

**THE TAMIL NADU Dr.M.G.R.MEDICAL UNIVERSITY, CHENNAI.**  
**MD ANATOMY**  
**PG NON CLINICAL EXAMINATION PATTERN**

**PRACTICALS I**

01. GROSS ANATOMY - Dissection 75 Marks

**PRACTICALS II HISTOLOGY**

(Section cutting;  
 Embedding and staining;  
 Histology slides draw and discuss) 75 Marks

**PRACTICALS III**

50 Marks

(Includes OPSE for 20 marks  
 Embryology and Neuro Anatomy)

**VIVA**

Pedagogy 40 Marks  
 Viva 60 Marks

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100 Marks  
 (Min 50% pass)

**DISSERTATION:**

Discussion 50 Marks  
 Evaluation by outside examiners  
 2 x 25 marks = 50 Marks

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100 Marks  
 Min 50%)

**Grand total = 400 Marks / 200 Marks**  
**Minimum Pass 50%**

	Maximum Marks	Passing Minimum
PRACTICALS	200	100
VIVA	100	50
Dissertation	100	50

**THE TAMIL NADU Dr. M.G.R MEDICAL UNIVERSITY, CHENNAI**  
**P.G NON-CLINICAL EXAMINATION PATTERN**  
**PHYSIOLOGY**

**Practicals - 2 days**

I Long exercise	- Animal Lab –	80 marks
II Short exercise 1	- Human Lab –	70 marks
III Short exercise 2	- Hematology Lab –	30 marks
IV OSPE	-	20 Marks
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	Total	200 Marks

**I Animal Lab**

- Whole animal Mammaliah experiments /  
or Charts (ECG, BP, Response recording) - 40 marks
- Isolated organ - 40 marks
- 1. Isolated whole heart – rat or rabbit
- 2. Smooth muscle - rat
- 3. Skeletal Muscle

**II Human Lab**

- Clinical examination of systems - 20 marks
- Human experiments (eg. Recording &  
reporting of ECG, EEG, NCU, Evoked  
potentials, Spirometry) - 30 marks
- Problem Solving exercises - 20 marks
- Eg. Case discussion, Interpretation of  
lab values like ABG, electrolytes etc

**III Hematology lab**

- 30 marks

**IV OSPE**

5 Stations X 4 Marks = 20 marks

One skilled station –Preparation of Solutions

Four response stations –Statistics (compulsory)

Others can be: Instruments, histology etc

**Total marks – 200**

**Passing Minimum –100 marks**

**VIVA**

- 1. Viva - 60 marks
- 2. Pedagogy - 40 marks

Pedagogy should be with chalk and board only

Total - 100 marks

passing Minimum –50 Marks

**Dissertation:**

Discussion on dissertation - 50 marks

Dissertation evaluation by

2 external examiners (2 x 25 marks each) 50 Marks

– 100 marks.

	Maximum Marks	Passing Minimum
PRACTICALS	200	100
VIVA	100	50
Dissertation	100	50

**THE TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY**  
**PG NON CLINICAL EXAMINATION – PRACTICAL PATTERN**  
**MD:- PATHOLOGY**

**DAY 1:-**

<b><u>FORENOON SESSION:-</u></b>	<b><u>TIME ALLOTTED</u></b>	<b><u>MARKS</u></b>
1.HAEMATOLOGY CASE/ CLINICAL PATHOLOGY/ BLOOD BANKING	2 HOURS	25 Marks
2.GROSSING/AUTOPSY/ GROSS SPECIMENS FOR DIAGNOSIS AND DISCUSSION	1 1/2 HOURS	25 Marks (5+10+10)

**AFTERNOON SESSION:-**

HAEMATOLOGY AND CYTOLOGY SLIDES & DISCUSSION	2 HOURS (10 SLIDES X 5 MARKS EACH)	50 Marks 100 Marks
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**DAY 2:-**

**FORENOON SESSION:-**

1.HISTOPATHOLOGY SLIDES AND DISCUSSION	2 ½ HOURS (16 SLIDES X 5 MARKS EACH)	80 Marks
2. OSPE		20 Marks

**TOTAL – 200 marks**

**Min. pass (50%)**

**DAY 2:-**

**AFTERNOON:**

PAEDOGOGY	-	<b><u>2 HOURS</u></b> 40 marks
Log Book		No Mark allocated. But needs evaluation.
VIVA	-	60 marks

