods of screening

#### OBJECTIVES

Upon completion of the course, the student shall be able to know the,

- validation of herbal remedies
- methods of detection of adulteration and evaluation techniques for the herbal drugs
- methods of screening of herbals for various biological properties

#### THEORY

60 Hrs

1. Herbal remedies – Toxicity and Regulations: Herbals vs 12  
Conventional drugs, Efficacy of Herbal medicine products, Hrs  
Validation of herbal therapies, Pharmacodynamic and  
Pharmacokinetic issues.
2. **Adulteration and Deterioration:** Introduction, Types of 12  
Adulteration/ Substitution of Herbal drugs, Causes and Measures Hrs  
of Adulteration, Sampling Procedures, Determination of Foreign  
Matter, DNA Finger printing techniques in identification of drugs of  
natural origin, detection of heavy metals, pesticide residues,  
phytotoxin, microbial contamination in herbs and their  
formulations.
3. Ethnobotany and Ethnopharmacology: Ethnobotany in herbal 12  
drug evaluation, Impact of Ethnobotany in traditional medicine, Hrs  
New development in herbals, Bio-prospecting tools for drug  
discovery, Role of Ethnopharmacology in drug evaluation,  
Reverse Pharmacology.
4. **Analytical Profiles of herbal drugs:** Andrographis paniculata, 12  
Boswellia serata, Coleus forskholii, Curcuma longa, Embelica Hrs  
officinalis, Psoralea corylifolia.
5. **Biological screening of herbal drugs:** Introduction and Need for 12  
Phyto-Pharmacological Screening, New Strategies for evaluating Hrs

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## Indian system of medicine

2. **Pharmacology, Yoga and Complementary practices** 12  
a) Naturopathy - Introduction, basic principles and treatment Hrs  
modalities.  
b) Yoga - Introduction and Streams of Yoga. Asanas, Pranayama,  
Meditations and Relaxation techniques.  
c) Aromatherapy – Introduction, aroma oils for common problems,  
carrier oils.
3. **Formulation development of various systems of medicine** 12  
Salient features of the techniques of preparation of some of the Hrs  
important class of Formulations as per Ayurveda, Siddha,  
Homeopathy and Unani Pharmacopoeia and texts.  
Standardization,  
Shelf life and Stability studies of ISM formulations.

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4. **Schedule T - Good Manufacturing Practice of Indian systems of** 12  
**medicine** Hrs  
**Components of GMP (Schedule - T) and its objectives,**  
Infrastructural requirements, working space, storage area,  
machinery and equipments, standard operating procedures,  
health and hygiene, documentation and records.  
Quality assurance in ISM formulation industry - GAP, GMP and  
GLP. Preparation of documents for new drug application and  
export registration.  
Challenges in monitoring the safety of herbal medicines;  
Regulation, quality assurance and control, National/Regional  
Pharmacopoeias.
5. **TKDL, Geographical indication Bill, Government bills in AYUSH,** 12  
**ISM, CCRAS, CCRS, CCRH, CCRU** Hrs

## Herbal Cosmetics

### HERBAL COSMETICS (MPG 204T)

#### SCOPE

This subject deals with the study of preparation and standardization of herbal/natural cosmetics. This subject gives emphasis to various national and international standards prescribed regarding herbal cosmeceuticals.

#### OBJECTIVES

After completion of the course, student shall be able to,

- understand the basic principles of various herbal/natural cosmetic preparations
- current Good Manufacturing Practices of herbal/natural cosmetics as per the regulatory authorities

#### THEORY

60 Hrs

1. Introduction: Herbal/natural cosmetics, Classification & Economic aspects. 12 Hrs  
Regulatory Provisions relation to manufacture of cosmetics: - License, GMP, offences & Penalties, Import & Export of Herbal/natural cosmetics, Industries involved in the production of Herbal/natural cosmetics;
2. Commonly used herbal cosmetics, raw materials, preservatives, surfactants, humectants, oils, colors, and some functional herbs, preformulation studies, compatibility studies, possible interactions between chemicals and herbs, design of herbal cosmetic formulation. 12 Hrs
3. Herbal Cosmetics : Physiology and chemistry of skin and pigmentation, hairs, scalp, lips and nail, Cleansing cream, Lotions, Face powders, Face packs, Lipsticks, Bath products, soaps and baby product, Preparation and standardisation of the following :  
Tonic, Bleaches, Dentifrices and Mouth washes & Tooth Pastes, Cosmetics for Nails. 12 Hrs
4. Cosmeceuticals of herbal and natural origin: Hair growth formulations, Shampoos, Conditioners, Colorants & hair oils, Fairness formulations, vanishing & foundation creams, anti-sun burn preparations, moisturizing creams, deodorants. 12 Hrs

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## Herbal cosmetics Practical

### HERBAL COSMETICS PRACTICALS (MPG 205P)

1. Isolation of nucleic acid from cauliflower heads
2. Isolation of RNA from yeast
3. Quantitative estimation of DNA
4. Immobilization technique
5. Establishment of callus culture
6. Establishment of suspension culture
7. Estimation of aldehyde contents of volatile oils
8. Estimation of total phenolic content in herbal raw materials
9. Estimation of total alkaloid content in herbal raw materials
10. Estimation of total flavonoid content in herbal raw materials
11. Preparation and standardization of various simple dosage forms from Ayurvedic, Siddha, Homoeopathy and Unani formulary
12. Preparation of certain Aromatherapy formulations
13. Preparation of herbal cosmetic formulation such as lip balm, lipstick, facial cream, herbal hair and nail care products
14. Evaluation of herbal tablets and capsules
15. Preparation of sunscreen, UV protection cream, skin care formulations.
16. Formulation & standardization of herbal cough syrup.

## Pharm D

### Pharmacognosy & Phytopharmaceuticals

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#### 2.3 PHARMACOGNOSY & PHYTOPHARMACEUTICALS (PRACTICAL)

**Practical : 3 Hrs./Week**

**General Requirements:** Laboratory Napkin, Observation Book 150 pages Zero brush, Needle, Blade, Match box.

**List of experiments:**

- 1 Introduction of Pharmacognosy laboratory and experiments.
  - 2 Study of cell wall constituents and cell inclusions.
  - 3 Macro, powder and microscopic study of Datura.
  - 4 Macro, powder and microscopic study of Senna.
  - 5 Macro, powder and microscopic study of Cassia.cinnamon.
  - 6 Macro, powder and microscopic study of Cinchona.
  - 7 Macro, powder and microscopic study of Ephedra.
  - 8 Macro, powder and microscopic study of Quassia.
  - 9 Macro, powder and microscopic study of Clove
  - 10 Macro, powder and microscopic study of Fennel.
  - 11 Macro, powder and microscopic study of Coriander.
  - 12 Macro, powder and microscopic study of Isapgol.
  - 13 Macro, powder and microscopic study of Nux vomica.
  - 14 Macro, powder and microscopic study of Rauwolfia.
  - 15 Macro, powder and microscopic study of Liquorice.
  - 16 Macro, powder and microscopic study of Ginger.
  - 17 Macro, powder and microscopic study of Podophyllum.
  - 18 Determination of Iodine value.
  - 19 Determination of Saponification value and unsaponifiable matter.
  - 20 Determination of ester value.
  - 21 Determination of Acid value.
  - 22 Chemical tests for Acacia.
  - 23 Chemical tests for Tragacanth.
  - 24 Chemical tests for Agar.
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## Computer Applications in Pharmacy – Theory

### BP205 T. COMPUTER APPLICATIONS IN PHARMACY (Theory)

30 Hrs (2 Hrs/Week)

**Scope:** This subject deals with the introduction Database, Database Management system, computer application in clinical studies and use of databases.

**Objectives:** Upon completion of the course the student shall be able to

1. know the various types of application of computers in pharmacy
2. know the various types of databases
3. know the various applications of databases in pharmacy

#### Course content:

#### UNIT – I 06 hours

**Number system:** Binary number system, Decimal number system, Octal number system, Hexadecimal number systems, conversion decimal to binary, binary to decimal, octal to binary etc, binary addition, binary subtraction – One's complement, Two's complement method, binary multiplication, binary division

**Concept of Information Systems and Software :** Information gathering, requirement and feasibility analysis, data flow diagrams, process specifications, input/output design, process life cycle, planning and managing the project

#### UNIT –II 06 hours

**Web technologies:** Introduction to HTML, XML, CSS and Programming languages, introduction to web servers and Server Products  
Introduction to databases, MYSQL, MS ACCESS, Pharmacy Drug database

#### UNIT – III 06 hours

**Application of computers in Pharmacy –** Drug information storage and retrieval, Pharmacokinetics, Mathematical model in Drug design, Hospital and Clinical Pharmacy, Electronic Prescribing and discharge (EP) systems, barcode medicine identification and automated dispensing of drugs, mobile technology and adherence monitoring

Diagnostic System, Lab-diagnostic System, Patient Monitoring System, Pharma Information System

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#### UNIT – IV 06 hours

**Bioinformatics:** Introduction, Objective of Bioinformatics, Bioinformatics Databases, Concept of Bioinformatics, Impact of Bioinformatics in Vaccine Discovery

#### UNIT-V 06 hours

**Computers as data analysis in Preclinical development:**  
Chromatographic data analysis(CDS), Laboratory information management System (LIMS) and Text Information Management System(TIMMS)



## Computer Applications in Pharmacy – Practical

### BP210P. COMPUTER APPLICATIONS IN PHARMACY (Practical)

1. Design a questionnaire using a word processing package to gather information about a particular disease.
2. Create a HTML web page to show personal information.
3. Retrieve the information of a drug and its adverse effects using online tools
4. Creating mailing labels Using Label Wizard , generating label in MS WORD
5. Create a database in MS Access to store the patient information with the required fields Using access
6. Design a form in MS Access to view, add, delete and modify the patient record in the database
7. Generating report and printing the report from patient database
8. Creating invoice table using – MS Access
9. Drug information storage and retrieval using MS Access
10. Creating and working with queries in MS Access
11. Exporting Tables, Queries, Forms and Reports to web pages
12. Exporting Tables, Queries, Forms and Reports to XML pages

#### Recommended books (Latest edition):

1. Computer Application in Pharmacy – William E.Fassett –Lea and Febiger, 600 South Washington Square, USA, (215) 922-1330.
2. Computer Application in Pharmaceutical Research and Development –Sean Ekins – Wiley-Interscience, A John Willey and Sons, INC., Publication, USA
3. Bioinformatics (Concept, Skills and Applications) – S.C.Rastogi-CBS Publishers and Distributors, 4596/1- A, 11 Darya Gani, New Delhi – 110 002(INDIA)
4. Microsoft office Access - 2003, Application Development Using VBA, SQL Server, DAP and Infopath – Cary N.Prague – Wiley Dreamtech India (P) Ltd., 4435/7, Ansari Road, Daryagani, New Delhi - 110002

## MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES

### PHARMACEUTICAL QUALITY ASSURANCE (MQA)

#### MODERN PHARMACEUTICAL ANALYTICAL TECHNIQUES| (MQA 101T)

##### Scope

This subject deals with various advanced analytical instrumental techniques for identification, characterization and quantification of drugs. Instruments dealt are NMR, Mass spectrometer, IR, HPLC, GC etc.

##### Objectives

After completion of course student is able to know about chemicals and excipients

- The analysis of various drugs in single and combination dosage forms
- Theoretical and practical skills of the instruments

##### THEORY

60 Hrs

1. a. **UV-Visible spectroscopy:** Introduction, Theory, Laws, 12 Hrs  
Instrumentation associated with UV-Visible spectroscopy, Choice of solvents and solvent effect and Applications of UV-Visible spectroscopy, Difference/ Derivative spectroscopy.  
b. **IR spectroscopy:** Theory, Modes of Molecular vibrations, Sample handling, Instrumentation of Dispersive and Fourier - Transform IR Spectrometer, Factors affecting vibrational frequencies and Applications of IR spectroscopy, Data Interpretation.  
c. **Spectrofluorimetry:** Theory of Fluorescence, Factors affecting fluorescence (Characteristics of drugs that can be analysed by fluorimetry), Quenchers, Instrumentation and Applications of fluorescence spectrophotometer.  
d. **Flame emission spectroscopy and Atomic absorption spectroscopy:** Principle, Instrumentation, Interferences and Applications.
2. **NMR spectroscopy:** Quantum numbers and their role in NMR, 12 Hrs  
Principle, Instrumentation, Solvent requirement in NMR, Relaxation process, NMR signals in various compounds, Chemical shift, Factors influencing chemical shift, Spin-Spin coupling, Coupling constant, Nuclear magnetic double resonance, Brief outline of principles of FT-NMR and <sup>13</sup>C NMR. Applications of NMR spectroscopy.

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| 3 | <p><b>Mass Spectroscopy:</b> Principle, Theory, Instrumentation of Mass Spectroscopy, Different types of ionization like electron impact, chemical, field, FAB and MALDI, APCI, ESI, APPI Analyzers of Quadrupole and Time of Flight, Mass fragmentation and its rules, Meta stable ions, Isotopic peaks and Applications of Mass spectroscopy.</p>                                                                                                                                                                                                                                                                                           | 12<br>Hrs |
| 4 | <p><b>Chromatography:</b> Principle, apparatus, instrumentation, chromatographic parameters, factors affecting resolution, isolation of drug from excipients, data interpretation and applications of the following:</p> <ul style="list-style-type: none"> <li>• Thin Layer chromatography</li> <li>• High Performance Thin Layer Chromatography</li> <li>• Ion exchange chromatography</li> <li>• Column chromatography</li> <li>• Gas chromatography</li> <li>• High Performance Liquid chromatography</li> <li>• Ultra High Performance Liquid chromatography</li> <li>• Affinity chromatography</li> <li>• Gel Chromatography</li> </ul> | 12<br>Hrs |
| 5 | <p>a. <b>Electrophoresis:</b> Principle, Instrumentation, Working conditions, factors affecting separation and applications of the following:</p> <p>a) Paper electrophoresis b) Gel electrophoresis c) Capillary electrophoresis d) Zone electrophoresis e) Moving boundary electrophoresis f) Iso electric focusing</p> <p>b. <b>X ray Crystallography:</b> Production of X rays, Different X ray methods, Bragg's law, Rotating crystal technique, X ray powder technique, Types of crystals and applications of X-ray diffraction.</p>                                                                                                    | 12<br>Hrs |
| 6 | <p>a. <b>Potentiometry:</b> Principle, working, Ion selective Electrodes and Application of potentiometry.</p> <p>b. <b>Thermal Techniques:</b> Principle, thermal transitions and Instrumentation (Heat flux and power-compensation and designs), Modulated DSC, Hyper DSC, experimental parameters (sample preparation, experimental conditions, calibration, heating and cooling rates, resolution, source of errors) and their influence, advantage and disadvantages, pharmaceutical applications. Differential Thermal Analysis (DTA): Principle, instrumentation</p>                                                                   | 12<br>Hrs |

## Quality Management System

### QUALITY MANAGEMENT SYSTEMS (MQA 102T)

#### Scope

This course is designed to impart fundamental knowledge and concepts about various quality management principles and systems utilized in the manufacturing industry. It also aids in understanding the quality evaluation in the pharmaceutical industries.

#### Objectives

At completion of this course it is expected that students will be able to understand-

- The importance of quality
- ISO management systems
- Tools for quality improvement
- Analysis of issues in quality
- Quality evaluation of pharmaceuticals
- Stability testing of drug and drug substances
- Statistical approaches for quality

#### THEORY

60 Hrs

1. Introduction to Quality: Evolution of Quality, Definition of Quality, Dimensions of Quality 12 Hrs

**Quality as a Strategic Decision:** Meaning of strategy and strategic quality management, mission and vision statements, quality policy, Quality objectives, strategic planning and implementation, McKinsey 7s model, Competitive analysis, Management commitment to quality

**Customer Focus:** Meaning of customer and customer focus, Classification of customers, Customer focus, Customer perception of quality, Factors affecting customer perception, Customer requirements, Meeting customer needs and expectations, Customer satisfaction and Customer delight, Handling customer complaints, Understanding customer behavior, concept of internal and external customers. Case studies.

**Cost of Quality:** Cost of quality, Categories of cost of Quality, Models of cost of quality, Optimising costs, Preventing cost of quality.

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| 2 | <b>Pharmaceutical quality Management: Basics of Quality Management, Total Quality Management (TQM), Principles of Six sigma, ISO 9001:2008, 9001:2015, ISO 14001:2004, Pharmaceutical Quality Management - ICH Q10, Knowledge management, Quality Metrics, Operational Excellence and Quality Management Review. OSHAS guidelines, NABL certification and accreditation, CFR-21 part 11, WHO-GMP requirements.</b>                                                                                                                                                                                                             | 12<br>Hrs |
| 3 | <b>Six System Inspection model: Quality Management system, Production system, Facility and Equipment system, Laboratory control system, Materials system, Packaging and labeling system. Concept of self inspection. Quality systems: Change Management/ Change control. Deviations, Out of Specifications (OOS), Out of Trend (OOT), Complaints - evaluation and handling, Investigation and determination of root cause, Corrective &amp; Preventive Actions (CAPA), Returns and Recalls, Vendor Qualification, Annual Product Reviews, Batch Review and Batch Release. Concept of IPQC, area clearance/ Line clearance.</b> | 12<br>Hrs |
| 4 | <b>Drug Stability: ICH guidelines for stability testing of drug substances and drug products. Study of ICH Q8, Quality by Design and Process development report Quality risk management: Introduction, risk assessment, risk control, risk review, risk management tools, HACCP, risk ranking and filtering according to ICH Q9 guidelines.</b>                                                                                                                                                                                                                                                                                | 12<br>Hrs |
| 5 | <b>Statistical Process control (SPC): Definition and Importance of SPC, Quality measurement in manufacturing, Statistical control charts - concepts and general aspects, Advantages of statistical control, Process capability, Estimating Inherent or potential capability from a control chart analysis, Measuring process control and quality improvement, Pursuit of decreased process variability.</b>                                                                                                                                                                                                                    | 8 Hrs     |
| 6 | <b>Regulatory Compliance through Quality Management and development of Quality Culture Benchmarking: Definition of benchmarking, Reasons for benchmarking, Types of Benchmarking, Benchmarking process, Advantages of benchmarking, Limitations of benchmarking.</b>                                                                                                                                                                                                                                                                                                                                                           | 4 Hrs     |

## Quality Control and Quality Assurance

### QUALITY CONTROL AND QUALITY ASSURANCE (MQA 103T)

#### Scope

This course deals with the various aspects of quality control and quality assurance aspects of pharmaceutical industries. It covers the important aspects like cGMP, QC tests, documentation, quality certifications, GLP and regulatory affairs.

#### Objectives

Upon completion of this course the student should be able to

- Understand the cGMP aspects in a pharmaceutical industry
- To appreciate the importance of documentation
- To understand the scope of quality certifications applicable to Pharmaceutical industries
- To understand the responsibilities of QA & QC departments.

#### THEORY

60 Hrs

1. Introduction: Concept and evolution and scopes of Quality Control and Quality Assurance, Good Laboratory Practice, GMP, Overview of ICH Guidelines - QSEM, with special emphasis on Q-series guidelines.  
Good Laboratory Practices: Scope of GLP, Definitions, Quality assurance unit, protocol for conduct of non clinical testing, control on animal house, report preparation and documentation. CPCSEA guidelines. 12 Hrs
2. cGMP guidelines according to schedule M, USFDA (inclusive of CDER and CBER) Pharmaceutical Inspection Convention(PIC), WHO and EMEA covering: Organization and personnel responsibilities, training, hygiene and personal records, drug industry location, design, construction and plant lay out, maintenance, sanitation, environmental control, utilities and maintenance of sterile areas, control of contamination and Good Warehousing Practice. 12 Hrs
3. Analysis of raw materials, finished products, packaging materials, in process quality control (IPQC), Developing specification (ICH Q6 and Q3), purchase specifications and maintenance of stores for raw materials. 12 Hrs



In process quality control and finished products quality control for following dosage forms in Pharma industry according to Indian, US and British pharmacopoeias: tablets, capsules, ointments, suppositories, creams, parenterals, ophthalmic and surgical products (How to refer pharmacopoeias).

- 4 **Documentation in pharmaceutical industry:** Three tier documentation, Policy, Procedures and Work instructions, and records (Formats), Basic principles- How to maintain, retention and retrieval etc. Standard operating procedures (How to write), Master Batch Record, Batch Manufacturing Record, Quality audit plan and reports. Specification and test procedures, Protocols and reports. Distribution records. Electronic data handling. Concepts of controlled and uncontrolled documents. Submission documents for regulators DMFs, as Common Technical Document and Electronic Common Technical Documentation (CTD, eCTD). Concept of regulated and non regulated markets. 12 Hrs
- 5 **Manufacturing operations and controls:** Sanitation of manufacturing premises, mix-ups and cross contamination, processing of intermediates and bulk products, packaging operations, IPQC, release of finished product, process deviations, charge-in of components, time limitations on production, drug product inspection, expiry date calculation, calculation of yields, production record review, change control, sterile products, aseptic process control, packaging, reprocessing, salvaging, handling of waste and scrap disposal. Introduction, scope and importance of intellectual property rights. Concept of trade mark, copyright and patents. 12 Hrs

#### REFERENCES

1. Quality Assurance Guide by organization of Pharmaceutical Procedures of India, 3<sup>rd</sup> revised edition, Volume I & II, Mumbai, 1996.
2. Good Laboratory Practice Regulations, 2<sup>nd</sup> Edition, Sandy Weinberg Vol. 69, Marcel Dekker Series, 1995.
3. Quality Assurance of Pharmaceuticals- A compedium of Guide lines and Related materials Vol I & II, 2<sup>nd</sup> edition, WHO Publications, 1999.
4. How to Practice GMP's - P P Sharma, Vandana Publications, Agra, 1991.

**PRODUCT DEVELOPMENT AND TECHNOLOGY TRANSFER  
(MQA 104T)**

**Scope**

This deal with technology transfer covers the activities associated with Drug Substance, Drug Product and analytical tests and methods, required following candidate drug selection to completion of technology transfer from R&D to the first receiving site and technology transfer related to post-marketing changes in manufacturing places.

**Objectives**

Upon completion of this course the student should be able to

- To understand the new product development process
- To understand the necessary information to transfer technology from R&D to actual manufacturing by sorting out various information obtained during R&D
- To elucidate necessary information to transfer technology of existing products between various manufacturing places

**THEORY**

60 Hrs

1. Principles of Drug discovery and development: Introduction, Clinical research process. Development and informational content for Investigational New Drugs Application (IND), New Drug Application (NDA), Abbreviated New Drug Application (ANDA), Supplemental New Drug Application (SNDA), Scale Up Post Approval Changes (SUPAC) and Bulk active chemical Post approval changes (BACPAC), Post marketing surveillance, Product registration guidelines - CDSCO, USFDA. 12 Hrs
2. Pre-formulation studies: Introduction/concept, organoleptic properties, purity, impurity profiles, particle size, shape and surface area. Solubility, Methods to improve solubility of Drugs: Surfactants & its importance, co-solvency. Techniques for the study of Crystal properties and polymorphism. Pre-formulation protocol, Stability testing during product development. 12 Hrs
3. Pilot plant scale up: Concept, Significance, design, layout of pilot plant scale up study, operations, large scale manufacturing techniques (formula, equipment, process, stability and quality control) of solids, liquids, semisolid and parenteral dosage forms. New era of drug products: opportunities and challenges. 12 Hrs

- 4 **Pharmaceutical packaging:** Pharmaceutical dosage form and their packaging requirements, Pharmaceutical packaging materials, Medical device packaging, Enteral Packaging, Aseptic packaging systems, Container closure systems, Issues facing modern drug packaging, Selection and evaluation of Pharmaceutical packaging materials. 12 Hrs  
 Quality control test: Containers, closures and secondary packing materials.
- 5 **Technology transfer:** Development of technology by R & D, Technology transfer from R & D to production, Optimization and Production, Qualitative and quantitative technology models. 12 Hrs  
 Documentation in technology transfer: Development report, technology transfer plan and Exhibit.

#### REFERENCES

1. The process of new drug discovery and development. I and II Edition (2006) by Charles G. Smith, James T and O. Donnell. CRC Press, Group of Taylor and Francis.
2. Leon Lac Lachman, Herbert A. Liberman, Theory and Practice of Industrial Pharmacy. Marcel Dekker Inc. New York.
3. Sidney H Willing, Murray M. Tuckerman. Williams Hitchings IV, Good manufacturing of pharmaceuticals (A Plan for total quality control) 3rd Edition. Bhalani publishing house Mumbai.
4. Tablets Vol. I, II, III by Leon Lachman, Herbert A. Liberman, Joseph B. Schwartz, 2nd Edn. (1989) Marcel Dekker Inc. New York.
5. Text book of Bio-Pharmaceutics and clinical Pharmacokinetics by Milo Gibaldi, 3<sup>rd</sup> Edn, Lea & Febriger, Philadelphia.
6. Pharmaceutical product development. Vandana V. Patrevala. John I. Disouza. Maharukh T.Rustomji. CRC Press, Group of Taylor and Francis.
7. Dissolution, Bioavailability and Bio-Equivalence by Abdou H.M, Mack Publishing company, Eastern Pennsylvania.
8. Remingtons Pharmaceutical Sciences, by Alfonso & Gennaro, 19th Edn.(1995)OO2C Lippincott; Williams and Wilkins A Wolters Kluwer Company, Philadelphia.
9. The Pharmaceutical Sciences; the Pharma Path way 'Pure and applied Pharmacy' by D. A Sawant, Pragathi Books Pvt. Ltd.
10. Pharmaceutical Packaging technology by D.A. Dean. E.R. Evans, I.H. Hall. 1<sup>st</sup> Edition(Reprint 2006). Taylor and Francis. London and New York.

