



**Dr. D. Y. PATIL VIDYAPEETH, PUNE**  
(Deemed to be University)

**Syllabus for  
Post Graduate  
(Pre - Clinical Subjects)**

**2014 - 15**  
**(Amended / Revised upto July 2019)**



**Dr. D.Y. PATIL VIDYAPEETH, PUNE**  
(Deemed to be University)

(Re-accredited by NAAC with a CGPA of 3.62 on a four point scale at 'A' Grade)  
(An ISO 9001 : 2015 Certified University)

**Dr. A. N. Suryakar**  
Registrar

Ref. No. : DPU/875-vii/2019  
Date : 11/09/2019

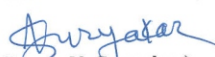
**NOTIFICATION**

Whereas in pursuance of the following decisions taken by the Board of Management, it is hereby notified to all concerned that the "Syllabus for Post Graduate (Pre-Clinical Subjects) – 2014-15" is revised upto July 2019 and hereby published.

- Changes in syllabus for UG and PG in Anatomy, Biochemistry, Community Medicine, vide Resolution No. BM-07-(iii)-4 dated 28<sup>th</sup> January, 2014.
- Introduction of Bioethical aspects in various chapters of all subjects vide Resolution No. BM-26(xi)-15, dated 29<sup>th</sup> December, 2015.
- Modifications in PG Practical examinations of Biochemistry Subject vide Resolution No. BM-17(ii)-16, dated 22<sup>nd</sup> September, 2016.
- Modifications in contents & titles of Theory Papers of Biochemistry PG programme vide Resolution No. BM-17(iii)-16, dated 22<sup>nd</sup> September, 2016.
- Interdisciplinary subjects of M.B.B.S, M.D./M.S. and Super-specialty (D.M./M.Ch.) Programs under the Faculty of Medicine vide Resolution No. BM-10(viii) dated 12<sup>th</sup> April, 2019.
- University Practical Examination Pattern as per Competency Based Medical Education (CBME) curriculum of MCI vide Resolution No. BM-27(i)-19, dated 30<sup>th</sup> July, 2019.
- Graduate Attributes, Programme Outcomes (POs), Course Outcomes (Cos) outcome analysis of POs and COs and mapping with objectives for all courses of UG and PG Programmes of Pre-Clinical and Medicine Subjects under the Faculty of Medicine vide Resolution No. BM-27(x)-19 dated 30<sup>th</sup> July, 2019.
- Interdisciplinary subjects of M.B.B.S, M.D./M.S. and Super-specialty (D.M./M.Ch.) Programs under the Faculty of Medicine vide Resolution No. BM-27(xi) dated 30<sup>th</sup> July, 2019.

The Syllabus for Post Graduate (Pre-Clinical Subjects) – 2014-15 Revised upto July 2019 will be useful to all the concerned. This will come into force with immediate effect.



  
(Dr. A. N. Suryakar)  
Registrar

**Copy to:**

1. PS to Chancellor for kind information of Hon'ble Chancellor, Dr. D. Y. Patil Vidyapeeth, Pune.
2. PS to Vice Chancellor for kind information of Hon'ble Vice Chancellor, Dr. D. Y. Patil Vidyapeeth, Pune.
3. The Dean, Dr. D. Y. Patil Medical College Hospital & Research Centre, Pimpri, Pune
4. The Controller of Examinations, Dr. D. Y. Patil Vidyapeeth, Pune.
5. Director (IQAC), Dr. D. Y. Patil Vidyapeeth, Pune.
6. Web Master for uploading on Website.

**MAPPING OF PROGRAMME OUTCOMES [POs] AND COURSE  
OUTCOMES [COs] OF PG PROGRAMMES**

<b>No.</b>	<b>By the end of the programme, the Postgraduate will have /be:</b>
PO 1	Knowledge and Skills
PO 2	Planning and problem solving abilities
PO 3	Communication
PO 4	Research Aptitude
PO 5	Professionalism and Ethics
PO 6	Leadership
PO 7	Societal Responsibilities
PO 8	Environment and Sustainability
PO 9	Lifelong Learner