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TOTAL                      100 MARKS

MINIMUM PASS – 50 marks (50%)

Aggregate (Practical + VIVA) – 300 marks (200 + 100)

MINIMUM PASS 50% - 150 marks

**DISSERTATION:**

Discussion 50 Marks

Evaluators 2 x 25 = 50 Marks

Total – 100 marks (minimum pass 50 marks)

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**GRAND TOTAL – 400 MARKS / 200 MARKS . MINIMUM PASS 50%**

**THE TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY**  
**PG NON-CLINICAL EXAMINATION PATTERN**  
**SCHEME OF EXAMINATION**  
**MD:MICROBIOLOGY -**

		Marks
<b>I</b>	<b>Long Exercise 1 No.</b>	
	Mixed Culture (Clinical Microbiology)	80 Marks
	<b>Short Exercise</b>	
	Pure Culture	40 Marks
	Histopathology Slides	20 Marks
	Sero-Immunology (Agglutination/precipitation/ELISA)	15 Marks
	Parasitology (Stool for ova, cyst)	10 Marks
	Mycology	10 Marks
		----- 175 Marks
	OSPE	
	(OPSE – 20 marks 4 stations x 5 marks remaining 5 marks will be added to mycology)	25 Marks
		-----
		200 Marks (Min.50%)
	<b>TOTAL</b>	<b>200 Marks</b>
	<b>Minimum for Pass</b>	<b>100 Marks (50%)</b>
<b>II</b>	<b>VIVA</b>	
	Viva	60 marks
	Pedagogy	40 marks
		-----
	Total	100 Marks
	Minimum for Pass 50%	50 Marks
<b>III</b>	<b>DISSERTATION</b>	
	Evaluation by outside examiners	50 Marks
	DISCUSSION	50 Marks
		-----
		100 Marks
	Minimum for Pass 50%	50 Marks
<b>Grand total</b>	<b>=</b>	<b>400 Marks / 200 Marks</b> <b>Minimum Pass 50%)</b>

Daywise distribution of Exercises

Day1	Day2	Day3
Clinical Microbiology (mixed culture)	Clinical Microbiology (Contd.)	Clinical Microbiology (Final Report)
Pure Culture	Pure Culture	-----
Mycology	Parasitology	Pedagogy
Sero Immunology	Histopathology slides	Viva
	OSPE	Discussion on dissertation

**THE TAMIL NADU Dr.M.G.R MEDICAL UNIVERSITY**  
**PG NON CLINICAL EXAMINATION PATTERN**  
**M.D.BIOCHEMISTRY PRACTICALS**

**Part I**

1. Thin layer / Paper Chromotography -30 marks
  - a. Aimed at identifying the unknown carbohydrate or amino acid
2. Serum Protein Electrophoresis -30 marks
3. OSPE -20 marks

Four stations of 5 marks each (4x5)

- Two performance stations(2X5)
- Two response stations(2x5)

**Part II**

1. Clinical cases –Charts discussion - 20 marks
  - a. Four charts of 5 marks each
  - b. Related to clinical biochemistry
- 2 Long case presentation and discussion - 40 marks
3. Estimation of any two analytes related to the case Discussed  
(1 Kinetic and 1 endpoint assay) 2x20=40 - 40 marks
4. Validation of reagent kits - 20 marks

Complete evaluation of reagent kits is not expected at the time of examination. Relevant areas may be examined.

Total Marks –200

Passing Minimum – 100



## VIVA

1. Viva -60 marks
2. Pedagogy - 40 marks

Total - 300 marks                      passing Minimum – 150 Marks

4. Discussion on dissertation - 50 marks

External evaluation            25x2    - 50 marks

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100 (minimum pass 50%)

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Grand Total = 400                      Minimum pass 200 (50%)

\* Viva – Viva includes Viva on recent advances, Pedagogy, Log book Discussion

\*\* Dissertation – Dissertation evaluation by 2 examiners each for 25 Marks – 50 marks

Discussion on Dissertation    - 50 marks

Total Marks    -100 marks

## MD BIOCHEMISTRY

### EXAMPLES OF OSPE STATIONS

Performance Stations:

1. Coagulation profile
  - a) Prothrombin time
  - b) Activated Partial thromboplastin time
2. Methylamine test for detecting fructose
3. Music acid test for detecting galactose
4. Schwartz Watson for differentiating urobilinogen from Orphobilinogen
5. Neumann's test for detecting Phosphorous in casein Response Stations.
  1. Identification of Hemoglobin variants
  2. Levey Jenning's chart showing warning or rejection rules
  3. Creatinine clearance calculation based on given values and normogram
  4. Double reciprocal plot to identify the type of enzyme
  5. Precision check of a given set of IQC results/patients samples using standard deviation and coefficient of variation.