## Quality Assurance Practical I

### QUALITY ASSURANCE PRACTICAL - I (MQA 105P)

#### PRACTICALS

1. Analysis of Pharmacopoeial compounds in bulk and in their formulations (tablet/ capsules/ semisolids) by UV Vis spectrophotometer
2. Simultaneous estimation of multi-drug component containing formulations by UV spectrophotometry
3. Experiments based on HPLC
4. Experiments based on Gas Chromatography
5. Estimation of riboflavin/quinine sulphate by fluorimetry
6. Estimation of sodium/potassium by flame photometry or AAS
7. Case studies on
  - Total Quality Management
  - Six Sigma
  - Change Management/ Change control. Deviations,
  - Out of Specifications (OOS)
  - Out of Trend (OOT)
  - Corrective & Preventive Actions (CAPA)
  - Deviations
8. Development of Stability study protocol
9. Estimation of process capability
10. In process and finished product quality control tests for tablets, capsules, parenterals and semisolid dosage forms.
11. Assay of raw materials as per official monographs
12. Testing of related and foreign substances in drugs and raw materials
13. To carry out pre formulation study for tablets, parenterals (2 experiment).
14. To study the effect of pH on the solubility of drugs, (1 experiment)
15. Quality control tests for Primary and secondary packaging materials
16. Accelerated stability studies (1 experiment)
17. Improved solubility of drugs using surfactant systems (1 experiment)
18. Improved solubility of drugs using co-solvency method (1 experiment)
19. Determination of Pka and Log p of drugs.

## HAZARDS AND SAFETY MANAGEMENT

### HAZARDS AND SAFETY MANAGEMENT (MQA 201T)

#### Scope

This course is designed to convey the knowledge necessary to understand issues related to different kinds of hazard and their management. Basic theoretical and practical discussions integrate the proficiency to handle the emergency situation in the pharmaceutical product development process and provides the principle based approach to solve the complex tribulations.

#### Objectives

At completion of this course it is expected that students will be able to

- Understand about environmental problems among learners.
- Impart basic knowledge about the environment and its allied problems.
- Develop an attitude of concern for the industry environment.
- Ensure safety standards in pharmaceutical industry
- Provide comprehensive knowledge on the safety management
- Empower an ideas to clear mechanism and management in different kinds of hazard management system
- Teach the method of Hazard assessment, procedure, methodology for provide safe industrial atmosphere.

#### THEORY

60Hrs

1. Multidisciplinary nature of environmental studies: Natural Resources, Renewable and non-renewable resources, Natural resources and associated problems, a) Forest resources; b) Water resources; c) Mineral resources; d) Energy resources; e) Land resources  
Ecosystems: Concept of an ecosystem and Structure and function of an ecosystem. Environmental hazards: Hazards based on Air, Water, Soil and Radioisotopes. 12 Hrs
2. Air based hazards: Sources, Types of Hazards, Air circulation maintenance industry for sterile area and non sterile area, Preliminary Hazard Analysis (PHA) Fire protection system: Fire prevention, types of fire extinguishers and critical Hazard management system. 12 Hrs
3. Chemical based hazards: Sources of chemical hazards, Hazards of Organic synthesis, sulphonating hazard, Organic solvent hazard, Control measures for chemical hazards, 12 Hrs

Management of combustible gases, Toxic gases and Oxygen displacing gases management, Regulations for chemical hazard, Management of over-Exposure to chemicals and TLV concept.

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| 4 | <b>Fire and Explosion:</b> Introduction, Industrial processes and hazards potential, mechanical electrical, thermal and process hazards. Safety and hazards regulations, Fire protection system: Fire prevention, types of fire extinguishers and critical Hazard management system mechanical and chemical explosion, multiphase reactions, transport effects and global rates. Preventive and protective management from fires and explosion- electricity passivation, ventilation, and sprinkling, proofing, relief systems -relief valves, flares, scrubbers. | 12<br>Hrs |
| 5 | <b>Hazard and risk management:</b> Self-protective measures against workplace hazards. Critical training for risk management, Process of hazard management, ICH guidelines on risk assessment and Risk management methods and Tools<br>Factory act and rules, fundamentals of accident prevention, elements of safety programme and safety management, Physicochemical measurements of effluents, BOD, COD, Determination of some contaminants, Effluent treatment procedure, Role of emergency services.                                                         | 12<br>Hrs |

#### REFERENCES

1. Y.K. Sing, Environmental Science, New Age International Pvt, Publishers, Bangalore
2. "Quantitative Risk Assessment in Chemical Process Industries" American Institute of Chemical Industries, Centre for Chemical Process safety.
3. Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad - 380 013, India.
4. Hazardous Chemicals: Safety Management and Global Regulations, T.S.S. Dikshith, CRC press

## PHARMACEUTICAL VALIDATION



**PHARMACEUTICAL VALIDATION**  
(MQA 202T)

**Scope**

The main purpose of the subject is to understand about validation and how it can be applied to industry and thus improve the quality of the products. The subject covers the complete information about validation, types, methodology and application.

**Objectives**

At completion of this course, it is expected that students will be able to understand

- The concepts of calibration, qualification and validation
- The qualification of various equipments and instruments
- Process validation of different dosage forms
- Validation of analytical method for estimation of drugs
- Cleaning validation of equipments employed in the manufacture of pharmaceuticals

**THEORY**

60 Hrs

1. **Introduction to validation:** Definition of Calibration, Qualification and Validation, Scope, frequency and importance. Difference between calibration and validation. Calibration of weights and measures. Advantages of Validation, scope of Validation, Organization for Validation, Validation Master plan, Types of Validation, Streamlining of qualification & Validation process and Validation Master Plan.  
**Qualification:** User requirement specification, Design qualification, Factory Acceptance Test (FAT)/Site Acceptance Test (SAT), Installation qualification, Operational qualification, Performance qualification, Re-Qualification (Maintaining status-Calibration Preventive Maintenance, Change management). 10 Hrs
  
2. **Qualification of manufacturing equipment:** Dry Powder Mixers, Fluid Bed and Tray dryers, Tablet Compression (Machine), Dry heat sterilization/Tunnels, Autoclaves, Membrane filtration, Capsule filling machine. 10 Hrs  
**Qualification of analytical instruments:** UV-Visible spectrophotometer, FTIR, DSC, GC, HPLC, HPTLC, LC-MS.

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| 3 | <p><b>Qualification of laboratory equipments:</b> Hardness tester, Friability test apparatus, tap density tester, Disintegration tester, Dissolution test apparatus</p> <p><b>Validation of Utility systems:</b> Pharmaceutical water system &amp; pure steam, HVAC system, Compressed air and nitrogen.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10<br>Hrs |
| 4 | <p><b>Process Validation:</b> Concept, Process and documentation of Process Validation. Prospective, Concurrent &amp; Retrospective Validation, Re validation criteria, Process Validation of various formulations (Coated tablets, Capsules, Ointment/Creams, Liquid Orals and aerosols.), Aseptic filling: Media fill validation, USFDA guidelines on Process Validation- A life cycle approach. Analytical method validation: General principles, Validation of analytical method as per ICH guidelines and USP.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10<br>Hrs |
| 5 | <p><b>Cleaning Validation:</b> Cleaning Method development, Validation of analytical method used in cleaning, Cleaning of Equipment, Cleaning of Facilities. Cleaning in place (CIP). Validation of facilities in sterile and non-sterile plant. Computerized system validation: Electronic records and digital signature - 21 CFR Part 11 and GAMP</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 10<br>Hrs |
| 6 | <p><b>General Principles of Intellectual Property:</b> Concepts of Intellectual Property (IP), Intellectual Property Protection (IPP), Intellectual Property Rights (IPR); Economic importance, mechanism for protection of Intellectual Property -patents, Copyright, Trademark; Factors affecting choice of IP protection; Penalties for violation; Role of IP in pharmaceutical industry; Global ramification and financial implications. Filing a patent applications; patent application forms and guidelines. Types patent applications-provisional and non provisional, PCT and convention patent applications; International patenting requirement procedures and costs; Rights and responsibilities of a patentee; Practical aspects regarding maintaining of a Patent file; Patent infringement meaning and scope. Significance of transfer technology (TOT), IP and ethics-positive and negative aspects of IPP; Societal responsibility, avoiding unethical practices.</p> | 10<br>Hrs |

## AUDITS AND REGULATORY COMPLIANCE

**AUDITS AND REGULATORY COMPLIANCE  
(MPA 203T)**

**Scope**

This course deals with the understanding and process for auditing in pharmaceutical industries. This subject covers the methodology involved in the auditing process of different in pharmaceutical industries.

**Objectives**

Upon completion of this course the student should be able to

- To understand the importance of auditing
- To understand the methodology of auditing
- To carry out the audit process
- To prepare the auditing report
- To prepare the check list for auditing

**THEORY**

60 Hrs

1. Introduction: Objectives, Management of audit, Responsibilities, 12  
Planning process, information gathering, administration, Hrs  
Classifications of deficiencies
2. Role of quality systems and audits in pharmaceutical 12  
manufacturing environment: cGMP Regulations, Quality Hrs  
assurance functions, Quality systems approach, Management  
responsibilities, Resource, Manufacturing operations, Evaluation  
activities, Transitioning to quality system approach, Audit checklist  
for drug industries.
3. Auditing of vendors and production department: Bulk 12  
Pharmaceutical Chemicals and packaging material Vendor audit, Hrs  
Warehouse and weighing, Dry Production: Granulation, tableting,  
coating, capsules, sterile production and packaging.
4. Auditing of Microbiological laboratory: Auditing the 12  
manufacturing process, Product and process information, General Hrs  
areas of interest in the building raw materials, Water, Packaging  
materials.
5. Auditing of Quality Assurance and engineering department: 12  
Quality Assurance Maintenance, Critical systems: HVAC, Water, Hrs  
Water for Injection systems, ETP.

**REFERENCES**

1. Compliance auditing for Pharmaceutical Manufacturers. Karen Ginsbury and Gil Bismuth, Interpharm/CRC, Boca Raton, London New York, Washington D.C.
2. Pharmaceutical Manufacturing Handbook, Regulations and Quality by Shayne Cox Gad. Wiley-Interscience, A John Wiley and sons, Inc., Publications.
3. Handbook of microbiological Quality control. Rosamund M. Baird, Norman A. Hodges, Stephen P. Denyar. CRC Press. 2000.
4. Laboratory auditing for quality and regulatory compliance. Donald C. Singer, Raluca-loana Stefan, Jacobus F. Van Staden. Taylor and Francis (2005).

**PHARMACEUTICAL MANUFACTURING TECHNOLOGY**  
**(MQA 204T)**

**Scope**

This course is designed to impart knowledge and skills necessary to train the students with the industrial activities during Pharmaceutical Manufacturing.

**Objectives**

At completion of this course it is expected that students will be able to understand,

- The common practice in the pharmaceutical industry developments, plant layout and production planning
- Will be familiar with the principles and practices of aseptic process technology, non sterile manufacturing technology and packaging technology.
- Have a better understanding of principles and implementation of Quality by design (QbD) and process analytical technology (PAT) in pharmaceutical manufacturing

**THEORY**

60 Hrs

1. **Pharmaceutical industry developments:** Legal requirements and Licenses for API and formulation industry, Plant location- Factors influencing, Plant layout: Factors influencing, Special provisions, Storage space requirements, sterile and aseptic area layout. Production planning: General principles, production systems, calculation of standard cost, process planning, routing, loading, scheduling, dispatching of records, production control. 12 Hrs
2. **Aseptic process technology:** Manufacturing, manufacturing flowcharts, in process-quality control tests for following sterile dosage forms: Ointment, Suspension and Emulsion, Dry powder, Solution (Small Volume & large Volume). Advanced sterile product manufacturing technology : Area planning & environmental control, wall and floor treatment, fixtures and machineries, change rooms, personnel flow, utilities & utilities equipment location, engineering and maintenance. Process Automation in Pharmaceutical Industry: With specific reference to manufacturing of sterile semisolids, Small Volume Parenterals & Large Volume Parenterals (SVP & LVP), Monitoring of Parenteral manufacturing facility, Cleaning in Place (CIP). 12 Hrs

Sterilization in Place (SIP), Prefilled Syringe, Powdered Jet, Needle Free Injections, and Form Fill Seal Technology (FFS).  
Lyophilization technology: Principles, process, equipment.

- 3 **Non sterile manufacturing process technology:** 12 Hrs  
Manufacturing, manufacturing flowcharts, in process-quality control tests for following Non-Sterile solid dosage forms: Tablets (compressed & coated), Capsules (Hard & Soft).  
Advance non-sterile solid product manufacturing technology: Process Automation in Pharmaceutical Industry with specific reference to manufacturing of tablets and coated products, Improved Tablet Production: Tablet production process, granulation and pelletization equipments, continuous and batch mixing, rapid mixing granulators, rota granulators, spheronizers and marumerisers, and other specialized granulation and drying equipments. Problems encountered.  
Coating technology: Process, equipments, particle coating, fluidized bed coating, application techniques. Problems encountered.
- 4 **Containers and closures for pharmaceuticals:** Types, 12 Hrs  
performance, assuring quality of glass; types of plastics used, Drug plastic interactions, biological tests, modification of plastics by drugs; different types of closures and closure liners; film wrapper; blister packs; bubble packs; shrink packaging; foil / plastic pouches, bottle seals, tape seals, breakable seals and sealed tubes; quality control of packaging material and filling equipment, flexible packaging, product package compatibility, transit worthiness of package, Stability aspects of packaging. Evaluation of stability of packaging material.
- 5 **Quality by design (QbD) and process analytical technology (PAT):** 12 Hrs  
Current approach and its limitations. Why QbD is required, Advantages, Elements of QbD, Terminology: QTPP, CMA, CQA, CPP, RLD, Design space, Design of Experiments, Risk Assessment and mitigation/minimization. Quality by Design, Formulations by Design, QbD for drug products, QbD for Drug Substances, QbD for Excipients, Analytical QbD. FDA initiative on process analytical technology. PAT as a driver for improving quality and reducing costs: quality by design (QbD), QA, QC and GAMP. PAT guidance, standards and regulatory requirements.

QUALITY ASSURANCE PRACTICAL – II PRACTICALS



QUALITY ASSURANCE PRACTICAL – II PRACTICALS  
(MQA 205P)

1. Organic contaminants residue analysis by HPLC
2. Estimation of Metallic contaminants by Flame photometer
3. Identification of antibiotic residue by TLC
4. Estimation of Hydrogen Sulphide in Air.
5. Estimation of Chlorine in Work Environment.
6. Sampling and analysis of SO<sub>2</sub> using Colorimetric method
7. Qualification of following Pharma equipment
  - a. Autoclave
  - b. Hot air oven
  - c. Powder Mixer (Dry)
  - d. Tablet Compression Machine
8. Validation of an analytical method for a drug
9. Validation of a processing area
10. Qualification of at least two analytical instruments
11. Cleaning validation of one equipment
12. Qualification of Pharmaceutical Testing Equipment (Dissolution testing apparatus, Friability Apparatus, Disintegration Tester)
13. Check list for Bulk Pharmaceutical Chemicals vendors
14. Check list for tableting production.
15. Check list for sterile production area
16. Check list for Water for injection.
17. Design of plant layout: Sterile and non-sterile
18. Case study on application of QbD
19. Case study on application of PAT



## UNIVERSITY GRANTS COMMISSION

### Ability Enhancement Compulsory Course (AECC - Environment Studies)

#### **Unit 1 : Introduction to environmental studies**

- Multidisciplinary nature of environmental studies;
- Scope and importance; Concept of sustainability and sustainable development.

(2 lectures)

#### **Unit 2 : Ecosystems**

- What is an ecosystem? Structure and function of ecosystem; Energy flow in an ecosystem: food chains, food webs and ecological succession. Case studies of the following ecosystems:
  - a) Forest ecosystem
  - b) Grassland ecosystem
  - c) Desert ecosystem
  - d) Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

(6 lectures)

#### **Unit 3 : Natural Resources : Renewable and Non-renewable Resources**

- Land resources and land use change; Land degradation, soil erosion and desertification.
- Deforestation: Causes and impacts due to mining, dam building on environment, forests, biodiversity and tribal populations.
- Water : Use and over-exploitation of surface and ground water, floods, droughts, conflicts over water (international & inter-state).
- Energy resources : Renewable and non-renewable energy sources, use of alternate energy sources, growing energy needs, case studies.

(8 lectures)

#### **Unit 4 : Biodiversity and Conservation**

- Levels of biological diversity : genetic, species and ecosystem diversity; Biogeographic zones of India; Biodiversity patterns and global biodiversity hot spots
- India as a mega-biodiversity nation; Endangered and endemic species of India
- Threats to biodiversity : Habitat loss, poaching of wildlife, man-wildlife conflicts, biological invasions; Conservation of biodiversity : In-situ and Ex-situ conservation of biodiversity.
- Ecosystem and biodiversity services: Ecological, economic, social, ethical, aesthetic and Informational value.

(8 lectures)

#### **Unit 5 : Environmental Pollution**

- Environmental pollution : types, causes, effects and controls; Air, water, soil and noise pollution
- Nuclear hazards and human health risks
- Solid waste management : Control measures of urban and industrial waste.
- Pollution case studies.

(8 lectures)

#### **Unit 6 : Environmental Policies & Practices**

- Climate change, global warming, ozone layer depletion, acid rain and impacts on human communities and agriculture

- Environment Laws: Environment Protection Act; Air (Prevention & Control of Pollution) Act; Water (Prevention and control of Pollution) Act; Wildlife Protection Act; Forest Conservation Act. International agreements: Montreal and Kyoto protocols and Convention on Biological Diversity (CBD).
- Nature reserves, tribal populations and rights, and human wildlife conflicts in Indian context. (7 lectures)

### Unit 7 : Human Communities and the Environment

- Human population growth: Impacts on environment, human health and welfare.
- Resettlement and rehabilitation of project affected persons; case studies.
- Disaster management : floods, earthquake, cyclones and landslides.
- Environmental movements : Chipko, Silent valley, Bishnois of Rajasthan.
- Environmental ethics: Role of Indian and other religions and cultures in environmental conservation.
- Environmental communication and public awareness, case studies (e.g., CNG vehicles in Delhi).

(6 lectures)

### Unit 8 : Field work

- Visit to an area to document environmental assets: river/ forest/ flora/fauna, etc.
- Visit to a local polluted site-Urban/Rural/Industrial/Agricultural.
- Study of common plants, insects, birds and basic principles of identification.
- Study of simple ecosystems-pond, river, Delhi Ridge, etc.

(Equal to 5 lectures)

### Suggested Readings:

1. Carson, R. 2002. *Silent Spring*. Houghton Mifflin Harcourt.
2. Gadgil, M., & Guha, R. 1993. *This Fissured Land: An Ecological History of India*. Univ. of California Press.
3. Gleeson, B. and Low, N. (eds.) 1999. *Global Ethics and Environment*, London, Routledge.
4. Gleick, P. H. 1993. *Water in Crisis*. Pacific Institute for Studies in Dev., Environment & Security. Stockholm Env. Institute, Oxford Univ. Press.
5. Groom, Martha J., Gary K. Meffe, and Carl Ronald Carroll. *Principles of Conservation Biology*. Sunderland: Sinauer Associates, 2006.
6. Grumbine, R. Edward, and Pandit, M.K. 2013. Threats from India's Himalaya dams. *Science*, 339: 36-37.
7. McCully, P. 1996. *Rivers no more: the environmental effects of dams* (pp. 29-64). Zed Books.
8. McNeill, John R. 2000. *Something New Under the Sun: An Environmental History of the Twentieth Century*.
9. Odum, E.P., Odum, H.T. & Andrews, J. 1971. *Fundamentals of Ecology*. Philadelphia: Saunders.
10. Pepper, I.L., Gerba, C.P. & Brusseau, M.L. 2011. *Environmental and Pollution Science*. Academic Press.
11. Rao, M.N. & Datta, A.K. 1987. *Waste Water Treatment*. Oxford and IBH Publishing Co. Pvt. Ltd.
12. Raven, P.H., Hassenzahl, D.M. & Berg, L.R. 2012. *Environment*. 8th edition. John Wiley & Sons.
13. Rosencranz, A., Divan, S., & Noble, M. L. 2001. *Environmental law and policy in India*. Tripathi 1992.
14. Sengupta, R. 2003. *Ecology and economics: An approach to sustainable development*. OUP.
15. Singh, J.S., Singh, S.P. and Gupta, S.R. 2014. *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi.
16. Sodhi, N.S., Gibson, L. & Raven, P.H. (eds). 2013. *Conservation Biology: Voices from the Tropics*. John Wiley & Sons.
17. Thapar, V. 1998. *Land of the Tiger: A Natural History of the Indian Subcontinent*.
18. Warren, C. E. 1971. *Biology and Water Pollution Control*. WB Saunders.
19. Wilson, E. O. 2006. *The Creation: An appeal to save life on earth*. New York: Norton.
20. World Commission on Environment and Development. 1987. *Our Common Future*. Oxford University Press.

SUBJECT CODE:LEE101					
SUBJECT:BUSINESS COMMUNICATION					
Teaching Scheme/Week	Examination Scheme				
Theory Hours	IA Marks	EAMarks	CA Marks	Total Marks	Credits
02	40	60	-----	100	0

		Hours	Marks
<b>Chapter1</b>	<b>The Communication Process</b>	<b>06</b>	<b>15</b>
1.1	Definition and importance of communication.		
1.2	Elements of communication/process of communication		
1.3	Formal and informal communication-		
1.4	Types of communication- Flow of communication (vertical, horizontal, lateral),		
1.5	Barriers to effective communication		
1.6	How to overcome communication barriers		
<b>Chapter2</b>	<b>Oral communication</b>	<b>04</b>	<b>10</b>
2.1	Advantages and disadvantages		
2.2	Articulation and delivery		
2.3	Making speeches and presentations		
2.4	Telephone etiquettes		
2.5	Standard phrases used in hotels and restaurants.		
<b>Chapter3</b>	<b>Written communication</b>	<b>14</b>	<b>35</b>
3.1	Advantages & disadvantages		
3.2	Letter of enquiry, Letter of complaint, Letter of apology, Letter of order, Letter of application Accompanied by bio-data, Letter of resignation, Letter of collection & sales		
3.3	Writing a logbook		
3.4	Paragraph structure		
3.5	Report writing (incidents, visits)		
3.6	Memos, notices, circulars		
3.7	Notes Making		

#### REFERENCE BOOKS

- 1 Technical Communication, an & Sharma, Oxford University Press  
Principle sand Practice Meenakshi Raman, Sangeeta Sharma,  
Oxford University Press
- 2 Technical communication, Urmila Rai & S.M Rai, Himalaya Publication
- 3 Essentials of Technical Communication, Sunil Gokhale Himalaya

- Publication  
4 English Grammar & Composition, Wren & Martin, Orient Longman

SUBJECT CODE:LEE 101A					
SUBJECT:BUSINESS COMMUNICATION (PRACTICAL)					
Teaching Scheme/Week	Examination Scheme				
Practical Hours	IA Marks	EA Marks	CA Marks	Total Marks	Credits
04*	20	30	----	50	02

Sr.No	Topic
1	Self introduction.
2	Extempore onvarious topics
3	Presentations onvarious topics
4	Group Discussion.
5	Telephone etiquettes and hand ling telephones.
6	Practice of Standard phrases used in hotels and restaurants
7	Preparation for interviews.
8	Importance of Body language informal situations
9	Conduct of Meeting/briefing
10	Preparing Reports-Visit/incident
11	Presentation of Reports.
12	Formal Speeches
13	Reading
14	Vocabulary development
15	Debate
16	Book reading and Discussion



SUBJECT CODE:SEC101					
SUBJECT : PERSONALITY SKILLS FOR HOPITALITY INDUSTRY (THEORY)					
Teaching Scheme/Week	Examination Scheme				
Theory Hours	IA Marks	EA Marks			Credits
03	40	60	-	100	03

**Rationale:** The subject is designed to make students understand the concept and components of personality, thereby to apply the acquired knowledge towards achieving excellence in their respective academic careers.