## ANATOMY

Course Code	Course Title
PC01	MD Anatomy

### PROGRAMME OUTCOMES

CO No.	At the end of the course, the learner should be able to :	Mapped Programme Outcomes
PC01.1	Acquire the competencies in gross anatomy Neuro anatomy, Histology , genetics, radiological anatomy, applied anatomy and embryology	PO 01, PO 02, PO3, PO 05
PC01.2	Acquire mastery in skills of dissection, embalming, tissue preparation, and museum preparation	PO 01, PO 02, PO 03, PO 04, PO 05, PO 06 and PO 09
PC01.3	Acquire skills in teaching undergraduate students	PO 01, PO 02, PO 03, PO 04, PO 05, PO 06 , PO 07 and PO 9
PC01.4	Acquire skills in basic aspects of biostatistics and research methodology , develop ability to plan the protocol of thesis , carryout review of literature resarch ,execution of research and preparation of report	PO 1, PO 02, PO 03, PO 04, PO 05, PO 06, PO 07, PO 08, PO 09
PC01.5	Shall be able to use computer applications, online literature search , retrieving and compiling relevant database from scientific repositories (Pub med, Cochrane , Med line etc)	PO 1, PO 02, PO 03, PO 04, PO 05, PO 06, and PO 09
PC01.6	Acquire the skills of prepare and poster presentations, writing research papers and thesis	PO 1, PO 02, PO 03, PO 04, PO 05, PO 06, and PO0 9

<b>CO No.</b>	<b>At the end of the course, the learner should be able to :</b>	<b>Mapped Programme Outcomes</b>
PC01.7	Develop honest work ethics, empathetic behaviour with students and colleagues . Acquire capacity of not letting his/ her personal beliefs prejudices and limitations to come in the way of his duty. Acquire attitude and communication skills to interact with colleagues , teachers and students	PO 1, PO 02, PO 03, PO 4, PO 05, PO 06, PO 07, PO 09
PC01.8	Practice different methods of teaching - learning Making presentations of subject topics and research outputs	PO 01, PO 02, PO 03, PO 04, PO 05, PO 06, and PO 09
PC01.9	Develop problem solving approach and demonstrate the ability to identify applied implications of knowledge of anatomy in relevant clinical problem using literature and electronic media	PO 1, PO 03 PO0,4, PO 05, PO 06, PO 09
PC01.10	Demonstrate the ability to correlate the clinical conditions to the anatomical and embryological or hereditary factors	PO1, PO 03, PO 04 PO 05, PO 06 and PO0 9
PC01.11	Demonstrate the ability to evaluate scientific/clinical information and critically analyze conflicting data and hypothesis	PO1, PO 03, PO 04, PO 05, PO 06, PO 0 9



# **ANATOMY**

## **ANATOMY**

### **1. GOALS**

- 1.1 The goals of post graduate medical education shall be to produce competent specialists and teachers.
- 1.2 The duration of the course shall be three calendar years. Starting from 1<sup>st</sup> July and 1<sup>st</sup> January.
- 1.3 The candidate registered for P.G. Course shall devote these three years, for Study the subject including its sub branches and shall work as full time Teacher/student and participate in the educational programme consisting of Various assignments (Including seminars, Workshops, Journal Club meetings, Conferences etc.) that may be held in the department or of the dept. outside.
- 1.4 The candidate will also participate in teaching of undergraduate students for I<sup>st</sup> M.B.B.S. course or other allied teaching of students. He/ She will actively Participate and actually do all the laboratory work in Histology laboratory and embryology branch. He will actually dissect the whole body and make demonstration specimens of the human body. He must be able to do the embalming and preservation work of these bodies. He will learn the Museum techniques of preparation of museum specimens and mounting of these specimens.

### **2. OBJECTIVES :**

#### **2.1 Knowledge -**

- 2.1.1: Teaching of the whole-body including Demonstration. Tutorials on various aspects. (Hard parts, Soft parts, Surface Anatomy, Radiology and embryology models.)
- 2.1.2: Dissection and demonstration of the regions of whole human body.
- 2.1.3: Histological Techniques of collection of tissues/organs, fixation, preparation of blocks, cutting and staining by H and E stain. Knowledge of special staining methods and use of different types of microscopes.
- 2.1.4: Preparation and mounting of Museum specimens.
- 2.1.5: Embalming and Preservation of bodies.