**THE TAMILNADU Dr.M.G.R. MEDICAL UNIVERSITY**  
**PG EXAMINATION CLINICAL/NON-CLINICAL EXAMINATION PATTERN**  
**M.D. FORENSIC MEDICINE**  
**PRACTICAL SCHEME FOR 3 DAYS**

**DAY – 1**

<b><u>EXERCISE</u></b>	<b><u>TIME</u></b>	<b><u>MARKS</u></b>
1. Adult Autopsy	3 Hours	30
2. Foetal Autopsy	1½ Hours	20
3. Spotters (10 No.)	40 Min.	10
a) Pathology Specimen		
b) Forensic Specimen		
c) Clue Materials/ Artefacts/Photos		
d) Toxicology Specimen		
4. Clinical Forensic Medicine		
a) Drunkenness Case Examination	20 Min.	10
b) Injury Case Examination	20 Min.	10
c) Sexual Offences Case Examination (Accused & Victim)	30 Min.	10

**NOTE :**

[ Wherever possible subjects should be provided for examination ]

**DAY – 1**                      **TOTAL**                      **6 Hrs. & 20 Min.**                      **90 Marks**

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**PG EXAMINATION CLINICAL/NON-CLINICAL EXAMINATION PATTERN**  
**M.D. FORENSIC MEDICINE**  
**PRACTICAL SCHEME FOR 3 DAYS**

**DAY – 2**

<b><u>EXERCISE</u></b>	<b><u>TIME</u></b>	<b><u>MARKS</u></b>
1. Forensic Anthropology and Odontology		
a) Age estimation by using Dental and Physical examination	30 Min.	10 Marks
b) Cluster of bones examination	30 Min.	10 Marks
c) Cluster of X rays examination	30 Min.	10 Marks
 <b><u>NOTE :</u></b> [ For 1 a) Wherever possible subjects should be provided for examination ]		
2. Expert opinion on the documents of a Medico legal case	30 Min.	10 Marks
3. Interpretation of Photographs/ Videographs/Weapons in a Medico legal case	30 Min.	10 Marks
4. Microscopic examination of tissues [5 Slides] 5 x 2	40 Min.	10 Marks
5. Mock Court	60 Min.	10 Marks
6. Preparation of Postmortem Certificate from the autopsy done on Day - 1	30 Min.	10 Marks
7. Psychiatric case interpretation	30 Min.	10 Marks

**DAY – 2**

**TOTAL**

**5 Hrs. & 10 Min.**

**90 Marks**

M.D. FORENSIC MEDICINE

**Day 3**

Exercise	Time	Marks
1. OSPE		
4 Stations 5 Marks each	60 Minutes	20
	<b>Total</b>	<b>200 Marks</b>
	<b>Min. Marks</b>	<b>100 (50%)</b>
VIVA		
1. Pedagogy	30 Min	40 Marks
2. VIVA	60 Min.	60 Marks
3. Log book	30 Min.	00 Marks
		---- 100 Marks
5. Discussion on Dissertation	60 Min.	50 Marks
Evaluation	2 x 25 Marks	50 Marks
		-----100 marks
<b><u>Grand total = 300 + 100 = 400 Marks / 200 Marks</u></b>		
<b><u>Minimum Pass 50%)</u></b>		

**THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY**

**PG EXAMINATION PATTERN – M.D. COMMUNITY MEDICINE**

**SCHEME OF EXAMINATION**

**THEORY :** PART I 1 PAPER  
PART II 3 PAPERS  
100 Marks for each paper  
Minimum Pass Marks – 50 in each

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**CLINICALS**

Clinico Social Examination :  
Family Study : 80 Marks

Public Health Skills :  
Computer Data  
Analysis Skills : 25 Marks

Management Skills  
(as Case Study) : 25 Marks

Epidemiology Bio Statistics Exercise 50 Marks

OSCE (Public Health Chemistry)  
PH Micro Medical Entamology RCH skills 20 Marks (4 x 5)