		Hours	Marks
<b>Chapter 1</b>	<b>Introduction to personality development</b>	<b>0 2</b>	<b>0 2</b>
<b>Chapter 2</b>	<b>Communication Skills</b>	<b>06</b>	<b>08</b>
2.1 2.2 2.3	Modes of communication Verbal and Non-verbal communication Professional presentations( Types, Use of A/V aids)		
<b>Chapter 3</b>	<b>Impression Management</b>	<b>06</b>	<b>06</b>
3.1 3.2 3.3	Importance of Physical appearance and grooming ( presentable and attractive appearance, dressing, make up, poise and posture) Importance of Physical Fitness Body Language-Kinesics ,Haptics ,Vocalics ,Proxemics Chronemics		
<b>Chapter 4</b>	<b>Personality profile and Self development</b>	<b>06</b>	<b>12</b>
4.1 4.2 4.3 4.4 4.5 4.6	Elements of persnality Determinants of persnality Personal goal setting and action plan Areas of self developement Self Analysis (Self esteem, Motivation, Attitude) SWOT Analysis- Concept		
<b>Chapter 5</b>	<b>Time Management</b>	<b>04</b>	<b>04</b>
5.1 5.2 5.3	Time Planning <sup>1</sup> Time Quadrant model Time Wasters and Robbers		



<b>Chapter 6</b>	<b>Emotions</b>	<b>04</b>	<b>06</b>
6.1	What are emotions		
6.2	Emotions and personality		
6.3	Emotional Stability		
6.4	Emotional Maturity		
6.5	Emotional Intelligence		
<b>Chapter 7</b>	<b>Ethics</b>	<b>04</b>	<b>06</b>
7.1	Introduction to Ethics and values		
7.2	Code of ethics		
7.3	Ethics and positive Human relationship		
7.4	Function of values		
7.5	Sets of value for harmonious life		
<b>Chapter 8</b>	<b>Skill development for personality enrichment</b>	<b>08</b>	<b>08</b>
8.1	Identifying general and specific skills		
8.2	Human Skills		
8.3	Cognitive skills		
8.4	Technical skills		
8.5	Listening Skills		
8.6	Practical skills		
<b>Chapter 9</b>	<b>Stress Management</b>	<b>04</b>	<b>04</b>
9.1	Introduction		
9.2	Management strategies		
9.3	Stress managers		
9.4	Stress control		
<b>Chapter10</b>	<b>Frustration</b>	<b>04</b>	<b>04</b>
10.1	Introduction		
10.2	Causes of frustration		
10.3	Effects of frustration		
10.4	Solutions for avoiding frustration		

**REFERENCE BOOKS:**

<b>Sr.No.</b>	<b>Name of the Book</b>	<b>Author</b>	<b>Publisher</b>
1	Development of Generic Skills-I	K Sudesh	Nandu printers and publications
2	Development of Generic Skills-II	K Sudesh	Nandu printers and publications
3	Development of Generic Skills	M K MALKE	Central techno Publication
4	Basic Managerial skills for all Human learning	E H Mcgrath	Prentice Hall, India

SUBJECT CODE: SEC 101 A					
SUBJECT : PERSONALITY SKILLS FOR HOSPITALITY INDUSTRY (PRACTICAL)					
Teaching Scheme/Week	Examination Scheme				
Practical hours	IA Marks	EA Marks	CA Marks	Total Marks	Credits
04*	20	30	-----	50	02

**1. Development of proficiency in English**

- Practice on spoken communication skills and testing voice and accent, voice clarity, voice modulation and intonation.

**2. Personal Introduction**

- Developing an Understanding of Social Etiquettes.

**3. Business manners and etiquettes**

- To understand presenting oneself with finesse.

**4. Debate**

- To understand subject knowledge, oral and leadership skills.

**5. Group Discussion**

- To understand subject knowledge, oral and leadership skills.

**6. Extempore**

- To understand subject knowledge, oral and leadership skills.

**7. Body Language**

- Study of different pictorial expression of nonverbal communications and its analysis.

**8. SWOT Analysis**

- Self evaluation.
- Self discipline
- Recognition of one's own limits and deficiencies.
- Self Awareness.

**9. Presentation skills**

- To understand Preparing and delivery of presentation.

- 
- 
10. **Time Management techniques**
    - To understand Time Quadrant model and its use.
  11. **Stress management techniques**
    - To identify factors that cause stress through questionnaire/games.
  12. **Listening skills**
    - To improve note making and listening skills.
  13. **Organizing a seminar**
  14. **Guest lectures of hospitality professionals.**
  15. **Field visits**
    - Field visits to various sectors of the hospitality industry as a learning experience for students.
  16. **Report writing on guest lectures and**

**field visits Assignment**

1. Make a SWOT Analysis to identify your strength, weaknesses, opportunity and threats
2. Identify your areas of self development and plan a strategy to improve.
3. Identify qualities, traits of a eminent admired personality
4. Prepare a tree of life to understand personality determinants
5. Identify your values and prepare a code of ethics for yourself
6. Presentation on your role model in hospitality industry

## All Diploma Course Division of Hours In Year

Sr No	Course	Month	Days	Total lectures in Month	Total No of lecture in
1	Diploma in Merger and Acquisition	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
Sr No	Course	Month	Days	Total lectures in Month	Total No of lecture in
2	Diploma in Air and Space Law	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
Sr No	Course	Month	Days	Total lectures in Month	Total No of lecture in
3	Diploma in Media Law	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
Sr No	Course	Month	Days	Total lectures in Month	Total No of lecture in
4	Diploma in E-Learning, E-Litigation, and LPO	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
Sr No	Course	Month	Days	Total lectures in Month	Total No of lecture in
5	Diploma in Social	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	

	Legislation	January	26 Days (2 Lectures)	52	368 hr.
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
<b>Sr No</b>	<b>Course</b>	<b>Month</b>	<b>Days</b>	<b>Total lectures in Month</b>	<b>Total No of lecture in</b>
6	Diploma in Anti-Corruption Laws	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
<b>Sr No</b>	<b>Course</b>	<b>Month</b>	<b>Days</b>	<b>Total lectures in Month</b>	<b>Total No of lecture in</b>
7	Diploma in Foreign Investment Laws	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
<b>Sr No</b>	<b>Course</b>	<b>Month</b>	<b>Days</b>	<b>Total lectures in Month</b>	<b>Total No of lecture in</b>
8	Diploma in Alternative Dispute Resolution Systems	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
<b>Sr No</b>	<b>Course</b>	<b>Month</b>	<b>Days</b>	<b>Total lectures in Month</b>	<b>Total No of lecture in</b>
9	Diploma in Intellectual Property Laws	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
<b>Sr No</b>	<b>Course</b>	<b>Month</b>	<b>Days</b>	<b>Total lectures in Month</b>	<b>Total No of lecture in</b>
		August	26 Days (2 Lectures)	52	
		September	26 Days (2 Lectures)	52	

10	Diploma in Corporate Laws	October	26 Days (2 Lectures)	52	368 hr.
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
<b>Sr No</b>	<b>Course</b>	<b>Month</b>	<b>Days</b>	<b>Total lectures in Month</b>	<b>Total No of lecture in</b>
11	Diploma in Cyber Laws	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
<b>Sr No</b>	<b>Course</b>	<b>Month</b>	<b>Days</b>	<b>Total lectures in Month</b>	<b>Total No of lecture in</b>
12	Diploma in Taxation Laws	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
<b>Sr No</b>	<b>Course</b>	<b>Month</b>	<b>Days</b>	<b>Total lectures in Month</b>	<b>Total No of lecture in</b>
13	Diploma in Labour Laws	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	
<b>Sr No</b>	<b>Course</b>	<b>Month</b>	<b>Days</b>	<b>Total lectures in Month</b>	<b>Total No of lecture in</b>
14	Diploma in Human Rights	August	26 Days (2 Lectures)	52	368 hr.
		September	26 Days (2 Lectures)	52	
		October	26 Days (2 Lectures)	52	
		December	15 Days (2 Lectures)	30	
		January	26 Days (2 Lectures)	52	
		February	24 Days (2 Lectures)	48	
		March	26 Days (2 Lectures)	52	
		April	15 Days (2 Lectures)	30	



As a school of philosophy, Yoga is a way of life, and incorporates its own epistemology, metaphysics, ethical practices, systematic exercises and self-development techniques for body, mind and spirit. Yoga and meditation when practiced together strengthen the mind body connection, improving overall fitness and well-being. Many styles of yoga combine meditation with the physical routines, which use controlled breathing throughout the yoga poses. Meditation is practiced by relaxing, clearing your mind and concentrating on controlled breathing. Both yoga and meditation, when used consistently, have proven health benefits. Meditation is also an effective stress reducer that is used to help reduce anxiety, panic disorders and agoraphobia, an anxiety disorder commonly seen in student life.

### **Unit I**

1. Overview of history of yoga, its origin and claimed benefits
2. Aasana alignment and the human anatomy and physiology explained in connection with yoga techniques like pranayama and meditation teaching methodology with practice

### **Unit II**

3. The science of meditation and current scientific research
4. What is meditation? Techniques of meditation
5. Different kinds of yoga
6. Overview of current styles, forms and purposes of meditation
7. Techniques for cultivation of inner calm, insight and wisdom through Yoga and meditation

### **References**

1. Jeevanved. Shri Shri Anand Murtii. Anand Marg Publ. 1955
2. Yoga psychology. Shri Prabhat Ranjan Sarkar; Anand Marg Publ., Calcutta, India, ISBN 10 817251138; 1990.
3. Yoga for health. Avd Anandmitra, 1999.

**BBT 210: General Course II: Elective; Option I – Human Values  
General Course II; 2 Credits,**

Values are socially accepted norms to evaluate objects, persons, and situations that form part and parcel of sociality. A value system is a set of consistent values and measures. Knowledge of the values are inculcated through education. It contributes in forming true human being, who are able to face life and make it meaningful. There are different kinds of values like, ethical or moral values, doctrinal or ideological values, social values and aesthetic values. Values can be defined as broad preferences concerning appropriate courses of action or outcomes. As such, values reflect a person's sense of right and wrong or what "ought" to be.

The objectives of the course are:

- To lay a strong foundation in value education.
- To create awareness towards realizing self
- To inculcate in students the spirit of social responsibility
- To add value to human relations.
- To make students understand Salient values for life such as truth, commitment, honesty , integrity etc.

**Unit I: Yam – Satya, Ahinsa, Brahmacharya, Asteya, Aparigraha**

Value education-its purpose and significance in the present world –Holistic living – Balancing the outer and inner –Body, Mind and Intellectual level- Duties and responsibilities. Environment and Ecological balance –interdependence of all beings – living and non-living. The binding of man and nature – Environment conservation and enrichment.

**Unit II: Niyam – Soch, Santosh, Tapa, Swadhyaya, Ishwar Pranidhan**

- Social Evils – Corruption, Cyber crime, Terrorism – Alcoholism, Drug addiction – Dowry – Domestic violence – untouchability – female infanticide – atrocities against women-How to tackle them.
- Values for life : truth, commitment, honesty and integrity, forgiveness and love, empathy and ability to sacrifice, care, unity , and inclusiveness, Self esteem and self confidence, punctuality – Time, task and resource management – Problem solving and decision making skills- Interpersonal and Intra personal relationship – Team work – Positive and creative thinking

**References:**

1. M.G.Chitakra: Education and Human Values, A.P.H.Publishing Corporation, New Delhi, 2003
2. Chakravarthy, S.K. : Values and ethics for Organizations: Theory and Practice, Oxford University Press, New Delhi , 1999.
3. Das, M.S. & Gupta, V.K. : Social Values among Young adults: A changing Scenario, M.D. Publications, New Delhi, 1995
4. Bandiste, D.D.: Humanist Values: A Source Book, B.R. Publishing Corporation, Delhi, 1999

**BBT 309: General Course III, Elective; Option I - Communication Skills and Personality Development** **Total 30 L**  
**General Course III; 2 Credits**

Preparation of presentation –principles and presentation technique (what, how, for whom etc).	3 L
Nonverbal communication during presentation – how to manage stress, what to do with hands, legs ..., activating the audience with nonverbal communication	3 L
Verbal communication –argumentation, usable and unsuitable phrases	2 L
Communication skills – listening, empathic reaction, how to question, stealing the show, opening door question	3 L
Conflict situation solving, attack from the audience – communication skills as a work experience, vicious circle of attack and defence	2 L
Work with audience – ice-breaking, get them in the mood, work with emotions, visualization tools, nonstandard situations	3 L
Improvisation and unprepared presentations	2 L
Paradigm of human cooperation – why there could be problems to start the communication and what to do with it	3 L
Defense against manipulation, how to say NO, stress management	3 L
Image and etiquette	2 L
Basics of Personality (Definationetc), Theories of Personality	3 L
Development	
Analysing Strengths & weaknesses, Body Language & Preparation of Self Introduction	3 L

**MBT 301: Environmental Biotechnology****Total****Core Course- Theory; 3 Credits****45L****UNIT I : Environment and Waste water treatment technology**

- 1 Basic concepts**, Its ingredients – soil, water, air, biota and non-biota and its significance **3**
- 2 Environmental issues, Environmental pollution** - Types, measurement, effects on health & food, Air pollution and its control through Biotechnology, Water pollution and its control, Soil pollution sources, pesticides, heavy metals and agrochemical and its control, Noise pollution: effects and control, Degradation of Xenobiotic compounds in Environment **4**
- 3 Detection and control of micro-organisms** in environmental fresh water, in source and drinking water; Potable and non-potable water Biosensors - types and applications in environmental pollution detection and monitoring **4**

**UNIT II**

- 4 Biological treatment:** stabilization pond, aerated lagoon, activated sludge process, trickling filter anaerobic treatment **2**
- 5 Sewage and waste water treatments systems;** Primary, secondary and tertiary treatments; Measurement of treatment efficiencies **3**
- 6 Bioreactors for waste water treatments;** Reactors types and design; Reactors in series; Development and optimization of membrane bioreactor process for use in sanitary and industrial sewage treatment **3**
- Biological treatment:** stabilization pond, aerated lagoon, activated sludge process, trickling filter anaerobic treatment **2**

**UNIT III**

- 7 Global Environmental Issues** **4**  
Solid waste Management, physicochemical characters, hazardous and non hazardous wastes, bio-degradable and non-biodegradable wastes, collection and transport of solid waste, composting, vermin-composting and methane production.
- 8 Global warming:** climate change, ozone depletion, UV- B and green house effects, acid rain, its effects **3**
- 9 Biotechnological approaches for solid waste management** **3**
- 10 Carbon credit** **1**

**Unit IV****Biotechnological approach for improving the Environment:**

- 11 Characteristics of industrial effluents, Conventional treatments, kinetics of biodegradation of waste, Advances in aerobic and anaerobic treatments, genetically modified organisms for improving the** **2**

environment, Techno-economic feasibility of conversion of waste into energy.

- |           |                                                                                                                                                                                                                                                                                    |          |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| <b>12</b> | Environmental pollution control- Bioremediation, Bioaugmentation, Biostimulation and Phytoremediation                                                                                                                                                                              | <b>2</b> |
| <b>13</b> | Desalination technique: Reverse osmosis, quality of input and output water, cost effectiveness, byproducts of desalination and industrial application                                                                                                                              | <b>2</b> |
| <b>14</b> | Biotechnological approach for improving the Environment:                                                                                                                                                                                                                           | <b>2</b> |
| <b>15</b> | Characteristics of industrial effluents, Conventional treatments, kinetics of biodegradation of waste, Advances in aerobic and anaerobic treatments, genetically modified organisms for improving the environment, Techno-economic feasibility of conversion of waste into energy. | <b>2</b> |
| <b>16</b> | Environmental pollution control- Bioremediation, Bioaugmentation, Biostimulation and Phytoremediation                                                                                                                                                                              | <b>2</b> |

**References:**

1. Rittamann B. E. and Mc Carty P. L. (2001), Environmental Biotechnology: Principles and Applications, International Edition, McGraw-Hill, New York
2. Methods of Air Sampling & Analysis (1977), 2nd Edition –APHA intersociety Committee APHA, Washington D.C
3. Standard Methods for the Examination of Water and Wastewater (1986) 15th Edition APHA-AWWA-WPCF
4. Brunner R.C., (1989), Hazardous Waste Incineration, McGraw Hill Inc.
5. Milton Wainwright, An Introduction to Environmental Biotechnology, Kluwer Academic Publishers, Boston.Hardbound, 1999.

**BBT 508 : Open Course V, Elective; Option II - Biodiversity  
Open Course V; 2 Credits**

**Total  
30L**

**UNIT I**

- |          |                                                                                                                            |            |
|----------|----------------------------------------------------------------------------------------------------------------------------|------------|
| <b>1</b> | <b>Introduction:</b> Plant Diversity: Introduction- definition, species diversity, ecosystem diversity, genetic diversity, | <b>2 L</b> |
| <b>2</b> | The species & Individual in the Ecosystem                                                                                  | <b>2 L</b> |
| <b>3</b> | Biodiversity and major Biomes of World                                                                                     | <b>1 L</b> |
| <b>4</b> | Species extinction, population, individuals and genetic diversity                                                          | <b>2 L</b> |
| <b>5</b> | Loss of biodiversity and its ecological significance                                                                       | <b>2 L</b> |

6	Extinct and Threatened species	1 L
7	Threats to biodiversity	1 L
8	Agrobiodiversity	2 L
9	The Global biodiversity strategy and its significance for sustainable Agriculture	2 L

## UNIT II

10	<b>Conservation of Biodiversity:</b> Value of biodiversity : consumptive use, productive use, social, ethical, aesthetic and option values	2 L
11	Biodiversity at global, national and local levels	1 L
12	Hot-spots of biodiversity	1 L
13	Endangered, and endemic Species; threatened species; Categories of IUCN,threatened species of plants and animals in Northeast India, Red data books	3 L
14	Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity	2 L
15	Future strategy for the conservation of biological diversity	2 L
16	Biodiversity conservation: Indian Scenario	1 L
17	Biodiversity conservation:value addition through Biotechnology	2 L

## References

- 1 Bharucha Erach, The Biodiversity of India, Mapin Publishing Pvt. Ltd., Ahmedabad –380 013, India, Email:mapin@icenet.net (R)
- 2 U Kumar and Mahendra J A, Biodiversity Principles and conservations, (2007), Agrobios India Pvt. Ltd., Jodhpur
- 3 Kevin J Gaston and John I Spicer, Biodiversity an introduction (2004), Blackwell Publications, USA
- 4 G. K. Singh, Biodiversity, Taxonomy and Ecology, (2009), ALP Books, New Delhi
- 5 Heywood, V.H &Waston, R.T. 1995. Global Biodiversity Assessment. Cambridge Univ. Press 1140p.



**BBT 209: Open Course II: Elective; Option II - Gardening and Landscaping, Open Course II; 2 Credits**

**UNIT I**

- 1 Scope and objectives of gardening
- 2 Style of gardens: Formal, Informal
- 3 Types of gardens: English, Mughal and Japanese
- 4 Components of garden
- 5 Planning of Indoor /outdoor gardens:
- 6 Residential, Larger Home Garden, Roof Garden, Terrace Garden, Children's garden, School and Institutional Garden, Park, Industrial garden, Housing complex, Hanging garden
- 7 Nursery production and management
- 8 Propagation of ornamental plants by seeds, layering, cuttings, grafting, budding & tissue culture.
- 9 Annuals & Biennials: Important Genera and Species, their importance in garden designs
- 10 Orchids: Environment, propagation, potting & compost, nutrient supply, watering important species

**UNIT II**

- 1 Landscape Design: Definition, objectives and scope, Landscape elements of construction and designing of Residential, Commercial, Bungalow, Public area, Hotel, Educational Institute and religious places
- 2 Computer application in landscape
- 3 Palms and Cycas: Characteristics, propagation, culture, pest and disease, importance and uses, genera and species of palms and Cycas.
- 4 Bamboo and conifers: Genera, species and varieties Shrubs: Different types
- 5 Climbers and Bougainvillea: Different types Hedges for gardens & farms
- 6 Lawns & Grasses: Planting methods, maintain Herb garden, Rose garden, Bog garden, Sunken garden, Topiary garden, Kitchen garden, Paved garden, Dish garden, Rock garden, Terrace garden, Water garden & Bottle garden (Terrarium)
- 7 Field Visit: Visit to various gardens (public and private) and plant nurseries

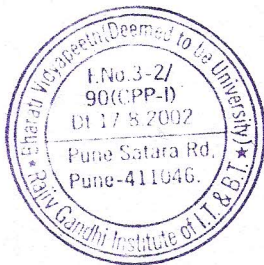
**References:**

- 1) Christine Wein-Ping Yu 1987. Computer-aided Design: Application to ConceptualThinking in Landscape Architecture. amazon.com
- 2) Arora J S ( 1990). Introductory Ornamental Horticulture, Kalyani Publication.
- 3) Bailey L H 1901. The Standard cyclopedia of Horticulture, volume ,2 and 3 Macmillan Publications.
- 4) Bose T K and Mukerjee D 1987, Gardening in India, Oxford Book House
- 5) Sue Wilson (Editor) E & F. N. Spon. 2001 Guidelines for Landscape and Visual Impact Assessment.

**BBT 309: General Course III, Elective; Option I - Communication Skills  
and Personality Development  
General Course III; 2 Credits**

**Total  
30 L**

Preparation of presentation –principles and presentation technique (what, how, for whom etc).	3 L
Nonverbal communication during presentation – how to manage stress, what to do with hands, legs ..., activating the audience with nonverbal communication	3 L
Verbal communication –argumentation, usable and unsuitable phrases	2 L
Communication skills – listening, empathic reaction, how to question, stealing the show, opening door question	3 L
Conflict situation solving, attack from the audience – communication skills as a work experience, vicious circle of attack and defence	2 L
Work with audience – ice-breaking, get them in the mood, work with emotions, visualization tools, nonstandard situations	3 L
Improvisation and unprepared presentations	2 L
Paradigm of human cooperation – why there could be problems to start the communication and what to do with it	3 L
Defense against manipulation, how to say NO, stress management	3 L
Image and etiquette	2 L
Basics of Personality (Definationetc), Theories of Personality	3 L
Development	
Analysing Strengths & weaknesses, Body Language & Preparation of Self Introduction	3 L



*A. Shaitch*  
PRINCIPAL  
Bharati Vidyapeeth  
(Deemed to be University)  
Rajiv Gandhi Institute of I.T. & B.T.  
Pune Satara Road, Pune - 411 046.



## Grant-in-Aid Agreement

This **Grant-in-Aid Agreement ("GIA Agreement")** is made and entered into on this **30** day of **June**, 2020 ("**Effective Date**"),

BETWEEN

**Tata Power Community Development Trust**, a Trust duly registered under the Bombay Public Trusts Act 1950, vide Registration number E - 25632 with its registered office at Bombay House, 24, Homi Mody Street, Mumbai 400001(hereinafter referred to as **TPCDT** which expression shall unless repugnant to the context thereof be deemed to mean and include its successors and assigns), of the ONE PART;

AND

**Bharati Vidyapeth( Pune )**, a non-profit organization registered as **Registered with Charities Commissioner**, registration number **90186** under the **Societies Registration Act 1860** with its registered office **Social Sciences Centre, FIELDS Dr. G. R. Rathod** having current and valid Income tax 12AA registration certificate for tax exemption and 80G tax Deduction certificate, hereinafter referred to as **Bharati Vidyapeth( Pune )** which expression shall unless repugnant to the context thereof be deemed to mean and include its successors and permitted assigns), of the OTHER PART.

(Hereinafter **TPCDT** and **Bharati Vidyapeth( Pune )** shall be individually referred to as "**the Party**" and collectively as "**the Parties**")

### WHEREAS:

- a) TPCDT is, inter alia, engaged in non-profit & community development initiatives **under 5 thrust areas namely Education, Health & Sanitation, Livelihood & Employability, Water and Financial Inclusion**, and is a key facilitator that supports developmental projects across identified locations to create and offer sustainable solutions to the diverse challenges faced by local communities.
- b) **Bharati Vidyapeth( Pune )** is a non-profit organization based out of **Pune (Maharashtra)** working in the field of **Livelihood & Skill Building**. The NGO works in the states of **Maharashtra**. The mission is to **Social transmission through dynamic education**. The average annual gross contribution received by the NGO for last three years amount Rs 5Cr. The NGO operates at locations such as Social Sciences Centre, BharatiVidyapeeth Deemed University, Erandawane, Pune-411038 in the thrust areas of Education, Health and livelihood and employability.



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- c) ***Bharati Vidyapeth( Pune )*** has submitted a proposal dated 14-May-2020 to TPCDT for conducting ***Micro Enterprises for Women (DHAAGA)*** and same forms part of GIA Agreement and is marked as **Annex - 3**
- d) TPCDT is desirous of being partner in the Intervention to be implemented by Bharati Vidyapeth( Pune ) The scope of the intervention and funding are as detailed and forms part of this GIA Agreement
- e) ***Bharati Vidyapeth( Pune )*** would not sublet or delegate any of the project activities as part of this GIA Agreement.
- f) Believing the aforesaid to be true, and in furtherance of its Mission & Objectives, TPCDT has agreed to engage ***Bharati Vidyapeth( Pune )***, **through this GIA Agreement**, as the implementing agency to ***Micro Enterprises for Women (DHAAGA)***

**NOW THEREFORE**, in consideration of the mutual covenants, terms and conditions set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties, agree as follows:

#### **1. INTERVENTION & ADMINISTRATION**

- a) **Intervention Title:** *Micro Enterprises for Women (DHAAGA)*
- b) **Scope:** *Women will be linkages for financial resources with Government scheme.*
- c) **Project Objectives:** *400 women from Mulshi block will be financially independent* **FIELD15 , Sec-B,4)**
- d) **Project Timelines:** *From 01-Apr-2020 to 31-Mar-2021*
- e) **Name of Collaborating Organizations:**
- f) ***Bharati Vidyapeth( Pune )*** is the implementing organization for this Project.
- g) TPCDT is the non-profit organization, which would be funding this Project, by way of Grant-in-Aid in furtherance of developmental objects.

#### **2. PROJECT LOCATION:**

- a) State & District ***Maharashtra & Pune***
- b) Revenue Block ***Mulshi***
- c) Gram Panchayat or Ward ***Maley***
- d) No of Villages or Ward Mohallas **15** covered
- e) Beneficiaries potentially covered through this project **400 (Refer Annex-3,Sec-B-6)**
- f) SC & ST Beneficiaries as **20 %** of above (No.), covered through this intervention.