- 2.1.6: Participation in Seminars, Journal club meetings, group discussion and all other academic activities of the department.
- 2.1.7: Participation in the research work of the department.
- 2.1.8 : Medicolegal work of the department and anthropometry.
- 2.1.9: Candidate must keep up-to-date record of all the laboratory work and other works done. in the department. This record is to be countersigned by the post-graduate teacher every term.
- 2.1.10: Prepare the dissertation/ thesis on the given subject, following all the rules laid down by the University.

## **2.2 Skills**

Skills to be learnt in the post graduate course:

- 2.2.1: Teaching of undergraduates and preparation of Teaching materials.
- 2.2.2: Dissection and display of the details of regions of the human body.
- 2.2.3: All Histological techniques, Staining by H and E and knowledge of some special staining methods
- 2.2.4: Embalming and preservation of bodies
- 2.2.5: Museum techniques
- 2.2.6: Medicolegal work,
- 2.2.7: Basic skills and training in Research work.

## **3. INTEGRATION OF TEACHING**

Guest lectures by the departments of Surgery, Medicine, Ophthalmology, ENT, OBGY for surgical and applied Anatomy.



#### **4. TRAINING SCHEDULE**

- 4.1 Day to day teaching of undergraduates.
- 4.2 Dissection of the whole body
- 4.3 Histology Processing and preparation of slides.
- 4.4 Journal club – once in 15 days.
- 4.5 P.G. seminars – once in 15 days.
- 4.6 Microteaching – once a month.
- 4.7 Discussion on topic of dissertation - once a month.
- 4.8 *Rotation of students to (a) CT, MRI, Sonography – 15 days, (b) Surgery for Laproscopic Anatomy – 1 month during second year of Post Graduate course.*

#### **5. DETAILED SYLLABUS**

- 5.1 Gross and Regional Anatomy of the Human body including Historical aspects, in details. This includes Osteology, Myology, Systemic Anatomy, Neuroanatomy, applied and clinical anatomy etc.
- 5.2 General and Systemic Embryology of the human including the knowledge of comparative Embryology.
- 5.3 Basic principles of Genetics and related topics.
- 5.4 Histology - Details of General Histology, Special Histology of organs and structure. Staining Techniques and preparation of slides.
- 5.5 Clinical and Applied anatomy of whole human body.
- 5.6 Radiological Anatomy including knowledge and principles of all new imaging techniques in the normal body, CT scan, Sonography
- 5.7 Radiological Anatomy and surface marking of the whole human body, dead and living.
- 5.8 Recent Advances in the subject of anatomy, histology and Embryology.
- 5.9 Sectional anatomy
- 5.10 PBL

## 6. TITLE OF THEORY PAPAERS WITH CONTENTS

### **Theory paper with contents -**

There shall be four theory papers at MD. Anatomy Exams. Each paper will be of 100 marks. Papers I, II, III and IV will be of three hours duration each.

**Total marks for Theory - 400.**

6.1: Paper – I –

Human Anatomy Contents – Gross and Applied anatomy – 100 marks

6.2: Paper – II –

*Human Anatomy including Histology, Embryology, Genetics, History of Anatomy, Anthropometry, Medico legal examination of Bones* – 100 marks.

### **Contents –**

- |                                     |            |
|-------------------------------------|------------|
| ▪ Histology                         | – 30 marks |
| ▪ Embryology                        | – 30 marks |
| ▪ Genetics                          | – 30 marks |
| ▪ Anatomical techniques             | – 05 marks |
| ▪ History of Anatomy/ Anthropometry | – 05 marks |

### **Medico legal examination of Bones**

6.3: Paper III –

Neuroanatomy – 100 marks

### **Contents –**

- Central nervous system
- Peripheral system

Paper IV-

### **Contents –**

- *Applied Anatomy of Complete Gross Anatomy, Histology, Embryology and Genetics.*
- *Recent advances in Anatomy*

### **THEORY PAPER PATTERN :**

Paper I to Paper IV (Each Paper of 100 marks)

#### **Sec A :**

Q.1 LAQ – 25 marks

Q.2 LAQ – 25 marks

**Sec B :**

Q.3 Write in short 5 X 10 = 50 marks

*Paper IV section B Question 3-No.5 will be divided into 5(a) and 5(b):2 PBL Question of 5 marks each.*