#### **3. THE WORKING RELATIONSHIP:**

The bipartite collaboration would be guided by the following mutually agreed principles:

- a) All the parties shall ensure transparency and accountability in all activities undertaken as a part of the intervention.
- b) The parties shall encourage adoption of a scientific, rational, democratic, bottoms-up, community needs-based approach to the issues addressed.
- c) The parties shall encourage the use of technology-based interventions for higher impacts, outreach and outcomes.
- d) Each stakeholder to designate Single Point of Contact (SPoC) for effective coordination during the project execution.

#### 4. **INTERVENTION TERM AND WORKPLAN**

- a) The intervention shall be implemented in accordance with GIA Agreement and the intervention proposal set out in Annexure-3.
- b) **Bharati Vidyapeth( Pune )** shall forthwith notify TPCDT in writing in the event of the occurrence of any event that may cause delay in achieving the intervention delivery milestone.
- c) The terms of the intervention under this GIA Agreement of FY-19.
- d) The work plan in terms of (NGO name) deliverables with timelines mentioned in (Annexure-3, Sec B-8)

#### 5. **INTERVENTION BUDGET/PARTNERS NAME & PAYMENT TERMS:**

- a) TPCDT has sanction to **Bharati Vidyapeth( Pune )** a Grant-in-Aid of **1300000.0** (Indian Rupees **Thirteen Lakhs only** for the Project to be undertaken by **Bharati Vidyapeth( Pune )** in relation to Micro Enterprises for Women (DHAAGA) as "Authorized/Approved Activities")
- b) TPCDT shall deploy financial resources for the Term of this GIA Agreement up to a total cost of INR **1300000.0** (Indian Rupees **Thirteen Lakhs only** only). (**Annex-3 Sec-B-8**) The **Bharati Vidyapeth( Pune )** agrees that the project management charges shall not exceed 10% of the total Grant-in-Aid (INR) Amount, and to that effect satisfies TPCDT.
- c) It is understood and agreed between the Parties that TPCDT's Grant-in-Aid to **Bharati Vidyapeth( Pune )** , is with respect to the intervention as per KPIs mentioned in (**Annex-2**)
- d) Compliances & Schedule of Payments for Total Grant Amount of Rs: **1300000.0**

Installment number	Installment payment (in ₹)	Installment Amount	Key Milestone (Annex-1)
1	25%	325000.0	On signing of GIA Agreement
2	30%	390000.0	On completion of agreed key deliverables mentioned in Annexure-1 and 80% utilization of 1st installment.
3	35%	455000.0	On Completion of 50% of Key performance indicators [Midline study] (Refer KPIs annex-2) and 80% utilization of 2nd installment.
4	10%	130000.0	Completion of all initiatives, 80% utilization of 3rd installment, achieving 100% KPIs and submission of end line report.

- a) **Bharati Vidyapeth( Pune )** shall submit expenditure statements, indicating usage of 80% of first and consequent Grant installments, during course of the project based on actuals.
- b) Any cost escalation of the Project beyond the Grant in Aid Amount, committed hereinabove shall be borne by **Bharati Vidyapeth( Pune )**
- c) The pre-commissioning process shall start immediately after accepting and signing of the GIA Agreement between the Parties. Work shall be completed as per milestones and timelines defined in "Scope" part of this document jointly planned and agreed by both parties.
- d) **Bharati Vidyapeth( Pune )** shall submit program report for the immediate previous month in the reporting cycle by 5<sup>th</sup> of the month, along with relevant supporting documents to TPCDT.

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- e) **Bharati Vidyapeth( Pune )** shall submit financial report including expenses incurred for the immediate previous month in the reporting cycle of 1st to 31st calendar month, along with relevant supporting documents to TPCDT
- f) If TPCDT does not receive two consecutive progress reports (both programmatic and financial)it shall be at liberty to hold the project or hold further release of Grant-in-Aid Assistance agreed by TPCDT
- g) **Bharati Vidyapeth( Pune )** shall refund any unutilized Grant, to TPCDT at the end of a Project. Both Parties may discuss possibility of, and TPCDT may approve appropriate utilization of unutilized grants in a manner agreed by both Parties, with set timelines
- h) TPCDT has the sole authority to hold, stop or extend the Project timeline and Grant-in-Aid Amount.
- i) TPCDT provides Grants based on funding received annually from its Funders. In cases of multiyear programs, where the payments cross a financial year (31 March), the Grant Amounts made post this period may vary, depending on changes in funds and program directions/focus.

#### 6. **REPRESENTATIONS & WARRANTIES:**

- a) **Mutual Representations and Warranties** - Each Party represents and warrants to the other Party that:
  - i. It has the full right, power and authority to enter into this GIA Agreement, to Grant-in-Aid the rights Grant-in-Aided hereunder and to perform its obligations hereunder;
  - ii. The execution of this GIA Agreement by its representative whose signature is set forth at the end hereof has been duly authorized by all necessary action of the Party; and
  - iii. When executed and delivered by such Party, this GIA Agreement will constitute the legal, valid and binding obligation of such Party, enforceable against such Party in accordance with its terms.
  - iv. For hardware and software, ***Bharati Vidyapeth( Pune )*** is solely responsible and accountable owner of the same.
  - v. The product warranties, any maintenance, repair or damage will be tracked by ***Bharati Vidyapeth( Pune )***
- b) **Representations and Warranties of *Bharati Vidyapeth( Pune )***

***Bharati Vidyapeth( Pune )*** **represents** and warrants to TPCDT that: The execution, delivery and performance of this GIA Agreement do not and shall not be inconsistent and violate any agreed obligation of ***Bharati Vidyapeth( Pune )*** ;

- i. The Grant-in-Aid shall be directed only towards Authorized/ Approved Activities as set out;
- ii. From time to time, Mr./Ms. **Dilip Kawade** or any other nominee of TPCDT shall be invited to respective field locations or project locations, to undertake field visits, along with employees/representative of ***Bharati Vidyapeth( Pune )*** engaged in the Project
- iii. It shall furnish to TPCDT, copies of all necessary permissions and other necessary documents received from relevant government authorities and departments, conveying permission/ no-objection for covering the selected Project;
- iv. The resources received for this project shall be used for the Project objectives only and not for any commercial use. The resources shall be used, maintained and treated as a value to the respective projects;

#### 7. **USE OF TATA POWER LOGO FOR BRANDING:**

- g) This Intervention is being deployed under Tata Power Livelihood & Skill Building



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CSR Intervention. The logo of Tata Power and brand name of intervention can be used appropriately by **Bharati Vidyapeth( Pune )** within the scope of this intervention with mutual consent of both parties.

#### 8. NO LIABILITY

- a) **Bharati Vidyapeth( Pune )** shall comply with all laws, regulations and also arrange to provide all the necessary approvals for carrying out all the plans agreed between the parties, for ensuring compliance of all applicable law, statutes for deployment as mentioned in this GIA Agreement. TPCDT shall not be liable in any manner whatsoever for any non-compliance in respect of the applicable laws, regulations and in the event of any adverse claim of whatsoever nature arising thereof, the entire burden shall be strictly borne by **Bharati Vidyapeth( Pune )**.
- b) Nothing in this GIA Agreement is intended or shall be construed to authorize either Party to create or assume any liability or indebtedness of any kind in the name of, or on behalf of the other Party or to act for or be responsible for the performance of the other Party in any manner except and to the extent expressly provided in this GIA Agreement. Notwithstanding anything contrary contained herein the parties shall not be obliged to incur any liability in case of any of the parties shall without prior specific approval/ consent of the other parties' credit or accept any contract binding upon the parties other than as envisaged in this GIAA.

#### 9. CONFIDENTIALITY

The parties agree that all data which is transmitted or communicated by either party to the other party shall in all cases be held in confidence by the Receiving Party and not disclosed to any third party unless written consent of Disclosing Party is first obtained, except that, Receiving Party has the right to disclose such information to its own employees, consultants and representatives who are bound by an obligation of confidentiality and who need to know such information for the purposes specified hereinabove. The Receiving Party agrees that it shall not use the confidential data for any purpose(s) other than the ones specified herein. However, the Receiving Party shall not be required to maintain confidential or be restricted in its use of any data which,

- i. Was in public domain at the date of disclosure to Receiving Party
- ii. Becomes public knowledge during the term of this GIA Agreement without breach of this GIA Agreement
- iii. Receiving Party can show that it was in its possession prior to disclosure by Disclosing Party, and
- iv. Disclosure of which is required by law or by order of a court of competent jurisdiction. The obligation as to confidentiality shall survive for 5 years post termination/ expiry of this GIA Agreement.

#### 10. INTELLECTUAL PROPERTY RIGHTS (IPR)

With respect to the services rendered under this GIA Agreement, the Parties agree that:

- a) All IPR arising out of this GIA Agreement and the data, information or activities therein shall solely vest with TPCDT. Usage of any such data or information that involves the IPR for TPCDT shall amount to an infringement if such usage is not authorized in writing.
- b) **Bharati Vidyapeth( Pune )** agrees that it shall comply with all the relevant laws and shall not infringe in any IPR in the course of performing its obligations under this GIA Agreement.

- c) **Bharati Vidyapeth( Pune )** agreed to indemnify/ keep indemnified **TPCDT** from all claims, suits, actions, losses, penalties or liabilities arising out of a breach of the clauses above.

#### **11. ETHICAL BEHAVIOUR:**

- a) **Bharati Vidyapeth( Pune )** represent and warrant that it has conducted and shall conduct its business in accordance with the highest ethical standards and it shall comply with all applicable laws in the performance of its obligations under this **GIA Agreement**, including but not limited to, laws dealing with ethical business practices.
- b) If, at any time during the term of this **GIA Agreement**, **Bharati Vidyapeth( Pune )** is informed or information comes to its attention that it or any of its affiliates is or may be in violation of any applicable law (or if it is so determined by any court, tribunal or governmental agency or authority), **Bharati Vidyapeth( Pune )** shall immediately take all appropriate steps (including any reasonable requests by **TPCDT**) to remedy such violation and comply with such a law in all respects. Where such violation occurs and is not remedied **TPCDT** may terminate this GIA Agreement with immediate effect.
- c) **Bharati Vidyapeth( Pune )** shall establish and maintain all proper records (including accounting records) required by applicable law and shall make such records available to **TPCDT**, if requested to do so. A certified utilization certificate shall be issued at the end of any project.
- d) **Bharati Vidyapeth( Pune )** acknowledges of having read Tata Code of Conduct, accessed from Tata Power company website URL: <https://www.tatapower.com/pdf/aboutus/Tata-Code-Power-of-Conduct.pdf> **Bharati Vidyapeth( Pune )**, as CSR Partner of Tata Power, acknowledges to comply with the guidelines given therein as part of upholding highest ethical standards during the deployment of this Project.

#### **12. TERM, EXTENSION&TERMINATION/EXPIRY:**

- a) This GIA Agreement shall commence as of the Effective date and shall remain in force until **31-Mar-2021**. Unless terminated earlier in accordance with the terms of this GIA Agreement. The Parties may renew this GIA Agreement on 'no cost to **TPCDT**' basis for a mutually agreed period if the situation so warrants, and the extension of period of agreement envisaged herein occasioned for the reasons not attributable to **Bharati Vidyapeth( Pune )**, for its non-performance or delay in performance.
- b) **TPCDT** shall have the right to terminate this GIA Agreement immediately, for any reason whatsoever without assigning any reason thereof.
- c) In the event of termination, the **Bharati Vidyapeth( Pune )** shall refund the unspent residual amount to **TPCDT**.

#### **13. WAIVER:**

No failure or delay by a party to exercise any right or remedy provided under this GIA Agreement or by law shall constitute a waiver of that or any other right or remedy, nor shall it preclude or restrict the further exercise of that or any other right or remedy. No single or partial exercise of such right or remedy shall preclude or restrict the further exercise of that or any other right or remedy.

#### **14. VARIATION:**

Both the Parties agree and confirm that the terms and conditions contained in this GIA Agreement may be changed / altered through written mutual consent; at any point, during course of the Agreement.

No variation of this GIA Agreement shall be effective unless it is in writing and signed by the Parties (or their

authorised representatives).

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**15. SEVERANCE:**

If any court or competent authority finds that any provision of this GIA Agreement (or part of any provision) is invalid, illegal or unenforceable, that provision or part-provision shall, to the extent required, be deemed to be deleted, and the validity and enforceability of the other provisions of this GIA Agreement shall not be affected.

**16. THIRD PARTY RIGHTS:**

No person other than a Party to this GIA Agreements shall have any rights to enforce any term of this GIA Agreement.

**17. NO PARTNERSHIP OR AGENCY:**

Nothing in this GIA Agreement is intended to, or shall be deemed to, establish any partnership or joint venture between the Parties, constitute either Party the agent of the other Party, nor authorise either Party to make or enter into any commitments for or on behalf of the other Party.

**18. NOTICES:**

All notices related to this GIA Agreement which are permitted hereunder shall be in writing and deemed to have been duly given/served if delivered personally or sent by facsimile transmission (with answerback received) or overnight express or by registered mail or certified mail, postage prepaid. All notices shall be sent to the addresses mentioned in the title clause or to such other address as the Parties may designate from time to time in writing.

**19. FORCEMAJURE:**

- a) Neither Party shall be liable to the other for any delay or failure in the performance by it of any obligation under this GIA Agreement to the extent affected, delayed or prevented by an event of Force Majeure, provided that the Party that is affected by the Force Majeure shall provide notice thereof to the other Party as soon as practicable, but in any event not later than 7 [seven] days from the time which the affected Party knew or should reasonably have known of the commencement of the event of Force Majeure.
- b) The affected Party shall use its reasonable endeavours to mitigate the adverse effects of the Force Majeure event affecting it and shall seek reasonable alternative means to resume the Services, to the extent not affected by the event of Force Majeure. The affected Party shall provide to the other Party reasonable details as requested by the other Party regarding the nature of the Force Majeure event. Neither Party shall be entitled to make any claim on the other for any fees, costs, expenses, losses or damages incurred or suffered as a result of an event of Force Majeure.
- c) If any event of Force Majeure continues beyond a period of one month, either Party may terminate this GIA Agreement.

**20. ASSIGNMENT AND OTHER DEALINGS PROHIBITED:**

This GIA Agreement is personal to the Parties and no Party shall, without the prior written consent of the other Party (such consent not to be unreasonably conditioned, withheld or delayed), assign, transfer, or deal in any other manner with this GIA Agreement or any of its rights and obligations under or arising out of this GIA Agreement, or purport to do any of the same. No Party shall sub-contract or delegate in any manner any



or all of its obligations under this GIA Agreement to any third party or agent. Each Party that has rights under this GIA Agreement is acting on its own behalf and not for the benefit of another person.

**21. ARBITRATION:**

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Any dispute or differences arising out of or in connection with this GIA Agreement (including the validity or interpretation hereof) shall be referred to the sole arbitrator to be nominated by Parties and the arbitration shall be governed by the provisions of the Indian Arbitration & Conciliation Act, 1996 or any law relating to arbitration in force at the time of such reference. The venue of the arbitration shall be Mumbai. The parties submit to the exclusive jurisdiction of the Courts of Mumbai.

**22. GOVERNING LAW AND JURISDICTION:**

This GIA Agreement and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims) shall be governed by and construed in accordance with the laws of India. The parties irrevocably agree that the courts of Mumbai shall have exclusive jurisdiction to settle any dispute or claim that arises out of or in connection with this GIA Agreement or its subject matter or formation (including non-contractual disputes or claims).

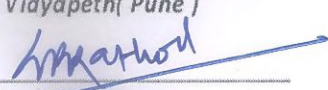
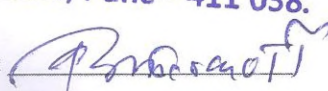
**23. COUNTERPARTS:**

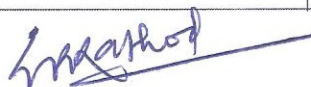
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**24. ENTIRE AGREEMENT:**

This GIA Agreement constitutes the entire agreement between the parties and supersedes all previous agreements between the parties relating to its subject matter.

IN WITNESS WHEREOF the Parties hereto have caused this GIA Agreement to be executed, in duplicate, by their duly authorized representatives on the date first written above.

<p><b>For TPCDT</b></p> <p>Approved On: 14-Jul-2020 02:09:08 AM</p> <p>Name: <i>Nagori Forum</i></p> <p>Designation:</p>	<p><b>For Bharati Vidyapeeth( Pune )</b></p> <p>Signature: </p> <p>Name: <b>Dr. G. R. Rathod</b></p> <p><b>DIRECTOR</b></p> <p><b>Bharati Vidyapeeth</b> <b>(Deemed to be University)</b> <b>Social Science Centre(M.S.W)</b> <b>Erandwane, Pune - 411 038.</b></p>
<p>Approved On:</p> <p>Name:</p> <p>Designation:</p>	<p>Witness:</p> <p>Signature: </p> <p>Name: <b>Dr. Vijay Kulkarni</b> <b>(Associate Professor)</b></p>





## Grant-in-Aid Agreement

This **Grant-in-Aid Agreement ("GIA Agreement")** is made and entered into on this **15** day of **June**, 2020 ("**Effective Date**"),

BETWEEN

**Tata Power Community Development Trust**, a Trust duly registered under the Bombay Public Trusts Act 1950, vide Registration number E - 25632 with its registered office at Bombay House, 24, Homi Mody Street, Mumbai 400001(hereinafter referred to as **TPCDT** which expression shall unless repugnant to the context thereof be deemed to mean and include its successors and assigns), of the ONE PART;

AND

**Bharati Vidyapeeth ( Pune )**, a non-profit organization registered as **Registered with Charities Commissioner**, registration number **90186** under the **Societies Registration Act 1860** with its registered office **BVDU Social Sciences Centre, New Law College Building, Erandwane Campus, Pune 411 038** India, represented by its Trustee/Authorised Signatory **Dr. Ganesh R Rathod** having current and valid Income tax 12AA registration certificate for tax exemption and 80G tax Deduction certificate, hereinafter referred to as **Bharati Vidyapeeth ( Pune )** which expression shall unless repugnant to the context thereof be deemed to mean and include its successors and permitted assigns), of the OTHER PART.

(Hereinafter **TPCDT** and **Bharati Vidyapeeth ( Pune )** shall be individually referred to as "**the Party**" and collectively as "**the Parties**")

### WHEREAS:

- a) TPCDT is, inter alia, engaged in non-profit & community development initiatives **under 5 thrust areas namely Education, Health & Sanitation, Livelihood & Employability, Water and Financial Inclusion**, and is a key facilitator that supports developmental projects across identified locations to create and offer sustainable solutions to the diverse challenges faced by local communities.
- b) **Bharati Vidyapeeth ( Pune )** is a non-profit organization based out of **Pune** working in the field of **Health & Sanitation**. The NGO works in the states of **Maharashtra** The mission is to **To be world class university for social transmission through dynamic education linkages with employability on entrepreneurship especially women and adolescent girls**. The average annual gross contribution received by the NGO for last three years amount Rs5Cr. The NGO operates at locations such as

Pune, Solapur, Sangli District of Maharashtra. in the thrust areas of Education, Health, Livelihood, Women Empowerment and Employability.

- c) ***Bharati Vidyapeeth( Pune )*** has submitted a proposal dated 15-May-2020 to TPCDT for conducting ***Integrated Community Health Care : Promote and sensitize preventive health care – Anemia, Malnutrition, Breast Feeding, Health Behavior Change Communication*** and same forms part of GIA Agreement and is marked as **Annex- 3**
- d) TPCDT is desirous of being partner in the Intervention to be implemented by Bharati Vidyapeeth (Pune )The scope of the intervention and funding are as detailed and forms part of this GIA Agreement
- e) ***Bharati Vidyapeeth ( Pune )***would not sublet or delegate any of the project activities as part of this GIA Agreement.
- f) Believing the aforesaid to be true, and in furtherance of its Mission & Objectives, TPCDT has agreed to engage ***Bharati Vidyapeeth ( Pune )***, **through this GIA Agreement**, as the implementing agency to ***Integrated Community Health Care : Promote and sensitize preventive health care – Anemia, Malnutrition, Breast Feeding, Health Behavior Change Communication***

**NOW THEREFORE**, in consideration of the mutual covenants, terms and conditions set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties, agree as follows:

#### **1. INTERVENTION & ADMINISTRATION**

- a) **Intervention Title:** ***Integrated Community Health Care : Promote and sensitize preventive health care – Anemia, Malnutrition, Breast Feeding, Health Behavior Change Communication***
- b) **Scope:** ***To improve technical knowledge and counseling skill on Nutrition and Health from AWW & ANM/ASHA and Peer Educators from Mulshi and Mangaon Taluka of Pune and Raigad Districts.***
- c) **Project Objectives:** ***To create awareness about COVID-19 virus, Anemia , Malnutrition and Health as well as Nutrition among 8500 villagers and Govt. Service providers. (Refer Annex-3, Sec-B,4)***
- d) **Project Timelines:** ***From 01-Jun-2020 to 31-Mar-2021***
- e) **Name of Collaborating Organizations:**
- f) ***Bharati Vidyapeeth ( Pune )*** is the implementing organization for this Project.
- g) TPCDT is the non-profit organization, which would be funding this Project, by way of Grant-in-Aid in furtherance of developmental objects.

#### **2. PROJECT LOCATION:**

- a) State & District ***Maharashtra & Pune***
- b) Revenue Block ***Mulshi***
- c) Gram Panchayat or Ward ***Mulshi (Kh)***
- d) No of Villages or Ward Mohallas ***20*** covered
- e) Beneficiaries potentially covered through this project ***8500 (Refer Annex-3,Sec-B-6)***
- f) SC & ST Beneficiaries as ***20*** % of above (No.), covered through this intervention.

#### **3. THE WORKING RELATIONSHIP:**

The bipartite collaboration would be guided by the following mutually agreed principles:

- a) All the parties shall ensure transparency and accountability in all activities undertaken as a part of the intervention.



- b) The parties shall encourage adoption of a scientific, rational, democratic, bottoms-up, community needs-based approach to the issues addressed.
- c) The parties shall encourage the use of technology-based interventions for higher impacts, outreach and outcomes.
- d) Each stakeholder to designate Single Point of Contact (SPoC) for effective coordination during the project execution.

#### 4. INTERVENTION TERM AND WORKPLAN

- a) The intervention shall be implemented in accordance with GIA Agreement and the intervention proposal set out in Annexure-3.
- b) **Bharati Vidyapeeth ( Pune )** shall forthwith notify TPCDT in writing in the event of the occurrence of any event that may cause delay in achieving the intervention delivery milestone.
- c) The terms of the intervention under this GIA Agreement of FY-19.
- d) The work plan in terms of (NGO name) deliverables with timelines mentioned in (Annexure-3, Sec B-8)

#### 5. INTERVENTION BUDGET/PARTNERS NAME & PAYMENT TERMS:

- a) TPCDT has sanctioned to **Bharati Vidyapeeth ( Pune )** a Grant-in-Aid of **600000.0** (Indian Rupees **Six Lakhs** for the Project to be undertaken by **Bharati Vidyapeeth ( Pune )** in relation to Integrated Community Health Care : Promote and sensitize preventive health care – Anemia, Malnutrition, Breast Feeding, Health Behavior Change Communication as "Authorized/Approved Activities")
- b) TPCDT shall deploy financial resources for the Term of this GIA Agreement up to a total cost of INR **600000.0** (Indian Rupees **Six Lakhs** only). (**Annex-3 Sec-B-8**) The **Bharati Vidyapeeth ( Pune )** agrees that the project management charges shall not exceed 10% of the total Grant-in-Aid (INR) Amount, and to that effect satisfies TPCDT.
- c) It is understood and agreed between the Parties that TPCDT's Grant-in-Aid to **Bharati Vidyapeeth ( Pune )**, is with respect to the intervention as per KPIs mentioned in (**Annex-2**)
- d) Compliances & Schedule of Payments for Total Grant Amount of Rs: **600000.0**

Installment number	Installment payment (in %)	Installment Amount	Key Milestone (Annex-1)
1	25%	150000.0	On signing of GIA Agreement
2	30%	180000.0	On completion of agreed key deliverables mentioned in Annexure-1 and 80% utilization of 1st installment.
3	35%	210000.0	On Completion of 50% of Key performance indicators [Midline study] (Refer KPIs annex-2) and 80% utilization of 2nd installment.
4	10%	60000.0	Completion of all initiatives, 80% utilization of 3rd installment, achieving 100% KPIs and submission of end line report.

- a) **Bharati Vidyapeeth ( Pune )** shall submit expenditure statements, indicating usage of 80% of first and consequent Grant installments, during course of the project based on actuals.
- b) Any cost escalation of the Project beyond the Grant in Aid Amount, committed hereinabove shall be borne by **Bharati Vidyapeeth ( Pune )**
- c) The pre-commissioning process shall start immediately after accepting and signing of the GIA Agreement between the Parties. Work shall be completed as per milestones and timelines defined in "Scope" part of this document jointly planned and agreed by both parties.
- d) **Bharati Vidyapeeth ( Pune )** shall submit program report for the immediate previous month in the reporting cycle by 5<sup>th</sup> of the month, along with relevant supporting documents to TPCDT.
- e) **Bharati Vidyapeeth ( Pune )** shall submit financial report including expenses incurred for the immediate previous month in the reporting cycle of 1st to 31st calendar month, along with relevant supporting documents to TPCDT
- f) If TPCDT does not receive two consecutive progress reports (both programmatic and financial) it shall be at liberty to hold the project or hold further release of Grant-in-Aid Assistance agreed by TPCDT
- g) **Bharati Vidyapeeth ( Pune )** shall refund any unutilized Grant, to TPCDT at the end of a Project. Both Parties may discuss possibility of, and TPCDT may approve appropriate utilization of unutilized grants in a manner agreed by both Parties, with set timelines
- h) TPCDT has the sole authority to hold, stop or extend the Project timeline and Grant-in-Aid Amount.
- i) TPCDT provides Grants based on funding received annually from its Funders. In cases of multiyear programs, where the payments cross a financial year (31 March), the Grant Amounts made post this period may vary, depending on changes in funds and program directions/focus.

#### 6. **REPRESENTATIONS & WARRANTIES:**

- a) **Mutual Representations and Warranties** - Each Party represents and warrants to the other Party that:
  - i. It has the full right, power and authority to enter into this GIA Agreement, to Grant-in-Aid the rights Grant-in-Aided hereunder and to perform its obligations hereunder;
  - ii. The execution of this GIA Agreement by its representative whose signature is set forth at the end hereof has been duly authorized by all necessary action of the Party; and
  - iii. When executed and delivered by such Party, this GIA Agreement will constitute the legal, valid and binding obligation of such Party, enforceable against such Party in accordance with its terms.
  - iv. For hardware and software, **Bharati Vidyapeeth ( Pune )** is solely responsible and accountable owner of the same.
  - v. The product warranties, any maintenance, repair or damage will be tracked by **Bharati Vidyapeeth ( Pune )**
- b) **Representations and Warranties of Bharati Vidyapeeth ( Pune )**  
  
**Bharati Vidyapeeth ( Pune ) represents** and warrants to TPCDT that: The execution, delivery and performance of this GIA Agreement do not and shall not be inconsistent and violate any agreed obligation of **Bharati Vidyapeeth ( Pune )**;
  - i. The Grant-in-Aid shall be directed only towards Authorized/ Approved Activities as set out;

- ii. From time to time, Mr./Ms. ***Dilip Kawade*** or any other nominee of TPCDT shall be invited to respective field locations or project locations, to undertake field visits, along with employees/representative of ***Bharati Vidyapeeth ( Pune )*** engaged in the Project
- iii. It shall furnish to TPCDT, copies of all necessary permissions and other necessary documents received from relevant government authorities and departments, conveying permission/ no-objection for covering the selected Project;
- iv. The resources received for this project shall be used for the Project objectives only and not for any commercial use. The resources shall be used, maintained and treated as a value to the respective projects;

#### 7. **USE OF TATA POWER LOGO FOR BRANDING:**

- g) This Intervention is being deployed under Tata Power Health & Sanitation CSR Intervention. The logo of Tata Power and brand name of intervention can be used appropriately by ***Bharati Vidyapeeth ( Pune )*** within the scope of this intervention with mutual consent of both parties.

#### 8. **NO LIABILITY**

- a) ***Bharati Vidyapeeth ( Pune )*** shall comply with all laws, regulations and also arrange to provide all the necessary approvals for carrying out all the plans agreed between the parties, for ensuring compliance of all applicable law, statutes for deployment as mentioned in this GIA Agreement. TPCDT shall not be liable in any manner whatsoever for any non-compliance in respect of the applicable laws, regulations and in the event of any adverse claim of whatsoever nature arising thereof, the entire burden shall be strictly borne by ***Bharati Vidyapeeth ( Pune )***.
- b) Nothing in this GIA Agreement is intended or shall be construed to authorize either Party to create or assume any liability or indebtedness of any kind in the name of, or on behalf of the other Party or to act for or be responsible for the performance of the other Party in any manner except and to the extent expressly provided in this GIA Agreement. Notwithstanding anything contrary contained herein the parties shall not be obliged to incur any liability in case of any of the parties shall without prior specific approval/ consent of the other parties' credit or accept any contract binding upon the parties other than as envisaged in this GIAA.

#### 9. **CONFIDENTIALITY**

The parties agree that all data which is transmitted or communicated by either party to the other party shall in all cases be held in confidence by the Receiving Party and not disclosed to any third party unless written consent of Disclosing Party is first obtained, except that, Receiving Party has the right to disclose such information to its own employees, consultants and representatives who are bound by an obligation of confidentiality and who need to know such information for the purposes specified hereinabove. The Receiving Party agrees that it shall not use the confidential data for any purpose(s) other than the ones specified herein. However, the Receiving Party shall not be required to maintain confidential or be restricted in its use of any data which,

- i. Was in public domain at the date of disclosure to Receiving Party
- ii. Becomes public knowledge during the term of this GIA Agreement without breach of this GIA Agreement
- iii. Receiving Party can show that it was in its possession prior to disclosure by Disclosing Party, and

- iv. Disclosure of which is required by law or by order of a court of competent jurisdiction. The obligation as to confidentiality shall survive for 5 years post termination/ expiry of this GIA Agreement.

#### **10. INTELLECTUAL PROPERTY RIGHTS (IPR)**

With respect to the services rendered under this GIA Agreement, the Parties agree that:

- a) All IPR arising out of this GIA Agreement and the data, information or activities therein shall solely vest with TPCDT. Usage of any such data or information that involves the IPR for TPCDT shall amount to an infringement if such usage is not authorized in writing.
- b) **Bharati Vidyapeeth ( Pune )** agrees that it shall comply with all the relevant laws and shall not infringe in any IPR in the course of performing its obligations under this GIA Agreement.
- c) **Bharati Vidyapeeth ( Pune )** agreed to indemnify/ keep indemnified TPCDT from all claims, suits, actions, losses, penalties or liabilities arising out of a breach of the clauses above.

#### **11. ETHICAL BEHAVIOUR:**

- a) **Bharati Vidyapeeth ( Pune )** represent and warrant that it has conducted and shall conduct its business in accordance with the highest ethical standards and it shall comply with all applicable laws in the performance of its obligations under this **GIA Agreement**, including but not limited to, laws dealing with ethical business practices.
- b) If, at any time during the term of this **GIA Agreement**, **Bharati Vidyapeeth ( Pune )** is informed or information comes to its attention that it or any of its affiliates is or may be in violation of any applicable law (or if it is so determined by any court, tribunal or governmental agency or authority), **Bharati Vidyapeeth ( Pune )** shall immediately take all appropriate steps (including any reasonable requests by TPCDT) to remedy such violation and comply with such a law in all respects. Where such violation occurs and is not remedied TPCDT may terminate this GIA Agreement with immediate effect.
- c) **Bharati Vidyapeeth ( Pune )** shall establish and maintain all proper records (including accounting records) required by applicable law and shall make such records available to TPCDT, if requested to do so. A certified utilization certificate shall be issued at the end of any project.
- d) **Bharati Vidyapeeth ( Pune )** acknowledges of having read Tata Code of Conduct, accessed from Tata Power company website URL: <https://www.tatapower.com/pdf/aboutus/Tata-Code-Power-of-Conduct.pdf>  
**Bharati Vidyapeeth ( Pune )**, as CSR Partner of Tata Power, acknowledges to comply with the guidelines given therein as part of upholding highest ethical standards during the deployment of this Project.

#### **12. TERM, EXTENSION&TERMINATION/EXPIRY:**

- a) This GIA Agreement shall commence as of the Effective date and shall remain in force until **31-Mar-2021**. Unless terminated earlier in accordance with the terms of this GIA Agreement. The Parties may renew this GIA Agreement on 'no cost to TPCDT' basis for a mutually agreed period if the situation so warrants, and the extension of period of agreement envisaged herein occasioned for the reasons not attributable to **Bharati Vidyapeeth ( Pune )**, for its non-performance or delay in performance.
- b) TPCDT shall have the right to terminate this GIA Agreement immediately, for any reason whatsoever without assigning any reason thereof.

- c) In the event of termination, the ***Bharati Vidyapeeth ( Pune )*** shall refund the unspent residual amount to TPCDT.

**13. WAIVER:**

No failure or delay by a party to exercise any right or remedy provided under this GIA Agreement or by law shall constitute a waiver of that or any other right or remedy, nor shall it preclude or restrict the further exercise of that or any other right or remedy. No single or partial exercise of such right or remedy shall preclude or restrict the further exercise of that or any other right or remedy.

**14. VARIATION:**

Both the Parties agree and confirm that the terms and conditions contained in this GIA Agreement may be changed / altered through written mutual consent; at any point, during course of the Agreement.

No variation of this GIA Agreement shall be effective unless it is in writing and signed by the Parties (or their authorised representatives).

**15. SEVERANCE:**

If any court or competent authority finds that any provision of this GIA Agreement (or part of any provision) is invalid, illegal or unenforceable, that provision or part-provision shall, to the extent required, be deemed to be deleted, and the validity and enforceability of the other provisions of this GIA Agreement shall not be affected.

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No person other than a Party to this GIA Agreements shall have any rights to enforce any term of this GIA Agreement.

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Nothing in this GIA Agreement is intended to, or shall be deemed to, establish any partnership or joint venture between the Parties, constitute either Party the agent of the other Party, nor authorise either Party to make or enter into any commitments for or on behalf of the other Party.

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- b) The affected Party shall use its reasonable endeavours to mitigate the adverse effects of the Force Majeure event affecting it and shall seek reasonable alternative means to resume the Services, to the extent not affected by the event of Force Majeure. The affected Party shall provide to the other Party reasonable details as requested by the other Party regarding the nature of the Force Majeure event.

Neither Party shall be entitled to make any claim on the other for any fees, costs, expenses, losses or damages incurred or suffered as a result of an event of Force Majeure.

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Any dispute or differences arising out of or in connection with this GIA Agreement (including the validity or interpretation hereof) shall be referred to the sole arbitrator to be nominated by Parties and the arbitration shall be governed by the provisions of the Indian Arbitration & Conciliation Act, 1996 or any law relating to arbitration in force at the time of such reference. The venue of the arbitration shall be Mumbai. The parties submit to the exclusive jurisdiction of the Courts of Mumbai.

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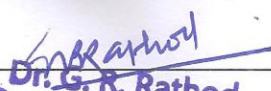
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**24. ENTIRE AGREEMENT:**

This GIA Agreement constitutes the entire agreement between the parties and supersedes all previous agreements between the parties relating to its subject matter.

IN WITNESS WHEREOF the Parties hereto have caused this GIA Agreement to be executed, in duplicate, by their duly authorized representatives on the date first written above.

<p><b>For TPCDT</b></p> <p>Approved On: 25-Jun-2020 07:34:43 PM</p> <p>Name: <i>Nagori Forum</i></p> <p>Designation: <i>Head - Corporate Social Responsibility</i></p>	<p><b>For Bharati Vidyapeeth ( Pune )</b></p> <p>Signature: </p> <p>Name: <b>Dr. G. R. Rathod</b> <b>DIRECTOR</b> <b>Bharati Vidyapeeth</b> <b>(Deemed to be University)</b> <b>Social Science Centre (M.S.W)</b> <b>Erandwane, Pune - 411 038.</b></p> <p>Designation: <b>Social Science Centre (M.S.W)</b></p>
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**Bharati Vidyapeeth**  
**Deemed University, Pune (India)**

‘A’ Grade University Status by MHRD, Govt. of India  
Accredited & Reaccredited with ‘A’ Grade by NAAC  
and A+ in 2016

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***MASTER OF SOCIAL WORK PROGRAMME***  
***(MSW)***

***Structure of the Programme under Semester and***  
***Choice Based Credit Pattern***  
***(To be effective from 2019-20)***

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**Social Science Centre**

Paud Road, Erandwane, Pune – 411038

Ph. 020 25448520 or 25431891

Email: [mstpune@bharativedyapeeth.edu](mailto:mstpune@bharativedyapeeth.edu)

[drgrrs@gmail.com](mailto:drgrrs@gmail.com)

**BHARATI VIDYAPEETH DEEMED UNIVERSITY, PUNE.**  
**MASTER OF SOCIAL WORK (MSW)**  
**(Structure of the Programme under Semester and Choice Based Credit Pattern 2019-20)**

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About Bharati Vidyapeeth

Bharati Vidyapeeth Deemed University

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Rules and Regulations

## GLOSSARY OF ABBREVIATIONS

CC	CoreCourses
FCD	Family and Child Development
URCD	Urban and Rural Community Development
HRM&LW	Human Resource Management and Labour Welfare
AE	Ability Enhancement
SE	Skill Enhancement
FW	Field Work
OV	Orientation Visits
RP	Research Project
CVV	Comprehensive Viva-Voce
Lect	Lectures
Tut	Tutorials
UE	University Examinations
CIA	Continuous Internal Assessment
EoTE	End of Term
ST	Study Tour
BPT	Block Placement

## **PREFACE**

As per the changing needs of the society we have revised the syllabus of the MSW programme offered by the Bharati Vidyapeeth Deemed University, Pune that has been implemented from the academic year 2019-20. The present syllabus is of semester and choice based credit pattern. The curriculum is designed under the guidelines given by the UGC. The entire syllabus is very much innovative and need based.

It also contains the brief information of the Bharati Vidyapeeth Deemed University and Social Sciences Centre. For the information of the students, the rules and guidelines of the MSW programme regarding the field work, project report, orientation visits, study tour, attendance, NSS camp, assignments, etc. are described. The students are required to go through the details and follow the rules and regulations accordingly.

**Dr. G. R. Rathod**

**Director**

## **BHARATI VIDYAPEETH**

Bharati Vidyapeeth, the parent body of Bharati Vidyapeeth University, was established on 10th May, 1964 by Hon. Dr. Patangrao Kadam with the objective of bringing about intellectual awakening and all sided development of the people of our country through education. Bharati Vidyapeeth is now a leading educational institute in the country, which has created a history by establishing, within a span of 52 years, 180 educational institutions imparting education from pre-primary to post graduate level. Our colleges and institutions of higher education impart education in different discipline including Medicine, Dentistry, Ayurved, Homoeopathy, Nursing, Arts, Science, Commerce, Engineering, Pharmacy, Management, Social Sciences, Law, Environmental Science, Architecture, Hotel Management and Catering Technology, Physical Education, Computer Science, Library Science, Information Technology, Biotechnology & Agriculture.

These educational institutions which have achieved an acclaimed academic excellence cater to the educational needs of thousands of students coming from different parts of India and also abroad. Our teaching faculty includes highly qualified, experienced, dedicated and student-caring teachers. These educational institutions are located at various places viz. Pune, Navi Mumbai, Kolhapur, Solapur, Sangli, Karad, Panchagani, Jawhar and New Delhi. The spectacular success achieved by Vidyapeeth is mainly a creation of unusual foresight, exceptionally dynamic leadership and able guidance of the founder of Vidyapeeth, Hon. Dr. Patangrao Kadam. It has been our constant endeavour to impart high quality education and training to our students and so, no wonder that our institutions have become nationally known for their academic excellence. In recognition of the academic merit achieved by these institutions and potential for development, Government of India and the University Grants Commission of India have accorded the status of university to Bharati Vidyapeeth with its thirty two constituent units.

Besides these 180 educational institutions, Bharati Vidyapeeth has also been successfully running a Co-operative Bank, Co- operative Consumer Stores, a Cooperative Poultry, a Co-operative Sugar Factory, Charitable Hospital and Medical Research Center and the like.

## **Bharati Vidyapeeth Deemed University, Pune**

Bharati Vidyapeeth, the parent organization of this University is one of the largest educational organizations in the country. It has 180 educational units under its umbrella including 67 Colleges and Institutes of conventional and professional disciplines.

The Department of Human Resource Development, Government of India on the recommendations of the University Grants Commission accorded the status of "Deemed to be University" initially to a cluster of 12 units of Bharati Vidyapeeth. Subsequently, 18 additional colleges / institutes were brought within the ambit of Bharati Vidyapeeth University wide various - notifications of the Government of India. Bharati Vidyapeeth University commenced its functioning on 26th April, 1996.

### **Constituent Units of Bharati Vidyapeeth University**

1. BVDU Medical College, Pune.
2. BVDU Dental College Hospital, Pune
3. BVDU College of Ayurved, Pune
4. BVDU Homoeopathic Medical College, Pune
5. BVDU College of Nursing, Pune
6. BVDU Yashwantrao Mohite College of Arts, Science & Commerce, Pune.
7. BVDU New Law College, Pune.
8. BVDU Social Sciences Centre (M.S.W.), Pune
9. BVDU Yashwantrao Chavan Institute of Social Science Studies & Research, Pune.
10. BVDU Centre for Research S Development in Pharmaceutical Sciences S Applied Chemistry, Pune
11. BVDU College of Physical Education, Pune.
12. BVDU Institute of Environment Education & Research, Pune.
13. BVDU Institute of Managements Entrepreneurship Development, Pune.
14. BVDU Poona College of Pharmacy, Pune.
15. BVDU College of Engineering, Pune
16. BVDU Interactive Research School in Health Affairs (IRSHA), Pune.
17. BVDU Rajiv Gandhi Institute of Information Technology & Biotechnology, Pune
18. BVDU College of Architecture, Pune
19. BVDU Abhijit Kadam Institute of Managements Social Sciences, Solapur.
20. BVDU Institute of Management, Kolhapur



21. BVDU Institute of Managements Rural Development administration, Sangli.
22. BVDU Institute of Managements Research, New Delhi
23. BVDU Institute of Hotel Managements Catering Technology, Pune
24. BVDU Yashwantrao Mohite Institute of Management, Malakapur-Karad.
25. BVDU Medical College & Hospital, Sangli
26. BVDU Dental College & Hospital, Mumbai
27. BVDU Dental College & Hospital, Sangli
28. BVDU College of Nursing, Sangli.
29. BVDU College of Nursing, Navi Mumbai
30. BVDU College of Engineering New Delhi.

The status of University was given to a cluster of these Colleges and Institutes in appreciation of the high level of their academic excellence and for their potential for further growth.

During the last 22 years or so, the University has achieved still higher pinnacles of academic excellence and has established its reputation to such an extent that it attracts students not only from various parts of India but also from abroad. According to a survey conducted by Association of Indian Universities, this University is one among the top ten Universities in the country preferred by the overseas students for admissions. At present, there are more than 817 overseas students from 67 countries on the rolls of constituent units of this University.

During the last 20 years, there has been tremendous academic expansion of the University. It now conducts in all 250 plus programmes in its constituent units which includes Post Graduate, Under Graduate and Diploma level courses. All the professional courses which the University conducts such as those of Medicine, Dentistry, Engineering etc., have approval of the respective Statutory Councils, viz., Medical Council of India, Dental Council of India, All India Council for Technical Education etc.

The University is a throbbing center of research activities and has launched Ph.D. programmes in 72 subjects. It has also introduced quite a few innovative academic programmes such as Masters in Clinical Optometry, M.Tech. in Nano Technology.

The University's performance and achievements were assessed by the "National Assessment and Accreditation Council" and it was accredited with a prestigious "A" grade in 2004. Quite a few programmes of the constituent units such as College of Engineering at Pune, Management Institute in Delhi and others have also been accredited by "National Board of Accreditation". Three constituent

units of Bharati Vidyapeeth Deemed University are also the recipients of ISO 9001-2001 certifications.

Reaccreditation with 'A' Grade in 2011 and A+ 2016.

## **BHARATI VIDYAPEETH DEEMED UNIVERSITY, PUNE.**

### **MASTER OF SOCIAL WORK (MSW)**

#### Programme Structure under Semester and Choice Based Credit Pattern

Introduction: The degree of Master of Social Work is a professional Post-Graduate degree approved by Department of Social Justice, Govt. of Maharashtra. The graduates have potentiality to professionally seek employment and make career in various positions in governmental, non governmental and UN agencies such as UNO, UNICEF, ILO, WHO, UNDP, World Bank etc. The various areas for job placement are in Rural development, Urban development, Tribal development, Women and Child Development, Welfare of specially challenged persons, Correctional organizations, Corporate social responsibility, Family Courts, Hospital settings etc. The Master's degree programme equips trainees to work as agents of change from grassroots level to policy levels.

Bharati Vidyapeeth Deemed University, Pune offers three specialization courses of eight papers each divided over four semesters. Currently the following specializations are approved by the University.

The following Specialization Courses are offered by the University

1. Family and Child Development (FCD)
2. Urban and Rural Community Development (URCD)
3. Human Resource Management and Labour Welfare (HRM&LW)

- 1. MSW Programme Structure. :** The MSW degree will be awarded to students who complete a total of 100 credits in minimum of two years of four semesters. The student shall opt total 24 Courses in four semester which includes; 12 Core Courses, 08 Electives Courses (student shall select any one specialization and minimum two courses out of three in each semester) and 02 ability and 02 skill enhancement Courses. Student shall opt six courses per semester; Field Work and Viva-Voce. The student has to complete Orientation Visits as a part of field work in first semester, Research Project (Dissertation) in third Semester. Study Tour and Block placement in fourth semester.
- 2. Intake:** The intake for MSW Programme is 60 + 6 (Pune) and 30 + 03 (Solapur).
- 3. Admission Procedure:** Admission to MSW Programme is open to graduate of any Indian or Foreign recognised University. Candidates who have appeared for the qualifying examination (Bachelor's degrees exam.) in the respective year and awaiting results are also eligible for admission to first year M.S.W. Programme. However, the admission of such students will be confirmed only after producing the original passing certificate.
- 4. Reservation Rules:** The Reservation rules of the Dept. of Social Welfare, Govt. of Maharashtra is applicable for the admission to M.S.W. Programme but the GOI

scholarship is not applicable to the backward community students. Hence, the admission will be granted as per the following Reservation Schedule:

Category	Percentage	No. of Seats
Open	48	29
S.C.	13	08
S.T.	07	04
O.B.C.	19	11
V.J.N.T.	11	07
S.B.C.	02	01
Total	100	60

**5. Duration:** The duration of the Programme shall be of two academic years, in case the student fails in MSW programme he or she has to complete this programme within a maximum period of four years.

**6. Eligibility:**

Admission to MSW Programme is open to graduate (12+3) of any Indian or Foreign recognized University. Candidates who have appeared for the qualifying examination (Bachelor's degrees exam.) in the respective year and a waiting for the result are also eligible for admission to first year M.S.W. Programme. However, the admission of such students will be confirmed only after producing the original passing certificates such as Marksheet, Leaving / Transfer certificate, Migration etc. within 30 days from the date of admission. In any case the student has to clear his / her eligibility before 30<sup>th</sup> August of the respective academic year. If the student fails to clear his / her eligibility within the said period he / she will not be allowed for appearing the University examinations.

**7. Medium of Instruction:**

The medium of instruction shall be English. However, the student can write their theory examination, field work reports, and project reports in Marathi.

**8. Programme Pattern:** The MSW programme shall have a Choice Based Credit System.

**8.1** The total marks at University Examinations for each theory courses shall have 100 marks. Out of 100 marks, 60 marks theory examination will be conducted by university and 40 marks for internal assignments.

**8.2** Internal examination consists Paper presentations /Assignments/Term papers/ Class test/ Case-study presentations/Review of Articles or Books/Preparing bibliography/ Field based tasks.

**8.3** Internal assessments marks out of 40 and corresponding Grade Points shall be given by the subject teacher and shall be submitted by the Head of the Institute to the University.

**8.4** The Grade Points of University examination and Internal Assessment shall be combined with Weightages of 60 and 40 marks respectively.

**9. Field Work:**

**9.1** The field work in the three semesters will include concurrent field work in the NGOs, Industries, Government Offices, undertakings and other agencies. Orientation visits shall be part of Field work of Sem I.

**9.2.** Field Work shall be of 100 marks for each semesters (Sem I, Sem II, Sem III).

**9.3.** Field work shall be conducted two days (fifteen clock hours) in every week.

**9.4.** Field work shall be conducted at social work agencies/organizations recognized by the training Institution. Every student shall be supervised by an experienced/professional social worker from the agency and a faculty member from the Institute.

**9.5.** A weekly individual conference of at least 30 minutes, related to field work of every student, shall be conducted by the field work supervisor. Field work shall be evaluated internally by the assigned Field Work Supervisor.

**9.6.** 100% attendance at Field work is compulsory .

**9.7.** A student failing in field work in any semester will not be permitted to appear for theory courses of the respective semester.

**9.8.** In any case, there is no provision of revaluation or moderation of field work marks, at university level.

**9.9. Field Work Components:**

**a. Semester- I**

- Concurrent Field Work
- Individual/Group Conference
- Seminar/ Presentation.

**b. Semester- II**

- Concurrent Field Work
- Individual/Group Conference
- Seminar/ Presentation.

**c. Semester- III**

- Concurrent Field Work
- Individual/Group Conference
- Seminar/ Presentation.