**7. PRACTICAL / ORAL EXAMINATION:- TOTAL MARKS – 400**

- 7.1: Dissection and discussion - 100
- 7.2: Preparation of block; cutting, Mounting, Staining & Discussion -50
- 7.3: Discussion on Histology, Embryology and Genetics slides (10) - 50
- 7.4: Grand viva - on - Osteology, Specimens, Radiology including  
USG-150 and CT, MRI, Sonography, Living Surface Anatomy,  
Embryology  
Models and subject of thesis.
- 7.5: Micro Teaching – Presentation on a given topic - 30
- 7.6: Medico – legal discussion - 20

**8. DISSERTATION****AIMS and OBJECTIVES –**

- 8.1** The thesis/dissertation is compulsory for candidates registered for M.D./MSc. (Med) / Ph.D. (Med) and should embody candidates own work under a supervisor qualified for the purposes and recognized as a Post-graduate teacher by the University.
- 8.2** The subject of thesis should as far as possible reflect the research priorities of the Post-Graduate department where the work is being done.

**8.3 General Guidelines –**

- 8.3.1 The subject of thesis along with a synopsis (about 200 words) countersigned by the Post-graduate teacher, Head of the Post-graduate department and the Head of the Institution should be submitted to the University within 4 months of registration as Post-Graduate students. A penalty of Rs.50/- will be levied after the due date.
- 8.3.2 The subject and plan of work of the thesis should not be same as that of a thesis which has been accepted by the University in the past three years.

- 8.3.3 If work required for the thesis entails collaboration with other departments or specialties, the collaborative portion of work will be supervised by a Co-guide designated by the Head of the institution. A co-guide should normally be a Post-Graduate teacher in his own speciality, however, workers who have specialized in a particular field may be designated as Co-guides by the Head of institution. In cases where there is a guide and a co-guide for a thesis, the certificate required for submission of the thesis should be signed both by the guide and the co-guide.
- 8.3.4 The department should provide all facilities to the candidate and the candidate should not be asked to spend money on chemicals, instruments etc. The Dean / commandant / Principal of the college while submitting the topic of thesis to the University for approval should make sure that the Institution provides all facilities for the research work.
- The candidate should submit to the University six monthly progress report of thesis and his other Post-graduate work through his Post-Graduate teacher, head of the Post-Graduate department and the Head of Institution.
- 8.3.5 If the progress of candidate's work including thesis work is not satisfactory, the University on recommendation of Head of the department, head of the Institution and the dean of faculty of Medicine may not grant that particular term and the period of training will be extended by the number of terms not granted.
- 8.3.6 If there is a minor change in the topic of dissertation the same be allowed at any time. However, if there is a major change the student may be allowed to change without keeping additional terms between the date of application and date of examination.

## 8.4 Evaluation

### 8.4.1 Thesis / Dissertation (For M. D. / M. S.)

- (a) Should be submitted to the University 6 months before the date of written oral clinical, practical examination. Approval of thesis is a precondition for permission to appear in the rest of examination.
- (b) The thesis will be examined for acceptance by two examiners one internal and one external. Each will sign marks out of 100. The marks will be sent by the examiners directly to the University. To qualify for appearing in the theory, clinical and practical parts of the exam. candidate must receive a minimum of 50 marks out of 100 from each examiner. Thesis marks, however, will not be taken into consideration in the final mark sheet.
- (c) In the thesis the candidate will not disclose his identity of the guide or institution in any way.
- (d) The candidate should submit a separate certificate from the guide about the completion of thesis work.
- (e) If a student has submitted his examination form and his thesis previously, he will be permitted to take the examination within a period of 4 years any time in future provided the thesis has been accepted. The terms satisfactorily kept by him are valid in future, only for a period of 4 years subsequent to submission of his thesis after which he will have to undergo post Graduate training again for 4 terms to be eligible for appearing for the theory clinical and practical examination.

### 8.4.2 Thesis for M.Sc. (Medical) and Ph.D. (Medical)) : Rules of Pune University regarding thesis for M.Sc. and Ph. D. as in other faculties will be applicable.

## **9. METHODS OF EVALUATION OF STUDENTS**

**9.1** Evaluation of students for PG Degree MD Anatomy For postgraduate degree in Anatomy the overall evaluation of the students will consist of preliminary examination and the university examination at the end of the course.

9.1.1 Preliminary Examination -  
shall be held at the end of 33 months and shall have the evaluation pattern for theory as well as practical same as University examination.

9.1.2 University Examination Pattern -  
a) Four theory papers of 400 marks