**10. Comprehensive Viva Voce Examination:**

**10.1** Viva – Voce shall be of 100 marks each semester.

- 10.2** A comprehensive Viva-Voce examination shall be conducted by a Panel of Examiners appointed by the University at the end of Semesters I, II, III & IV, based on theory knowledge, professional development and field work practicum. The Semester-III, Viva-Voce Examination will also include the Research component.
- 10.3** A student failing in Viva-Voce in any semester shall be called again for the Viva - Voce within one month from the date of declaration of the respective Semester Examination results. Only one repeat Viva-Voce is permissible to be conducted during each semester. However a student failing in Viva-Voce Examination shall be eligible for admission to the subsequent Semester.
- 10.4** A student failing in Viva-Voce (Semester-IV) shall be called again for a repeat Viva-Voce within one month from the date of declaration of the Fourth Semester Examination results.
- 11. Research Project**
- 11.1** The Research Project shall be of 100 marks.
- 11.2** Every MSW student is required to select an appropriate topic for his/her research project during the second semester and complete the Project Report and submit it to the Institute, 15 days before appearing the third semester examination.
- 11.3** There shall be only one Project Report at MSW and it shall be submitted to the University through the Head of the Institution, recommended for submission after Certification and approval of the concerned Research Guide.
- 11.4** The research project report shall be evaluated externally by the University Examiners.
- 11.5** A candidate failing in research project will have to re-write and submit the revised project report in the fourth semester.
- 11.6** The topic of Research must be related to the area of Social Work.
- 11.7** The candidate must follow the scientific process and method of Social Work Research or Social Science Research.
- 12.0 Orientation Visits :** The orientation visit shall be as a part of Fieldwork of Sem I
- 12.1** Every student is required to visit various NGOs, Industries, Government Organisation and other agencies in the first semester. If the student remains absent for Orientation Visits, he/she should revisit to the allotted agencies in first semester only. The student has to submit a brief report on the Orientation Visits to the Institute.
- 12.2.** 100% attendance for Orientation Visits is compulsory.



- 12.3.** Orientation Visits shall be evaluated internally by the Coordinator/Field Work Supervisor.
- 13. Study Tour:** Study Tour shall be of 100 marks.
- 13.1** The study tours will be organized separately as per the specializations. The duration of the study tour will be 7 to 10 days. The students are required to submit the study tour reports in the typed format to the institute (i.e. study tour co-ordinator).
- 13.2** The study tour will be compulsory for all the M.S.W. Second year students. If the Student remains absent for the Study Tour, he/she has to complete the Study Tour in the same semester.
- 13.3** The Study Tour will be internally evaluated by the respective Study Tour Coordinator.
- 14. Block Placement:**
- 14.1** Block Placement shall be of 100 marks.
- 14.2** The Block Placement of 30 days duration is compulsory for the MSW Second year students. The same will be arranged by the institute immediately after the III semester examinations. The students are required to submit the detail report of the block placement in the typed form. They will also submit the certificate of completion of Block Placement duly certified by the organization in the prescribed form.
- 14.3** The Block Placement will be internally evaluated by the respective Field Work Supervisor/Coordinator.
- 15 Heads of passing:**
- 15.1** The following shall be the independent heads of passing:
1. Written theory courses
  2. Field work
  3. Study Tour
  4. Research Project
  5. Comprehensive Viva Voce
  6. Block Placement

**16 Standard of Passing:**

For the MSW courses, both UE and IA constitute separate heads of passing. In order to pass in such courses and to earn the assigned credits, the learner must obtain a minimum grade point of 5.0 (40% marks) at UE and also a minimum grade point of 5.0 (40% marks) at IA.

If a student fails in IA, the learner passes in the course provided he/she obtains a minimum of 25% in IA and GPA for the course is at least 6.0 (50% in aggregate). The GPA for a course will be calculated only if the learner passes at the UE.

A student who fails at UE in a course has to reappear only at UE as a backlog candidate and clear the head of passing. Similarly, a student who fails in a course at IA has to reappear only at IA as a backlog candidate and clear the head of passing.

The 10-point scale Grades and Grade Points according to the following table.

<b>Range of Marks (Out of 100)</b>	<b>Grade</b>	<b>Grade Point</b>
$80 \leq \text{Marks} \leq 100$	<b>O</b>	<b>10</b>
$70 \leq \text{Marks} < 80$	A+	<b>9</b>
$60 \leq \text{Marks} < 70$	A	<b>8</b>
$55 \leq \text{Marks} < 60$	B+	7
$50 \leq \text{Marks} < 55$	B	<b>6</b>
$40 \leq \text{Marks} < 50$	C	5
Marks < 40	D	0

The performances at UE and IA will be combined to obtain the Grade Point Average (GPA) for the course. The weights for performance at UE and IA shall respectively be 60 and 40.

GPA is calculated by adding the UE marks out of 60 and IA marks out of 40. The total marks out of 100 are converted to grade point, which will be the GPA

#### **Formula to calculate Grade Points (GP)**

Suppose that '*Max*' is the maximum marks assigned for an examination or evaluation based on which GP will be computed. In order to determine the GP, Set  $x = \text{Max} / 10$  (since we have adapted 10-point system). Then GP is calculated by the formulas shown as below.

<b>Range of Marks at the evaluation</b>	<b>Formula for the Grade Point</b>
$8x < \text{Marks} < 10x$	10
$5.5x < \text{Marks} < 8x$	Truncate (Marks / x) + 2
$4x < \text{Marks} < 5.5x$	Truncate (Marks / x) + 1

Two kinds of performance indicators, namely, the Semester Grade Point Average (SGPA) and the Cumulative Grade Point Average (CGPA) shall be computed at the end of each term. The SGPA measures the cumulative performance of a learner in all the courses in a particular semester, while the CGPA measures the

cumulative performance in all courses since his/her enrolment. The CGPA of learner when he/she completes the programme is the final result of the learner.

The SGPA is calculated by the formula  $SGPA = \frac{\sum C_k \times GP_k}{\sum C_k}$ , where  $C_k$  is the credit value assigned to a course and  $GP_k$  is the GPA by the learner in the course, in the above, the sum is taken over all the courses that the learner has undertaken for the study during the semester, including those in which he/she might have failed or those for which he/she remained absent. **The SGPA shall be calculated up to two decimal place accuracy.**

The CGPA is calculated by the formula  $CGPA = \frac{\sum C_k \times GP_k}{\sum C_k}$  is the credit-value assigned to a course and  $GP_k$  is the GPA obtained by the learner in the course. In the above, the sum is taken over all the courses that the learner has undertaken for the study from the time of his/her enrolment and also the during the semester for which CGPA is calculated, including those in which he/she might have failed or those for which he/she remained absent. **The CGPA shall be calculated up to two decimal place accuracy.**

**The Formula to compute equivalent percentage marks for specified CGPA:**

% Marks (CGPA) =	10 x CGPA - 10	if $5.00 \leq CGPA \leq 6.00$
	5 x CGPA + 20	if $6.00 \leq CGPA \leq 8.00$
	10 x CGPA - 20	if $8.00 \leq CGPA \leq 9.00$
	20 x CGPA - 110	if $9.00 \leq CGPA \leq 9.50$
	40 x CGPA - 300	if $9.50 \leq CGPA \leq 10.00$

**Award of Honours :**

A student who has completed the minimum credits specified for the programme shall be declared to have passed in the programme. The final result will be in terms of letter grade only and is based on the CGPA of all courses studied and passed. The criteria for the award of honours are given below.

Range of CGPA	Final Grade	Performance Descriptor	Equivalent Range of Marks (%)
$9.50 \leq CGPA \leq 10.00$	O	Outstanding	$80 \leq \text{Marks} \leq 100$
$9.00 \leq CGPA \leq 9.49$	A+	Excellent	$70 \leq \text{Marks} < 80$
$8.00 \leq CGPA \leq 8.99$	A	Very Good	$60 \leq \text{Marks} < 70$
$7.00 \leq CGPA \leq 7.99$	B+	Good	$55 \leq \text{Marks} < 60$
$6.00 \leq CGPA \leq 6.99$	B	Average	$50 \leq \text{Marks} < 55$
$5.00 \leq CGPA \leq 5.99$	C	Satisfactory	$40 \leq \text{Marks} < 50$
CGPA Below 5.00	F	Fail	Marks Below 40

## 17 **Rules of Promotion:**

- 17.1 A Student is allowed to keep term from Semester – I to Semester – II, if he/she fails in any number of theory papers in Semester – I.
- 17.2 If the student fails either in internal examinations or University examination, he / she declared fail in the respective subjects, then a student is allowed to keep term for Semester – III, if he/she has cleared minimum 8 courses out of total 12 courses of Semester – I and Semester – II together.
- 17.3 A student failing in field work in any Semester will not be permitted to appear for theory courses of the respective semester. The student will not be eligible to continue with the subsequent Semesters unless he/she satisfactorily clears Field Work and Theory papers of the Semester.

18. Field work and Dissertation (Project Report) will be evaluated as per the evaluation criteria and standards framed by the respective training Institute and the University, from time to time.

19. Results will be declared for each semester and the final examination result will give grade and grade points average.

## 20. **Structure of Question Papers at University Examination**

20.1 Each theory course is of 60 marks and 3 hours duration. Question paper will consist 2 sections of total 6 questions:

20.2 A) Section No. 1 will consist 3 questions. Question No. 1 will be compulsory and will have 3 short notes, out of which any 2 may be attempted (5 marks x 2 = 10 marks). Question no. 2 and question no. 3 will have internal options and carry 10 marks each (10 marks x 2 = 30 Marks)

B) Section No. II will consist 3 questions. Question No. 4 will be compulsory and will have 3 short notes, out of which any 2 may be attempted (5 marks x 2 = 10 marks). Question no. 5 and question no. 6 will have internal options and carry 10 marks each (10 marks x 2 = 30 Marks)

21. **Grant of terms:** 100 per cent attendance is expected at the orientation programme, orientation visits, and field work. Minimum 75% attendance is required for class room lectures. Leave is ordinarily not granted. In very exceptional circumstances leave with prior permission of the Head of the Institution must be obtained. The Head of the Institution reserves the right to grant terms. Every student will have to give an undertaking in relation to compliance of all rules and regulations of the training institution. The decision of the Head of the Institution shall be final and binding in all matters pertaining to discipline and professional behavior.

**22. Programme Structure: Details**

<b>Programme structure shall be as under:</b>	<b>Credits</b>
1. Written theory courses 3 per semester x 4 Semesters: 12 courses x 03 credits	36 Credits
2. Written theory courses 2 per semester x 4 Semesters: 8 courses x 02 credits	16 Credits
3. Ability and Skill Enhancement Courses 1 per semester x 4 courses X 2 credits	08 Credits
4. Field work: 08 credits per semester 03x08 credits	24 Credits
5. Research Dissertation (Project Report) shall submit in Semester III	03 Credits
6. Study Tour in fourth semester	01 Credits
7. Block Placement after third semester examination	08 Credits
8. Comprehensive Viva Voce: 01 credit per semester 04 x 01 credit	04 Credits
<b>Total</b>	<b>100 Credits</b>

**23. Theory Courses:**

<b>Class</b>	<b>Semester</b>	<b>Credits</b>
MSW – I	<b>Sem - I</b>	
	Core Compulsory Courses 03x03 credits	09
	Elective Courses 02x02 credits	04
	Ability Enhancement 01x02 credits	02
	<b>Sem – II</b>	
	Core Compulsory Courses 03x03 credits	09
	Elective Courses 02x02 credits	04
	Skill Enhancement 01x02 credits	02
	MSW – II	<b>Sem – III</b>
Core Compulsory Courses 03x03 credits		09
Elective Courses 02x02 credits		04
Ability Enhancement 01x02 credits		02
<b>Sem - IV</b>		
Core Compulsory Courses 03x03 credits		09
Elective Courses 02x02 credits		04
Skill Enhancement 01x02 credits		02
<b>Total</b>		<b>60</b>

24. **Field Work Practicum :**

<b>Class</b>	<b>Semester</b>	<b>Credits</b>
M.S.W. – I	Semester – I	08
	Semester – II	08
M.S.W. – II	Semester – III	08
<b>Total</b>		<b>24 credits</b>

25. **Block Placement:**

<b>Class</b>	<b>Semester</b>	<b>Credits</b>
M.S.W. II	Sem. IV	08

26. **Study Tour:**

<b>Class</b>	<b>Semester</b>	<b>Credits</b>
M.S.W. II	Sem. IV	01

27. **Research Project Report :**

<b>Class</b>	<b>Semester</b>	<b>Credits</b>
M.S.W. II	Sem. II and III	03

28. **Comprehensive Viva – Voce :**

<b>Class</b>	<b>Semester</b>	<b>Credits</b>
M.S.W. I	Semester – I	1
	Semester – II	1
M.S.W. - II	Semester – III	1
	Semester – IV	1
<b>Total</b>		<b>4</b>



### MSW Regular CBCS 2019-20 Patterns

The MSW Programme is of 100 credits which is to be completed in a minimum of two years.

The distribution of Credits over the Semesters is given below:

#### SEMESTER – I

Course Number	Course Title	Credit Value	#Lect.	#Tut.	Weightage for UE/CIA (%)	EoTE
<b>Core Course – Compulsory Courses</b>						
CC-1	Social work: history and ideology	03	30	30	60/40	Uni.
CC-2	Methods of social work practice: work with individuals and groups	03	30	30	60/40	Uni.
CC-3	Social Work Research	03	30	30	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Family &amp; Child Development</b>						
FCD-1	Family Dynamics and Working with Families	02	20	20	60/40	Uni.
FCD-2	Child Development and Socialization	02	20	20	60/40	Uni.
FCD-3	Education and social work intervention	02	20	20	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Urban And Rural Community Development</b>						
URCD-1	Urban Development	02	20	20	60/40	Uni.
URCD-2	Rural Development	02	20	20	60/40	Uni.
URCD-3	Community planning for development	02	20	20	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Human Resource and Labour Welfare</b>						
HRM&LW-1	Organisational Behaviour	02	20	20	60/40	Uni.
HRM&LW-2	Trade Unions in India	02	20	20	60/40	Uni.
HRM&LW-3	Labour Economics	02	20	20	60/40	Uni.
<b>Ability Enhancement Course</b>						
AE-1	Corporate Social responsibility	02	20	20	60/40	Uni.
<b>Field Work &amp; Viva-voce</b>						
FW-1	Field Work-I	08	-	-	100 marks Internal assessment	IA.
CVV-1	Comprehensive Viva-Voce-I	01	-	-	100 marks	Uni.

**SEMESTER – II**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Value</b>	<b>#Lect.</b>	<b>#Tut.</b>	<b>Weightage for UE/CIA</b>	<b>EoTE</b>
<b>Core Course – Compulsory Courses</b>						
<b>CC-4</b>	Psychology for Social Workers	03	30	30	60/40	Uni.
<b>CC-5</b>	Methods of Social Work Practice – Work with Community & Social Action	03	30	30	60/40	Uni.
<b>CC-6</b>	Statistics and Computer Applications in Social Work Research	03	30	30	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Family &amp; Child Development</b>						
FCD-4	Family Life and Population Education	02	20	20	60/40	Uni.
FCD-5	Women Empowerment	02	20	20	60/40	Uni.
FCD-6	Feminist Social work Practice	02	20	20	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Urban &amp; Rural Community Development</b>						
URCD-4	Tribes in India	02	20	20	60/40	Uni.
URCD-5	Panchayat Raj System	02	20	20	60/40	Uni.
URCD-6	Community Development Models and Approaches	02	20	20	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Human Resource Management and Labour Welfare</b>						
HRM&LW-4	Labour Legislation	02	20	20	60/40	Uni.
HRM&LW-5	Human Resource Management	02	20	20	60/40	Uni.
HRM&LW-6	Business Communication and Presentation Skills	02	20	20	60/40	Uni.
<b>Skill Enhancement Course</b>						
SE - 1	Social Work and Skill development	02	20	20	60/40	Uni.
<b>Field Work &amp; Viva-voce</b>						
FW-2	Field Work-II	08	-	-	100 marks Internal assessment	IA.
CVV-2	Comprehensive Viva-Voce-II	01	-	-	100 marks	Uni.

### SEMESTER – III

Course Number	Course Title	Credit Value	#Lect.	#Tut.	Weightage for UE/CIA	EoTE
<b>Core Course – Compulsory Courses</b>						
CC-7	Introduction to Sociology and Indian Social Problem	03	30	30	60/40	Uni.
CC-8	Social Legislations	03	30	30	60/40	Uni.
CC-9	Social Policy and Planning	03	30	30	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Family &amp; Child Development</b>						
FCD-7	Programmes and Services for Children	02	20	20	60/40	Uni.
FCD-8	Youth Development	02	20	20	60/40	Uni.
FCD-9	Development communication for Social Workers	02	20	20	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Urban &amp; Rural Community Development</b>						
URCD-7	Urban Planning and Governance	02	20	20	60/40	Uni.
URCD-8	Natural Resource Management and Livelihood Resource	02	20	20	60/40	Uni.
URCD-9	Cooperative Practices in Rural Development	02	20	20	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Human Resource Management and Labour Welfare</b>						
HRM&LW -7	Social Security and Laws related to Wages.	02	20	20	60/40	Uni.
HRM&LW -8	Public relations and Corporate Communications	02	20	20	60/40	Uni.
HRM&LW -9	Personnel Management	02	20	20	60/40	Uni.
<b>Ability Enhancement Course</b>						
AE-2	Environmental Issues and Disaster management	02	20	20	60/40	Uni.
<b>Field Work &amp; Viva-voce</b>						
FW-3	Field Work-III	08	-	-	100 marks Internal assessment	IA.
CVV-3	Comprehensive Viva-Voce-III	01	-	-	100 marks	Uni.
RP	Research Project	03	-	-	-	Uni.

**SEMESTER – IV**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Value</b>	<b>#Lect.</b>	<b>#Tut.</b>	<b>Weightage for UE/CIA</b>	<b>EoTE</b>
<b>Core Course – Compulsory Courses</b>						
CC-10	Counselling in Social Work	03	30	30	60/40	Uni.
CC-11	Introduction to Constitution and Human Rights	03	30	30	60/40	Uni.
CC-12	Community Health and Health Care System.	03	30	30	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Family &amp; Child Development</b>						
FCD-10	Family Counselling	02	20	20	60/40	Uni.
FCD-11	Gender Studies	02	20	20	60/40	Uni.
FCD-12	Introduction to Gerontology	02	20	20	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Urban &amp; Rural Community Development</b>						
URCD-10	Sustainable development	02	20	20	60/40	Uni.
URCD-11	Community Participation and Management	02	20	20	60/40	Uni.
URCD-12	Tribal Development	02	20	20	60/40	Uni.
<b>Compulsory Elective - Opt any two courses from the specialization</b>						
<b>Specialization: Human Resource Management and Labour Welfare</b>						
HRM&LW -10	Labour Welfare	02	20	20	60/40	Uni.
HRM&LW -11	Industrial Relations and Case Studies	02	20	20	60/40	Uni.
HRM&LW -12	Performance Management	02	20	20	60/40	Uni.
<b>Skill Enhancement Course</b>						
SE -2	Media and Development	02	20	20	60/40	Uni.
<b>Field Work, Viva-voce &amp; Research</b>						
CVV-4	Comprehensive Viva-Voce-IV	01	-	-	-	Uni.
Field Work	Field Work-III	08	-	-	100 marks Internal assessment	IA.
ST	Study Tour	01	-	-	Internal assessment	Inst.
BPT	Block Placement	08	-	-	Internal assessment	Inst.

**MSW Regular (CBCS 2019-20 pattern)**  
**CC-1: SOCIAL WORK: HISTORY AND IDEOLOGY**

**Section – I**

**Unit – I: Indian History of Ideologies for Social Change – I**

- Concept of ideology
- Lokayat/Charvak
- Vedic and Vedant
- Jainism and Buddhism

**Unit – II: Indian History of Ideologies for Social Change – II**

- Hindu Reform Movement
- Dalit Movement
- OBC / VJNT Movements

**Unit –III: Western History of Ideologies**

- Rationalism
- Liberalism
- Utilitarianism
- Welfarism
- Socialism

**Section – II**

**Unit –IV: Contemporary Ideologies**

- Neo-liberalism
- Post-Modernism
- Globalization
- Ideology of Sustainable Development

**Unit – V: History of Social Work Profession in India**

- Social work education in India
- Goals of social work education
- Social work as a Profession

**Unit –VI: Values and Ethics of Professional Social Work**

- Concept of values and ethics
- Code of ethics for social workers
- Spirituality and social work

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## **CC- 2: METHODS OF SOCIAL WORK PRACTICE: WORK WITH INDIVIDUALS AND GROUPS**

### **Unit -I: Introduction to Case Work as a Method of Social Work**

- Concept and definitions of case work
- History of case work in India
- Assumptions in case work
- Ethics and Values in case work

### **Unit-II: Components of Case Work-**

- Person
- Problem
- Place
- Process

### **Unit-III: Principles and Process of Case Work**

- Principles of case work
- Process of case work - Study, diagnosis, treatment, evaluation, termination and follow up.
- Tools and Techniques in case work

### **Section –II**

#### **Unit – IV: Introduction to Group Work**

- Concept, meaning and definition of Social Group work
- Characteristics of social group work
- Principles of social group work
- Group work in various settings – hospital, school, correctional setting

#### **Unit – V: Process of Social Group Work**

- Orientation phase,
- Assessing and establishing objectives,
- Preparation of plan,
- Group formation phase,
- Rapport establishment phase
- Programme implementation
- Evaluation phase,
- Termination phase

#### **Unit – VI: Recording in Social Group Work**

- Significance of Recording in group work
- Principles of recording
- Types of recording- narrative, process and summary
- Techniques of recording –observation, fish-bowl, sociogram.



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## **CC- 3: SOCIAL WORK RESEARCH**

### **Section – I**

#### **Unit – I: Introduction to Social Work Research**

- Concept and Definitions of Social Work Research
- Goals of Research
- Scientific Methods

#### **Unit – II: Elements of Research**

- Concept and construct
- Hypothesis
- Objectives
- Variables: Dependent and Independent

#### **Unit III: Stages in Research**

- Selection of Topic
- Problem Formulation
- Formulation of Hypothesis and Objectives
- Formulation of Research Design
- Designing various Tools of Data collection
- Data Processing – Scrutiny, Editing, Coding, Data Analysis and Interpretation
- Report writing

### **Section – II**

#### **Unit – IV: Types of Research and Research Designs**

- Types of research: Qualitative research and Quantitative research
- Action Research and Participatory research,
- Experimental and Intervention research
- Research Design
- Descriptive and Exploratory
- Evaluative

#### **Unit – V: Research Methodology Sampling Methods**

- Universe of study
- Sampling methods
- Probability sampling: Random sampling- simple, stratified and systematic
- Non probability sampling: Purposive, Quota, convenience, Snow-ball

#### **Unit – VI: Data Collection**

- Sources -Primary and Secondary
- Methods- Observation, Interview, Focused Group Discussion
- Tools - Questionnaire, Interview schedule and interview guide, standardised scales

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- 1 Social Analysis and Social Development, Kulkarni Vijay and Dr. (Prof.) M.P.Kanaskar, (2014), - Published by Current Publications, Agra.
- 2 Social Analysis Methodology Dr.V.V.Kulkarni Dr. M.P.Kanaskar,(2014), - Published by Current Publications, Agra.
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# FCD – 1 : FAMILY DYNAMICS AND WORKING WITH FAMILIES

## Section - 1

### Unit – 1: Family as a Social Institution

- Origin, meaning & definition of family
- Evolution of family as a social institution.
- Types and functions of family.

### Unit – 2: Changing Family Structure

- Re-constituted families
- Child-less families
- Live-in relationships
- Single parenthood

### Unit – 3: Factors affecting Family

- Urbanisation,
- Modernisation
- Globalisation

## Section -II

### Unit – 4: Issues affecting the Family

- Desertion, separation
- Divorce
- Familial violence and abuse

### Unit – 5: Issues of Marginalized families

- Nomadic family
- Tribal family
- Caste / Class Issues

### Unit – 6: Services for the Family

1. An overview of family laws
2. Family support programmes- Institutional
3. Non- institutional

## REFERENCES:

1. Women Empowerment Dr.Usha Verghese and Dr.Kirtiraj D.C.- (2018) Published by School of Distance Education, Bharati Vidyapeeth Deemed University, PUNE
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## **FCD- 2: CHILD DEVELOPMENT AND SOCIALIZATION**

### **SECTION-I**

#### **Unit-1: Conceptual Framework**

- Definition of child
- Demographic profile of children –Indian and Global
- Overview of situation of children in India

#### **Unit-2: Child Development**

- Concept of Child Development
- Principles of Child Development
- Areas of Development- Physical , Emotional, Social, Intellectual

#### **Unit – 3 : Stages in the life-span (up to Adolescence)**

- Prenatal
- Neo-natal
- Post natal- Infancy , Toddlerhood, Early Childhood , Late Childhood , Adolescence

### **Section – II**

#### **Unit – 4: Developmental Hazards in Childhood**

- Infant Mortality
- Common Childhood Diseases
- Behavioural Problems

#### **Unit – 5: Child Socialization**

- Meaning , Concept and Definition of Socialization
- Process and goals of Socialization
- Socialization of Children in Institutional Settings

#### **Unit – 6: Agencies of Socialization**

- Family
- School
- Mass-Media

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## **FCD-3 EDUCATION AND SOCIAL WORK INTERVENTION**

### **Section – I**

#### **Unit – I: Conceptual Framework**

- Concept and Definition of Education
- Objectives of Education
- Factors affecting access to Education

#### **Unit – II: Non-Formal Education**

- Definition ,Relevance and Scope of non-formal education
- Objectives and Characteristics of non-formal education
- Non-formal education as a methodology in formal education

#### **Unit – III: Lifelong Education**

- Concept and meaning of lifelong education
- Government policies and programmes for lifelong Education
- NGO initiatives for lifelong Education

### **Section – II**

#### **Unit – IV: Pre-requisites for Education**

- Socio-economic background of adults and children affecting learning process
- Role of facilitator and facilitation in learning environment
- Psychological aspects of Education

#### **Unit – V: Contents in Education**

- Basic principles of curriculum development
- Techniques in Education: Formal – lectures, presentations, symposium, seminar, discussion, Role play, Street play,
- Importance of Mass-media education

#### **Unit- VI: Training in Education**

- Concept and Importance of training
- Content of training
- Types of training

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## **URCD – 1: URBAN DEVELOPMENT**

### **Section – I**

#### **Unit – I: Basic Concepts in Urban Development**

- Meaning and concept of Urban Development
- Characteristics of urban development.
- Need for Urban Development

#### **Unit – II: Urban Development Policies**

- Slum Rehabilitation policy
- Urban Housing Policy

#### **Unit – III: Basic Services and infrastructure in Urban areas**

- Basic services: City transport, Internal roads, public toilets, electricity, etc.
- Sanitation and Water supply
- Health and education

### **Section – II**

#### **Unit – IV: Urban Development and Slums**

- Growth of slum areas
- Issues in slums
- Impact of slums on urban development

#### **Unit – V: Problems and issues in Urban Development -I**

- Migration
- Solid waste management
- Crime in cities

#### **Unit – VI: Problems and issues in Urban Development -II**

- Environmental Protection
- Housing
- Urban Poverty
- Social inclusion and slum development

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2. Urban Development Ramanath Jha and Dr. V.V.Kulkarni (2018) Published by Current Publications, Agra
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## URCD – 2: RURAL DEVELOPMENT

### Section – I

#### Unit-I: Introduction to Rural Development

- Concept and meaning of Rural development
- Need of Rural development
- Significance of Rural development

#### Unit – II: Rural Development theories

- Economic Development theory,
- Social Change theory
- Infrastructure Development theory

#### Unit-III: Rural Development Policies

- Rural Infrastructure development policy
- Agriculture development policy
- Rural Employment policies
- Challenges in rural Development

### Section – II

#### Unit-IV: Rural Development Programmes

- Mahatma Gandhi National Rural Employment Guarantee Scheme
- National Rural Livelihood Mission (NRLM)
- Swachhabharat Yojana
- DeenDayal Upadhyaya Gramin Kaushalya Yojana
- Pradhanmantri Awas Yojana Gramin
- National Social Assistance Programme
- Antodaya Yojana

#### Unit-V: Role of NGO's and Corporate's in Rural Development

- Poverty alleviation and Employment Generation
- Education, Health and Women Empowerment
- Environment protection and Disaster management

#### Unit-VI: Globalization and its impact on Rural Development

- Globalization and its impact on rural community
- Globalization and Rural Economy – Agriculture, Marketing, etc.
- Globalization and Rural Employment

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## **URCD 3 Community Planning for Development**

### **Unit I: Community planning**

- Need and Objectives of Community planning
- Principles and Dimensions
- Planning methods and tools

### **Unit II : Community Development**

- Areas of Community development
- Holistic approach in Community development
- Application of Social work methods in Community planning

### **Unit III Relationship of Community planning with:**

- Community organization
- Social Development
- Sustainable development

## **Section II**

### **Unit IV Community planning process**

- Developing Community Vision
- Community Need assessment
- Forming planning Committees
- Participatory planning

### **Unit V Community planning types**

- Integrated community planning
- Strategic community planning
- Comprehensive community planning

### **Unit VI Community planning skills**

- Community organization
- Resource mobilization
- Group facilitation
- Reporting and Documentation



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## **HRM&LW – 1: ORGANISATIONAL BEHAVIOUR**

### **Section – I**

#### **Unit - I: Organizational Behaviour**

- Definition and Scope of Organizational Behaviour
- Importance of Organizational Behaviour
- Models of Organizational Behaviour

#### **Unit -II: Human Behaviour at Work**

- Human Needs
- Attitudes – Their formation, measurement and change
- Job satisfaction

#### **Unit – III: Motivation**

- Theories of motivation
- Industrial morale
- Stress and Management

### **Section – II**

#### **Unit –IV: Industrial Conflicts**

- Concept and causes of Industrial conflicts
- Types of conflicts
- Conflict Management

#### **Unit-V: Human Problems in Industry**

- Nature and Types of Human Problems
- Management Initiatives
- Social Work interventions

#### **Unit – VI: Factory as a Social Organization**

- Formal and Informal Groups
- Group Dynamics

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18. Keith Devis : Orginizational Behaviour

## **HRM&LW – 2: TRADE UNIONS IN INDIA**

### **Section – I**

#### **Unit – I: Trade Unions**

- Definitions of Trade Union
- Types of Trade unions
- Functions of Trade unions

#### **Unit –II: Trade Union Movement in India**

- Factors responsible for the Growth of Trade Union Movement
- Stages of Trade Union Development
- Future of Trade Unionism in India

#### **Unit –III: Registration and Recognition of Trade Unions**

- The India Trade Unions Act, 1926
- Status of Recognized Union

### **Section – II**

#### **Unit – IV: Problems of Trade Unions**

- Problems of Leadership in Public, Co-operative and Private Sectors
- Post-Globalisation Issues

#### **Unit – V: Central Trade Unions in India**

- All Indian Trade Union Congress
- Bharatiya Mazdoor Sangh
- Hind Mazdoor Sabha
- All India Railwaymen's Federations

#### **Unit – VI: Role of Trade Unions**

- Labour Welfare
- Job Security and Wage Determination
- Labour Productivity and Standard of living

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## HRM&LW – 3: LABOUR ECONOMICS

### Section – I

#### Unit – I: Labour Economics

- Definitions of Labour Economics
- Scope of Labour Economics
- Characteristics of Labour

#### Unit – II: Employment

- Theories Of Employment
- Full Employment
- Unemployment & Under Employment

#### Unit – III: Wages

- Meaning And Definitions of Wages
- Wage Policy For Developing Economy

### Section – II

#### Unit – IV: Theories of Wages

- Subsistence Theory of Wages
- Marginal Productivity Theory of Wages
- Demand And Supply Theory of Wages

#### Unit –V: Methods of Wage Payment

- Time Rate System
- Piece Rate System
- Balance Method System
- Performance Based System

#### Unit – VI: Labour Productivity

- Definition of Labour Productivity
- Labour Efficiency and Productivity
- Factors of Productivity

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## **AE-1: CORPORATE SOCIAL RESPONSIBILITY**

### **Section – I**

#### **Unit – I: Introduction**

- Concept, meaning and definitions of CSR
- Objectives and Scope of CSR
- Development of CSR
- Functions of CSR
- Scope for Social Work in CSR Activities

#### **Unit – II: Fields of Corporate Social Responsibility**

- Education
- Health and Sanitation
- Gender Empowerment
- Infrastructure development
- Rural Development
- Environment

#### **Unit – III: Essentials of Corporate Social Responsibility**

- Identifying Priorities of the Community
- Community Investment and Employee Volunteering
- Partnership and Stakeholder Dialogue
- Managing CSR Along with Supply Chains

### **Section – II**

#### **Unit – IV: Aspects of Corporate Social Responsibility**

- Social Aspects
- Economical Aspects
- Environment Aspects
- Role of Social Worker in CSR activities

#### **Unit – V: Corporate Social Responsibility Policy and Programmes**

- Policies and Programmes of CSR
- CSR programmes for employees
- Networking with Stakeholders

#### **Unit – VI: Corporate Social Responsibility Strategic Planning and Management**

- Non-financial Risk Assessment and Management
- Aligning CSR Strategies with Financial Performance
- CSR Investment for Poverty Alleviation
- Long Term Development and Commitment

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## Semester II

### CC – 4: PSYCHOLOGY FOR SOCIAL WORKERS

#### Section – I

##### Unit – I: Nature and Scope of Psychology

- Concept and definitions of Psychology
- Areas of Application of Psychology
- Scientific Methods in Psychology

##### Unit – II: Human Development and Human Behaviour

- Concept of Human Growth, Human Development and Human Behaviour
- Environmental Factors affecting Human Behaviour and Development
- Social Factors affecting Human Behaviour and Development

##### Unit – III: Theories of Human Development and Behaviour

- Freud's Psycho-sexual Theory,
- Erickson's Psycho-social Theory
- Jean Piaget's Cognitive Theory

#### Section – II

##### Unit – IV: Developmental Stages in Life Span

- Life span Approach to the understanding of Human Development
- Principles of Human Growth and Development
- Stages of Human Development-from conception to Old Age

##### Unit – V: Biological Factors in Human Development and Behaviour

- Heredity-Concept, mechanisms
- Influence of Heredity on Human Development and Behaviour
- Role of Endocrine Glands

##### Unit – VI: Psycho-social Factors in Human Development

- Motivation
- Conflict among Motives
- Coping and Defense Mechanisms

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## **CC-5 : METHODS OF SOCIAL WORK PRACTICE – WORK WITH COMMUNITY AND SOCIAL ACTION**

### **Section – I**

#### **Unit - I: Community Organization**

- Concept and Definition of Community Organization
- Values of Community Organization
- Principles of Community Organization
- Steps in community Organization Process

#### **Unit -II: Models and techniques in Community Organization Practice**

- Models of Community Organization- Locality development model, Social Planning model, Social Action model, Rothman’s Model
- Techniques in Community Organizations –
  - Participatory Rural Appraisal
  - Rapid Rural Appraisal techniques

#### **Unit – III: Role and Skills of Community Organizer**

- Role of Community Organizer – Guide, Enabler, Expert and Social therapist.
- Skills in community organization practice: interaction skills, documentation skill, organizing skills, resource mobilizing (internal and external) skills and conflict resolution skills.

### **Section – II**

#### **Unit –IV: Community Organization Practice**

- Community Organization Practices in
- Tribal, Rural and Urban / Slum settings
- Areas of community organization – health, education, natural resources management , livelihood resources

#### **Unit-V: Social Action**

- Concept and definition of social action
- Rights based approach
- Forms of Protest
- Strategies for Social Action

#### **Unit – VI: Social Advocacy**

- Concept and Definition of Social Advocacy
- Strategies for advocacy; campaigning, lobbying, use of media.
- Public opinion building in advocacy
- Coalition and Network building.

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## **CC –6: STATISTICS AND COMPUTER APPLICATIONS IN SOCIAL WORK RESEARCH**

### **Section – I**

#### **Unit – I: Statistics**

- Concept, Meaning, Definition of Statistics
- Characteristics and Functions of Statistics
- Social Statistics, Source of Statistics
- Problems in obtaining Social data

#### **Unit – II: Measurements in Social Research**

- Levels of Measurement-Nominal, Ordinal and Ratio
- Scaling Techniques- Likert's, Thurston, Guttman's Scales
- Problems in test of Reliability and Validity of scales
- Quantification of Qualitative data.

#### **Unit – III: Statistical Techniques**

- Measures of Central Tendency for Grouped and Ungrouped Data
- Measures of Dispersion - Range, Deviation, Standard Deviation, Mean Deviation and Variation
- Test of Association: Chi. Square Test, T- Test

### **Section – II**

#### **Unit – IV: Report writing**

- Writing research proposal
- Data analysis and Interpretation
- Presentation and Use of graphs
- Writing research Report

#### **Unit – V: Use and Applications of Computer in Social Research.**

- Introduction to Windows Operating System
- MS-WORD - Word processing, File operations, Formatting documents, working with various tools

#### **Unit – VI: Computer Softwares in Social Research**

- MS-EXCEL - Introduction to Excel applications, Working with Spreadsheets, Type of Data entries, Basic statistical functions & Formulas, Graphical presentations, Handling of Database operations.
- Data Analysis with SPSS package.



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## **FCD – 4 : FAMILY LIFE AND POPULATION EDUCATION**

### **SECTION-I**

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#### **Unit – 1: Family Life Education**

- Concept and meaning of family life education
- Significance of family life education
- Objectives of family life education

#### **Unit-2 Areas of family life education**

- Adolescent Life Skill Training
- Premarital And Marital Preparation
- Planned Parenthood
- Home Management,

#### **Unit-3 :Agencies in family life education**

- Family
- School
- Mass Media

### **SECTION-II**

#### **Unit – 4: Family life Cycle**

- Concept of Family Life Cycle
- Definitions of Family Life Cycle
- Developmental stages in the Family Life Cycle

#### **Unit – 5: Human Sexuality**

- Concept of Human Sexuality
- Myths and Misconceptions regarding Sexuality
- Sexually Transmitted Diseases (STD's)

#### **Unit – 6: Sexuality Education**

- Concept of Sexuality Education
- Objectives and Significance of Sexuality Education
- Sexuality Counseling

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## **FCD- 5: WOMEN EMPOWERMENT**

### **Unit-1: Status of women : Historical Review**

- Vedic and Pre-Vedic Period
- Buddhist Period
- British Period
- Post Independence Period

### **Unit-2 :Issues Related To Women**

- Religion
- Politics
- Domestic Violence

### **Unit-3 : Women Empowerment**

- Concept, meaning and definition of Empowerment
- Indicators of Empowerment
- Factors affecting Empowerment

## **Section II**

### **Unit-4:History of Women Empowerment**

- Global context
- Indian context

### **Unit-5: Empowerment of Women**

- Role of the Government
- Role of International Agencies- UN and UNESCO
- Role of People's Movements

### **Unit-6: Women's Movements**

- Women's Movement in India (19<sup>th</sup> and early 20<sup>th</sup> century)
- International Women's Movement
- Dimensions of Women's Movements

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## **FCD – 6: FEMINIST SOCIAL WORK PRACTICE**

### **Section – I**

#### **Unit – I: Feminism: Conceptual Framework**

- Concept and Meaning of Feminism
- Types of Feminism
- Importance of Feminism in Social Work

#### **Unit – II: Feministic Understanding of Power**

- Patriarchal Structure and Ideology
- Social Construction of Gender
- Cultural Perspectives

#### **Unit – III: Relating Feminism to Social Work**

- Gender and Social Work Practice
- Gender and Development
- Gender Analysis of Poverty

### **Section – II**

#### **Unit – IV: Applications of Feminist Theories to Practice**

- Liberal
- Socialist
- Cultural

#### **Unit – V: Practice Methods and Intervention Strategies**

- Working with Men on Women's Issues
- Working with Gender based Violence

#### **Unit – VI: Feminist Social Work Practice With**

- Individual
- Couple
- Families

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## URCD – 4: TRIBES IN INDIA

### Section – I

#### Unit – I: Tribal Communities in India

- Meaning and definition of tribe
- Origins of tribes– India and Worldwide
- Characteristics of tribes

#### Unit – II: Typology of Tribes

- Primitive Tribes
- Schedule Tribe (ST),
- Particularly Vulnerable Tribal Groups (PVTG) and
- Nomadic Tribes (NT)

#### Unit III: Identity of Tribals

- Spatial distribution of tribals in India
- Tribes in Maharashtra
- Tribal Culture
- Tribal habitat and its characteristics

### Section II

#### Unit IV:Demography of Tribals

- Trends of tribal population
- Key demographic indicators (sex ratio, high IMR and MMR, etc )
- Government Interventions

#### Unit V Issues of Tribal community

- Social Exclusion
- Indebtedness
- Forced Migration
- Vulnerability to calamities

#### Unit VI: Institutional Mechanisms and Interventions for Tribal Development

- Panchayat Extension Scheduled Area (PESA),
- Forest Rights Act (FRA),
- Tribal Sub Plan(TSP)
- Initiatives of non-government organizations and through CSR



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2. Tribes in India – Dr. M.P.Kanasker and Dr. V.V.Kulkarni, (2018) Published by Current Publications, Agra
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## **URCD – 5: PANCHAYAT RAJ SYSTEM**

### **Section – I**

#### **Unit – I: Panchayat Raj System**

- Meaning, Concept of Panchayat Raj System
- Objectives of Panchayat Raj System
- Historical development and committees on Panchayati Raj

#### **Unit – II: Panchayati Raj in Operation**

- Concept of democratic decentralization
- Organizational and administrative structure of Panchayati Raj
- Panchayati Raj functionaries at village, block and district level with reference to Maharashtra

#### **Unit – III: Aspects of Panchayat Raj Administration**

- Functions of Panchayati Raj institutions
- Gram Sabha and Mahila Sabha– organization, strengths and limitations
- State control over Panchayati Raj bodies
- Financial resources to PRIs- Central and State and **Own Self Resources**

### **Section – II**

#### **Unit – IV: Laws related to Panchayat Raj**

- The Constitution 73<sup>rd</sup> Amendment Act, 1992
- Panchayat Raj Act, 1993
- Panchayats Extension to Scheduled Areas Act (PESA) 1996.

#### **Unit – V: Rural development and PRIs**

- NGOs and Peoples participation in PRI
- Social Justice through PRI
- Politics in Panchayat Raj
- **Women Empowerment through PRIs**

#### **Unit – VI: Challenges in Panchayat Raj System**

- Community dynamics and Panchayati Raj
- Social inclusion and Panchayati Raj
- Globalisation and Panchayati Raj

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## **URCD – 6: Community Development Models and Approaches**

### **Section – I:**

#### **Unit – I: Introduction**

- Concept, meaning and definition of community development
- Process of community development
- Issues in community development
- Community development Administration

#### **Unit – II: Models of Community Development**

- Rothman's Model
- Locality Development Model
- Social Planning Model
- Social Action Model
- Life cycle model

#### **Unit – III: Community Development Approaches**

- Technical Assistance approach,,
- Self-Help Approach
- Field approach
- Integrated approach

### **Section – II:**

#### **Unit – IV: Community Resource Management**

- Resource management – Concept, meaning, importance and elements
- Types of resources - Human, material and financial resources
- Role of Government in resource management

#### **Unit – V: Sustainable Community Development**

- Concept, significance and implications
- Areas of sustainable development – Agriculture, Health, Infrastructure and Environment.
- Problems in sustainable community development

#### **Unit – VI: Community Development Project**

- Process of project Planning
- Project formulation
- Project implementation
- Monitoring and evaluation of project
- Management Information Systems (MIS) in community development

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## **HRM&LW – 4: LABOUR LEGISLATION**

### Section – I

#### Unit – I: Labour Legislation in India

- Concept and Meaning of Labour Legislation
- Objectives and Importance of Labour Laws
- Development of Labour Laws

#### Unit – II: The Factories Act, 1948

- Conceptual framework
- Health, Safety and welfare provisions
- Leave provisions

#### Unit – III: A) The Bombay Shops and Establishment Act, 1948 B) Contract Labour (Regulation and Abolition) Act, 1970

### Section – II

#### Unit – IV: A) The Plantations Act, 1951 B) Mines Acts, 1952

#### Unit – V: A) The Bombay Industrial Relations Act, 1946 B) The Industrial Employment (Standing Orders) Act, 1946

#### Unit – VI: The Industrial Disputes Act, 1947

- Definition of Industrial Dispute
- Machinery for settlement
- Machinery for prevention

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Section – I

Unit – I: Human Resources Management

- Definitions and Scope of H.R.M.
- Objectives of H.R.M.
- Functions of H.R Manager

Unit – II: Human Resources Management Sub-System

- Career Planning and Development
- Performance Appraisal
- Organizational Development

Unit – III: Training and Development

- Need and Importance of Training and Development
- Types and Methods of Training
- Executive Development Programmes

Section – II

Unit – IV: Wage and Salary Administration

- Definitions and Types of Wages
- Principle of Wage and Salary Administration
- Executive Compensation Plans

Unit – V: Total Quality Management

- Concept and Principles of Total Quality Management
- Quality Management Process
- Productivity and Quality Management

Unit -VI: Professional Management and Skill Development

- Managerial Levels and Skills
- Institution Building : Skills of Top Executive
- Tasks of a Professional Manager



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Section – I

Unit – I: Concept and Nature of Communication

- Process and Objectives of Communication.
- Barriers to Communication.
- Seven Cs of effective communication

Unit – II: Verbal and Non-Verbal Communication

- Meaning of Verbal and Non-Verbal Communication
- Essentials of effective communication,
- Professional dressing and body language.

Unit – III: Types of Speeches

- Managerial speeches
- Presentations and Extempore speech
- Speech of thanks,
- Theme speech.

Section – II

Unit – IV: Effective Presentations:

- Organising Presentation
- Principles of Effective Presentations,
- Qualities of skillful Presenter

Unit –V: Interview Skills:

- Mastering the art of giving interviews in:
  - Selection or placement interviews,
  - Appraisal interviews,
  - Exit interviews,
  - Web /video conferencing,
  - Skype Interview
  - Tele-meeting

Unit – VI: Report Writing:

- Report Planning and outline,
- Types of reports
- Logical Sequencing, Graphs and Charts,
- Executive Summary

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## SE-1-: SOCIAL WORK AND SKILL DEVELOPMENT

### Section – I

#### Unit – I: Self Awareness and Development

- Self-concept and Factors affecting Self-concept
- Concept and meaning of Self-Development
- Significance of Self Development for Social Workers

#### Unit – II: Sensitivity

- Meaning of Sensitivity
- Gender Sensitivity
- Sensitivity regarding Special- Needs

#### Unit – III: Perception

- Understanding Perception
- Distortions in Perception
- Understanding Stereotypes

### Section – II

#### Unit – IV: Communication

- Concept of Communication
- Communication Process
- Barriers in Communication
- Use of Audio-Visual Media

#### Unit – V: Skills for Social Work Methods

- Skills for working with Individuals
- Skills for working with Groups
- Simulation Games
- Role Play and Street Plays

#### Unit – VI: Career and Work

- Models of career choice and development: Holland and Super
- Work life balance: Work holism, family roles, recreation

## REFERENCES:

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## Semester III

### CC-7: INTRODUCTION TO SOCIOLOGY AND INDIAN SOCIAL PROBLEMS

#### Section – I

##### Unit – I: Introduction

- Definition and scope of Sociology
- Basic Concepts of Sociology –Society ,Groups, Community, Culture and Norms
- Importance of sociology and its relevance to social work practice

##### Unit – II: Indian Society

- Meaning ,Concept and definitions of Society
- Characteristics of Indian Society
- Social Classification: Tribal, Rural & Urban
- Social Stratification: Caste & Class

##### Unit – III: Society and Culture

- Culture,
- Customs ,
- Traditions,
- Values,
- Norms,
- Folkways and
- Mores

#### Section – II

##### Unit – IV: Indian Social Problems-1

- Population explosion
- Corruption
- Terrorism
- Naxalism

##### Unit – V: Indian Social Problems-2

- Casticism
- Problems of elderly
- Crime and juvenile delinquency
- addiction

##### Unit – VI: Social Change

- Meaning and Characteristics of Social Change
- Factors Inducing Social Change
- Social disorganization

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## **CC – 8: SOCIAL LEGISLATIONS**

### **Section – I**

#### **Unit – I: Introduction to Social Laws**

- Nature and Scope of Social Legislation
- Objectives of Social Legislation
- Role of the Social Worker in Promoting Social Legislations

#### **Unit – II: Laws Related to Marriage**

- The Hindu Marriage Act, 1955
- The Child Marriage Restraint Act. 1929

#### **Unit – III: Laws Related to Children**

- Juvenile Justice Act (Care and Protection), 2015
- Right to Education Act, 2009
- Protection of children from sexual offences Act 2013

### **Section – II**

#### **Unit – IV: Laws Related to Women**

- The Family Court Act 1984
- The Dowry Prohibition Act, 1961

#### **Unit – V: Protective Laws**

- The Sexual Harassment of Women at Work Place (prevention , prohibition and redressal) Act, 2013
- Protection of Women from Domestic Violence Act 2005
- The Pre-conception and Pre-natal Diagnostic Techniques (Prohibition of Sex Selection) Act ,1994

#### **Unit – VI: General Laws**

- Right to Information Act, 2005.
- The Scheduled Castes and Scheduled Tribes (Prevention and Atrocities) Act 1989
- Maintenance and Welfare of Parents, Senior Citizens Act, 2007



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## CC-9: SOCIAL POLICY AND PLANNING

### Section – I

#### Unit – I: Social Policy

- Concept and definitions of Social Policy and Social Welfare Policy
- Relationship between Social Policy, Social Welfare Policy and Social Development
- Values underlying Social Policy based on the Constitutional Provisions

#### Unit – II: Approaches to Social Policy

- Unified Approach
- Integrated Approach
- Sectoral Approach

#### Unit – III: Sectoral Social Policies

- Women's Policy
- Backward Class Policy
- Youth Policy
- Family Policy

### Section – II

#### Unit – IV: Social Planning

- Concept of Social and Developmental Planning
- Scope of Social Planning
- Planning as an Instrument and Source of Policy
- The Constitutional status for Planning

#### Unit – V: The Machinery of Social Planning.

- Niti Aayog of India – The Legal Status, Structure and Functions
- State Niti Aayog
- District Planning Committee

#### Unit – VI: Process of Planning in India

- Role of Central Government
- Role of State Government
- Role of Panchayat Raj Institution

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## **FCD – 7: PROGRAMMES AND SERVICES FOR CHILDREN**

### **Section – I**

#### **Unit – I: Child Welfare**

- Concept and Goals of Child Welfare
- Constitutional Provisions for Children in India
- Juvenile Justice (Care and Protection of Children) Act 2015

#### **Unit – II: Special Initiatives for Children**

- UN Convention on Rights of Children (CRC)
- National Policy for Children

#### **Unit – III: Family based Programmes / Non- Institutional Services**

- Adoption ,
- Foster Care,
- Sponsorship

### **Section – II**

#### **Unit – IV: Institutional Services For Children**

- Observation Homes
- Juvenile Homes
- Special Homes
- SOS Children's Village

#### **Unit – V: Family Strengthening Programmes (FSP) –**

- Integrated Child Development Services (ICDS),
- Child Guidance Clinic,
- Crèches

#### **Unit – VI: Factors Affecting Child Welfare Services**

- Social Factors
- Political factors
- Economic factors

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## **FCD-8 : YOUTH DEVELOPMENT**

### **SECTION-II**

#### **Unit – 1: Meaning of Youth**

- Concept and definition of Youth
- Characteristics of Youth
- Demographic profile of Youth in India.

#### **Unit – 2: Needs of Youth**

- Psycho-social needs.
- Health
- Education
- Employment

#### **Unit -3: Problems of Youth**

- Unemployment
- Addictions
- Violence and Crime

### **SECTION-II**

#### **Unit – 4 : Issues concerning Youth**

- Identity Crisis
- Youth Unrest
- Casteism
- Politics

#### **Unit – 5 : Youth and Social Change**

- Youth as an agent of Social Change
- Youth Movements in India

#### **Unit – 6: Programmes and Policies.**

- Youth Policy
- Government Initiatives
- Non-Governmental Initiatives

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## **FCD-9 : Development Communication for Social Workers**

### **SECTION-I**

#### **Unit – 1: Concept and Functions of Communication**

- Concept and meaning of communication and development communication
- Objectives and importance of communication in development
- Functions of development communication

#### **Unit – 2: Communication Planning**

- Meaning and scope of communication planning
- Training for effective communication.
- Role of social worker in development communication

#### **Unit – 3: Communication Process**

- Meaning and components of communication process
- Selection of communication channels
- Barriers to communication

### **SECTION-II**

#### **Unit – 4: Organizational Communication**

- Meaning and components of organizational communication
- Types of organizational communication
- Process of organizational communication

#### **Unit – 5: Media in Communication**

- Audio Visual Media
- Electronic media
- Folk media:

#### **Unit-6: Communication Skills for Development Functionaries**

- Writing Skills: News release, feature writing, reports, case studies, stories, letters to the editor
- Verbal Skill : Presentation Skills and Public speaking
- Interfacing with mass media (Film, TV, Press, Radio conferences/interviews) and media advocacy



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## **URCD –7: URBAN PLANNING AND GOVERNANCE**

### **Section – I**

#### **Unit – I: Urban Planning in India**

- Concept of city and Town Planning
- Town Planning and Development Plan
- Advantages and Disadvantages of planning schemes
- Problems and challenges in urban planning

#### **Unit – II: Urban Planning Policies and Programs**

- Town Planning policy and schemes
- District planning committee
- Metropolitan planning committee

#### **Unit – III Urbanization**

- Concept of Urbanization and Smart City
- Factors of Urbanization
- Social Implications of Urbanization

#### **Unit – IV: Urban Governance**

- Concept, Meaning and Significance
- History of Local Self Government in India
- Forms of Local Self Government – Municipal Council, Municipality and Municipal Corporation.

#### **Unit – V: Statutory Provisions**

- The 74th Constitutional Amendment Act, 1992
- Bombay Municipal Corporation Act, 1956
- Housing Policies

#### **Unit – VI: Organizational and Administrative Structure of Municipal Institutions**

- Infrastructure and Developmental functions
- State Control over Urban Local Bodies
- Statutory and Non-Statutory functions

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## **URCD 8 Natural Resource Management and Livelihood Resources**

### **Section I**

#### **Unit 1: Introduction**

- Meaning and Definition of Natural resources
- Basic natural resources: Jal, Jangal, Jamin, Jan and Janwar
- Relationship between Natural resources and Development

#### **Unit 2: Natural Resource Management**

- Definition of Natural Resource Management
- Need of Natural Resource Management
- Social and Political responsibilities for environmental conservation and protection: environmental education, significant political and social movements

#### **Unit 3: Approaches of Natural Resource Management**

- Top-down or Command and control
- Bottom-Up (regional or community based NRM)
- Adaptive management
- Integrated approach (INRM)

### **Section II**

#### **Unit 4: Introduction to Livelihood Resources**

- Concepts and scope of livelihood
- Types and resources of Livelihood in rural and tribal areas
- Livelihoods and relation with Natural Resource Management

#### **Unit 5 Threats and Challenges to Natural Resources and livelihoods**

- Development Programme and Natural Resources
- Environmental issues and natural resources
- Sustainable agriculture and regeneration of rural resources.
- Forest based resources and social forestry;

#### **Unit 6: Sustainable development and natural resources**

- Govt. Control over Natural resources
- Sustainable development goals related to natural Resources
- Legislation related to protection of natural resources

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## **URCD – 9: CO-OPERATIVE PRACTICES IN RURAL DEVELOPMENT**

### **Section – I**

#### **Unit – I: Introduction to Co-operation**

- Meaning, concepts, & Definition of co-operation
- Philosophy, Values and Principles
- Co-operative Movement
- Fields of co-operation

#### **Unit – II: Co-operatives and rural development**

- Types of co-operative societies
- National agencies: NIRD, CAPART
- Cooperative credit societies
- Case studies: Warna Nagar Cooperative Village development projects, Pravra Nagar Cooperative projects, Anand Cooperative dairy project
- 

#### **Unit – III: Co-operative Legislation**

- The Maharashtra Co-operative Societies Act, 1960
- The Indian Co-operative Societies Act, 1904

### **Section – II**

#### **Unit – IV: Role of Co-operatives**

- Role of Co-operatives in Poverty Alleviation
- Role of Co-operatives in Agriculture Sector
- Income generation and co-operatives

#### **Unit – V: Fields of Co-operatives**

- Labour Co-operatives
- Dairy Co-operatives
- Fishery Co-operatives
- Co-op Banks and credit Societies

#### **Unit – VI: Issues and challenges in co-operatives**

- Politics in Co-operation
- Impact of Globalization on Co operatives
- Problems of Co-operative Organization

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## **HRM&LW – 7: SOCIAL SECURITY AND LAWS RELATED TO WAGES**

### **Section – I**

#### **Unit – I: Social Security**

- Concept and Meaning of Social Security
- Types of Social Security
- Scope of Social Security

#### **Unit II: Laws Related to Social Security**

- The Employees State Insurance Act, 1948
- The Employees Provident Funds and Miscellaneous Provisions Act, 1952
- Maternity Benefit Act, 1961

#### **Unit III:**

- A) The Workmen's Compensation Act, 1923
- B) Payment of Gratuity Act, 1972
- C) The Employee's Pension Scheme, 1995

### **Section – II**

#### **Unit – IV: Laws Related to Wages**

- The Minimum Wages Act, 1948
- The Payment of Wages Act, 1936

#### **Unit – V: Dispute Settlement Machinery**

- Labour Court
- Industrial Tribunal
- National Tribunal

#### **Unit – VI: Execution and Administration of Labour Laws**

- State labour department
- The Bombay Labour Welfare Fund Act, 1953.



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## **HRM&LW – 8: PUBLIC RELATIONS & CORPORATE COMMUNICATIONS**

### **Section – I**

#### **Unit I : Public Relations**

- Concept, theory, history & practice of public relations,
- Importance of PR for HR professionals,
- PR campaign & strategies for PR,
- Evaluating PR activities

#### **Unit II : Media Relations**

- Building and maintaining credible relationship with media
- Developing methodologies for successful practice of media relations
- 

#### **Unit III : Public Opinion –**

- Meaning and Definition
- Roots of Public Attitudes – Culture, Family, Religion, Economic and Social Classes
- Role of PR in opinion formation.

### **Section - II**

#### **Unit IV : Communication**

- Definition and Characteristics
- Objectives of Communication
- Types of Communication

#### **Unit V : Corporate Communication**

- Introduction to corporate communication,
- Online public relations in Corporates

#### **Unit VI : Communication Management**

- Presentation skills
- Developing strategic communication plan
- Event Management

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## **HRM&LW – 9: PERSONNEL MANAGEMENT**

### **Section – I**

#### **Unit – I: Introduction**

- Definitions and Scope of Personnel Management
- Principles of Personnel Management
- Personnel Department and Functions

#### **Unit – II: Manpower Planning**

- Meaning and Definition of Manpower Planning
- Objectives of Manpower Planning
- Short Term and Long Term Manpower Planning

#### **Unit – III: Recruitment**

- Recruitment – Sources and Process
- Steps in Scientific Selection
- Induction and Placement

### **Section – II**

#### **Unit – IV: Personnel Policies**

- Aims and Objective of Personnel Policies
- Need for Personnel Policies
- Sources of Personnel Policies
- Types of Personnel Policies

#### **Unit – V: Personnel Audit**

- Meaning of Personnel Audit and Research
- Objectives of Personnel Audit
- Need and Importance of Personnel Audit

#### **Unit – VI: Personnel Research**

- Meaning and Characteristics of Personnel Research
- Methods and Tools of Personnel Research

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## **AE-2: ENVIRONMENTAL ISSUES AND DISASTER MANAGEMENT**

### **Section – I**

#### **Unit – I: Introduction**

- Concept and Definitions of Environment
- Physical, Social and Communal Environment
- Environment Education; need and objectives
- Global Environmental Issues

#### **Unit – II: Approaches and Models of Environment Education**

- Service approach and Action approach
- Sustainable development approach
- Interdisciplinary model and Multi – disciplinary model
- Social Development model and Economic development model

#### **Unit – III: Concepts in Disaster Management**

- Disasters, Risks, Hazards, Vulnerability, Disaster Cycle
- Relief and Rehabilitation in Disaster, Logistic Management
- Disaster preparedness and disaster mitigation
- Initiatives in disaster management

### **Section – II**

#### **Unit – IV: Classification of Disasters**

- Meaning of Natural and Human made disasters.
- Types of disasters: Famine and drought, Floods, Cyclone, Storms, Tsunami, Earthquakes, Riots, Industrial Accidents, Road-Air-Rail Accidents, Bomb-blast and explosions, War, Avalanches and landslides.

#### **Unit – V: Disaster Responses and Mitigation:**

- Prevention and preparedness – Disaster response at various stages of disasters: evacuation and rescue; emergency supplies; early warning systems and vulnerability reduction; disaster financing: provisions and procedures.
- Aid administration and management
- Technological options for disaster response and preparedness

#### **Unit – VI: Relief and Rehabilitation**

- Relief – Damage and needs assessment.
- Rehabilitation and Recovery - Planning for rehabilitation and recovery, displacement and resettlement.
- Community Participation and capacity building for facing disasters
- Disaster Management Act, 2005.

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16. Assistance, SBS Publishers & Distributors Pvt. Ltd.

**SEMESTER IV**  
**CC- 10: COUNSELLING IN SOCIAL WORK**

**Section I**

**Unit – I: Conceptual Framework**

- Concept, definitions, and Scope of Counselling
- Counselling- as an Art and Science
- Levels and types of Counselling
- Principles of Counselling

**Unit – II: Counselling Goals and Skills**

- Goals of Counselling
- Essential Qualities for a Counsellor
- Counselling Skills

**Unit – III: Phases in the Counselling Process**

- Attending Phase
- Exploration Phase
- Understanding /Problem Analysis Phase
- Action Phase
- Termination Phase

**Section – II**

**Unit – IV: Techniques and Models of Counselling**

- Directive Model
- Non-directive Model
- REBT Model
- Transactional analysis

**Unit – V: Counselling in Various Settings - I**

- Sexuality Counselling
- HIV/AIDS Counselling
- Marriage Counselling

**Unit – VI: Counselling in Various Settings -II**

- De- Addiction Counselling
- Industrial Counselling
- School Counselling



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17. Child Development and socialization Dr.Usha Verghese and Dr.Nisha Waghmare.- (2018) Published by School of Distance Education, Bharati Vidyapeeth Deemed University, PUNE
- 18 Introduction to Psychology, Dr. Bharati Chavan, Tanuja Kher 2019, Published by School of Distance Education, Bharati Vidyapeeth Deemed University, PUNE
- 19 Psychology for Social Workers, Dr. Bharati Chavan 2019, Published by School of Distance Education, Bharati Vidyapeeth Deemed University, PUNE

## **CC - 11: INTRODUCTION TO CONSTITUTION AND HUMAN RIGHTS**

### **Section – I**

#### **Unit – I: Nature of the Constitution**

- Nature and Concept of the Indian Constitution
- Historical background of Indian Constitution.
- The Preamble
- Special Features of the Indian Constitution

#### **Unit – II: Philosophy of the Constitution**

- Independent and Sovereign
- A Representative Democracy and Democratic Society.
- Political, Economic and Social Justice.
- Liberty, Equality and Fraternity.

#### **Unit – III: Fundamental rights**

- Fundamental rights,
- Fundamental duties
- Directive principles of state policies

### **Section – II**

#### **Unit – IV: Introduction to Human Rights:**

- Nature, Concept and Definitions of Human Rights
- Historical Background of Human Rights at the International Level
- Historical Background of Human Rights in India

#### **Unit – V : Human Rights Framework in India:**

- Protection of Human Rights Act, 1993
- Composition, role and Functions of NHRC;
- Composition, role and Functions of SHRCs;

#### **Unit VI: Rights of Vulnerable sections**

- Women and children
- Schedule Caste
- Schedule tribe, NT, DNT, VJNT
- Elderly people

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  - b) Bonded Labour System (Abolition) Act, 1976
  - c) Child Labour Issues & Child Labour (Prohibition and Regulation) Act, 1986
  - d) SC/ST issues & Scheduled Caste and Scheduled Tribe (Prevention of Atrocities) Act, 1989, Civil Liberties Act, 1988 & The Forest Rights Act, 2006

## CC-12: COMMUNITY HEALTH AND HEALTH CARE SYSTEM

### Section – I

#### Unit – I: Community Health

- Concept and definitions of Health, Standards of Health ,
- Individual and community health
- Factors Affecting Health
- Concept of Diseases, Classification of diseases ,Mode of Transmission of Diseases

#### Unit – II: Public Health and Health Care Services

- History of Public Health in India
- Public Health Programmes in India- Village , Block, District Levels
- Health Policy and Administration

#### Unit – III: Government Initiatives in Public Health

- National Urban Health Mission-Objectives, Structure, Services
- National Rural Health Mission- Objectives, Structure, Services
- Issues in Public Health services

### Section – II

#### Unit – IV: Prevention and Control of Diseases

- Concept of Control and Prevention of diseases
- Prevention and Control of : Communicable Diseases, -
- Measles ii) Mumps iii) Polio iv) Chicken Pox v) Rubella vi) Tetanus vii) Whooping cough viii) Diphtheria
- Levels of Prevention : Primary level, Secondary level & Tertiary level

#### Unit – V: Malnutrition

- Concept and Definition of Malnutrition
- Social aspects of Nutrition
- Diseases and Conditions related to Malnutrition
- Vitamin deficiency, Anemia, Iodine deficiency

#### Unit –VI: Community Health Care and Social Work

- Health Education and Counseling
- Application of Social Work Methods in Health Care
- Role of Social Worker in Community Health Care Programme

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## **FCD- 10: FAMILY COUNSELING**

### **SECTION-I**

#### **Unit 1: Family as a System**

- Characteristics of a Healthy Family
- Stages of Family Development
- Holistic Family Assessment

#### **Unit 2: Marital issues**

- Alternatives to Marriage
- Marital Conflict
- Divorce And Remarriage

#### **Unit 3: Marriage and Family Counselling**

- Marriage and Marital Relationships
- Marital Adjustment
- Pre-Marital and Marital Counselling

### **SECTION-II**

#### **Unit 4: Intervention in Family Related Issues- I**

- Sexuality Counselling
- Infertility Counselling
- Pregnancy related Counselling

#### **Unit 5: Intervention in Family Related Issues- II**

- Pre and Post Adoptive Counselling
- Child Related Issues
- Domestic Violence

#### **Unit 6: Techniques and Approaches in Family Counselling**

- Directive – Non Directive- Eclectic Approach
- Rational Emotive Therapy
- Transactional Analysis

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## **FCD – 11: GENDER STUDIES**

### **Section-I**

#### **Unit 1: Introduction**

- Gender Studies – Concept, Meaning and Definition
- Women Studies- Concept and Importance
- Social Construction of Gender

#### **Unit 2: Gender Issues**

- Gender and Class
- Gender and Religion / Caste
- Gender and Sexuality

#### **Unit 3: Feminism**

- Concept and Meaning of Feminism
- Major Feminist Issues
- Importance of Feminism in Social Work

### **Section –II**

#### **Unit 4: Gender and Culture**

- Culture and Feminism
- Gender Inequities
- Media and Gender

#### **Unit – V: Contemporary Issues of Women**

- Issues of SC,ST,OBC & VJNT Women
- Female Foeticide
- Domestic Violence

#### **Unit – VI: Gender Policy and Programmes**

- National and State policy for Women empowerment
- Governmental and NGO Initiatives
- Role of Women's Commission



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- 8) Sohan Singh – Social Education.

## **FCD – 12: INTRODUCTION TO GERONTOLOGY**

### **SECTION-I**

#### **Unit – I: Introduction to Gerontology**

- Concept and Definition of Gerontology
- Concept and Process of Aging
- Demography of Ageing

#### **Unit – II: Problems of Ageing**

- Dementia
- Alzheimer
- Elder Abuse

#### **Unit – III: Sociology of Ageing**

- Socio-cultural Aspects of Aging
- Family and Kinship Relations
- Feminization of Ageing

### **SECTION-II**

#### **Unit – IV: Psychology of Ageing**

- Memory loss
- Personality disorders
- Mental health

#### **Unit – V: Policy, Programmes and Services of the Ageing:**

- National Policy on Ageing
- Constitutional Provisions for Elderly Care
- The Maintenance and Welfare of Parents and Senior Citizen Act, 2007.

#### **Unit – VI: Interventions Strategies**

- G.O/NGO Initiatives for Elderly Care
- Social Work Intervention
- Nontraditional Approaches in Intervention -Music, Art, Drama, Pet Therapy

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## URCD 10 SUSTAINABLE DEVELOPMENT

### **Unit 1: Sustainable and Inclusive Development – Genesis and Definition**

- Definition and concept of Human Development, Sustainable and Inclusive Development
- Approaches of Sustainable Development
- Genesis of Sustainable and Inclusive Development

### **Unit 2: Mechanisms for Sustainable and Inclusive Development**

- Mechanisms in Indian context (government, non-government, CSR, International Development Agencies)
- Planning Process of SD : five year plan to NITI Aayog
- Current schemes and Programmes of S & I D
- Impact of Schemes and Programmes

### **Unit 3: Social Implications of Inclusive Development**

- Inclusive Development and social Integration
- Inclusive Development and upliftment of weaker sections
- Inclusive Development and Women Empowerment

## **Section II**

### **Unit 4: Sustainable development Goals and Indicators (I)**

GOAL 1: No Poverty

GOAL 2: Zero Hunger

GOAL 3: Good Health and Well-being

GOAL 4: Quality Education

GOAL 5: Gender Equality

GOAL 6: Clean Water and Sanitation

### **Unit 5: Sustainable development Goals and Indicators (II)**

GOAL 7: Affordable and Clean Energy

GOAL 8: Decent Work and Economic Growth

GOAL 9: Industry, Innovation and Infrastructure

GOAL 10: Reduced Inequality

GOAL 11: Sustainable Cities and Communities

GOAL 12: Responsible Consumption and Production

### **Unit 5: Sustainable development Goals and Indicators (III)**

GOAL 13: Climate Action

GOAL 14: Life Below Water

GOAL 15: Life on Land

GOAL 16: Peace and Justice Strong Institutions

GOAL 17: Partnerships to achieve the Goal

## **URCD 11: COMMUNITY PARTICIPATION AND MANAGEMENT**

### **Section – I**

#### **Unit – I: Introduction to Community participation**

- Meaning and Concept of Community participation
- Need and significance of community participation
- Community organization and community participation

#### **Unit – II: Community participation – Stages, techniques, process**

- Stages of community participation
- Techniques and tools of community participation
- Process of community participation

#### **Unit – III: Community Participation and Panchyat raj**

- Social Inclusion and community participation
- community participation in PRIs
- Dynamics in community participation

### **Section – II**

#### **Unit – IV: Areas of community Management**

- Community Management Concept and significance
- Management of community based services
- Management of Community infrastructure

#### **Unit – V: Community Managerial skills**

- Recording and documentation
- Community organization skills
- Project management skills
- Group facilitation and community consultation skills

#### **Unit – VI: Community project monitoring and evaluation**

- Developing MIS
- Monitoring and supervision
- Project Evaluation
- Impact Assessment

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## URCD – 12: TRIBAL DEVELOPMENT

### Section – I

#### Unit I - Introduction to tribal development

- Tribal Community and its characteristics
- Tribal habitat and its characteristics
- Constitutional provisions for Tribals

#### Unit – II: Statutory Safeguards

- 73<sup>rd</sup> Constitutional Amendment
- Forest Rights Act, 2006
- Biodiversity Act 2002

#### Unit – III: Developmental Issues of Tribals

- Economy: Poverty and Unemployment
- Health, Education and Social exploitation
- Impact of urbanisation and industrialisation on tribal communities

### Section – II

#### Unit – IV: Tribal Development Policy and Programmes

- Concept of Integrated Tribal Development & Tribal Sub-Plan
- Tribal Development Policy – 2004
- Programmes for Tribal Development

#### Unit – V: Livelihoods for Tribal Community

- Sources of Livelihoods and Assets development
- Infrastructural Development
- Natural development and Environmental development

#### Unit – VI: Tribal Development Administration

- Tribal power structure and community dynamics
- District level administration
- State level administration
- National level administration

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## **HRM&LW – 10: LABOUR WELFARE**

### **Section – I**

#### **Unit – I: Introduction to Labour Welfare**

- Concept and definitions of labour welfare
- Objectives of labour welfare
- Current trends in labour welfare

#### **Unit- II: Labour Welfare Policy & Practices in India**

- National policy on labour welfare
- Agencies of labour welfare
- Role of labour welfare officer

#### **Unit – III: Types of Labour Welfare**

- Intra-mural and Extra-mural Labour Welfare Facilities
- Statutory and Non-statutory Welfare Facilities

### **Section – II**

#### **Unit – IV: Welfare of Special Category Labour**

- Female Labour
- Child Labour
- Construction Labour
- Agriculture Labour and other unorganized sector labour

#### **Unit – V: Maharashtra Labour Welfare Board**

- Structure of Maharashtra Labour Welfare Board
- Activities/Schemes of Maharashtra labour welfare board

#### **Unit – VI: Social Work in Industry**

- Meaning and Concept of Industrial Social Work
- Application of Social Work Methods
- Employee Counselling

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## **HRM&LW – 11: INDUSTRIAL RELATIONS AND CASE STUDIES**

### **Section – I**

#### **Unit – I: Introduction**

- Concept and Definitions of Industrial Relations
- Objectives and Scope of Industrial Relations
- Factors of Good Industrial Relations

#### **Unit – II: Agencies of Industrial Relations**

- The Role of Government
- Changing role of trade unions in industrial relations
- Role of employers in industrial relations

#### **Unit – III: Collective Bargaining**

- Meaning and definitions of collective bargaining
- Types of collective bargaining
- Workers participation in industrial relations

### **Section – II:**

#### **Unit – IV: Industrial Disputes and Settlement Machinery**

- Definition of Industrial Disputes
- Settlement Machinery :
  - Conciliation
  - Arbitration
  - Adjudication

#### **Unit –V: Futuristic Issues in Industrial Relations**

- Redesigning Industrial Relations
- Impact of Globalisation on Industrial Relations

#### **Unit – VI: Case Studies in Industrial Relations**

- Case Studies Related to:
  - Strike, Lockout, Layoff,
  - Retrenchment, Termination,
  - Discharge and Dismissal,
  - Principles of Natural Justice

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## **HRM&LW – 12: PERFORMANCE MANAGEMENT**

### **Section – I**

#### **Unit – I: Introduction to Performance Management**

- Meaning and Definition of performance management.
- Scope of performance management.
- Effectiveness of performance management

#### **Unit – II: Application of Performance Management**

- Developing an effective MIS
- Performance feedback system
- Performance management and job evaluation

#### **Unit – III: Performance Management Process**

- Defining performance measures
- Types of measures
- Criteria for performance measures
- Setting performance standards

### **Section – II**

#### **Unit – IV: Developing and Maintaining Performance Management Systems**

- Introducing Performance Management to employees and enabling learning about performance management
- Performance management training
- Evaluating performance management

#### **Unit – V: Impact of Performance Management Systems on Individuals and Organizations**

- Role of Performance management for improving employee performance
- Strategic linkages in Performance management
- Achievement of organizational goals

#### **Unit – VI: Evaluation of Performance Management Systems**

- Balance Score card as management system
- Linking multiple score card measures to a single strategy
- The Balance score card model- Financial perspective, Customer perspective, Internal Business Process Perspective, Learning and Growth Perspective

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## SE-2 : MEDIA AND DEVELOPMENT

### Section – I

#### Unit – I: Understanding Media

- Concept and meaning of Media
- Scope of media in development
- Role of Media in a Democracy
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#### Unit – II: Types of Media:

- Print Media
- Electronic media
- Folk and cultural media
- Challenges for media

#### Unit – III: Media and Development – I

- Role of Press in Social & Political Movements
- Freedom of Press
- Role of Press Council of India

### Section – II

#### Unit – IV: Media and Development – II

- Representation of Different Groups- Stereotyping and Labelling in Media
- Content of Newspaper: News Stories, Features, Articles, Editorial, Advertorial, Advertisements & Public Relations

#### Unit –V: Media and Society

- Understanding the Role of Media in Development
- Writing on Development Issues
- Media as Public Service
- Media and Civil Society

#### Unit – VI: Advertising

- Role of Advertising in Marketing
- Types of Advertisements
- Ethics in Advertising

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