-----  
Total 200 Marks  
Minimum Pass 100 Marks

**VIVA**

Viva 60 Marks (15 x 4)  
Log Book 40 Marks (10 x 4)

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Total 100 Marks  
Minimum Pass 50 Marks

**Aggregate (Clinical + Viva) - 300 Marks (200 + 100)**  
**Minimum Pass (50%) - 150 Marks**

**DISSERTATION:**

Evaluation I ) 50 Marks  
Evaluation II ) (25 Marks for each evaluator)

Discussion 50 Marks (10 x 5)

**Total 100 Marks (Minimum Pass 50 Marks)**

**Grand total = 400 Marks / 200 Marks**  
**Minimum Pass 50%**

**SCHEDULE OF EXAMINATION**

	<b>Forenoon</b>	<b>Afternoon</b>
Day 1	Epidemiology/ Exercises Family Study	OSCE Computer Skill Managerial Skill
Day 2	Paedagogy Log book evaluation Dissertation discussion	Viva

**THE TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY**

PG EXAMINATION PATTERN – M.D. PHARMACOLOGY

**SCHEME OF EXAMINATION**

**THEORY 4 PAPERS – 100 MARKS FOR EACH PAPER**

**MINIMUM PASS MARKS – 50 IN EACH**

**PRACTICALS :**

**DAY 1 :**

Clinical Pharmacology

case discussion - 100 Marks (2 x 50)

Toxicology - 30 Marks

Protocol writing - 25 Marks

Journal Criticism - 25 Marks

OSPE

(4 Stations x 5 Marks) - 20 Marks

Total - 200 Marks

**DAY 2 :**

Pedagogy - 40 Marks

Viva - 60 Marks

Total - 100 Marks

**Aggregate - 300 Marks (200 + 100)**

**Minimum Pass (50%) - 150 Marks**

**DISSERTATION:**

Evaluation I ) 2 externals

Evaluation II ) (25 Marks for each evaluator)

Discussion 50 Marks

Total 100 Marks

**Grand total = 400 Marks / 200 Marks**

**Minimum Pass 50%**

## **MD PHARMACOLOGY**

### **Objective Structured Practical Examination**

#### **OSPE**

- ✓ Interpretation of Clinical Pharmacology Charts.
- ✓ Interpretation of Pharmacokinetic Charts.
- ✓ Interpretation of Pharmacodynamic Charts.
- ✓ Prescription Audit.
- ✓ Casuality Analysis.
- ✓ Calculation of Bioavailability, TDM, SSC.
- ✓ Ethics – Exercises based on ethical decision making.
- ✓ Exercises based on Evidence Based Medicine (Meta Analysis).
- ✓ Dosage calculation in paediatrics and geriatrics.
- ✓ Dosage calculation in compromised renal and liver function.



**CHANGES IN PRACTICAL SCHEME  
PLACED/APPROVED IN THE 46TH STANDING ACADEMIC BAORD**

**MD PAEDIATRICS**

**SCHEME OF EXAMINATION**

**THEORY :** PART I 1 PAPER  
PART II 3 PAPERS  
100 Marks for each paper  
Minimum Pass Marks – 50 in each

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**CLINICALS** **- 200 Marks**

			<b>Time</b>		
<b>Long Case</b>	-	<b>1</b>	<b>80 Marks</b>		<b>(45 Min.)</b>
<b>Short Cases-</b>		<b>2</b>	<b>35 Marks each</b>		<b>(15 mts. each)</b>
Ward Rounds		3 x 10 Marks	30 Marks	)	<b>(20 Mts.)</b>
OSCE (drugs,lab data,emergency imci)		4 x 5 Marks	20 Marks	)	
Total			----- 200 Marks		

**Minimum Pass 100 Marks (50%)**

**VIVA**

Viva 4 x 20 Mark 80 Marks To include

- a)nutrition
- b) imaging
- c)counselling
- d)Procedure
- e) Instruments
- f) Recent advances
- g) adolescence

Log Book 20 Marks

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Total 100 Marks

**Minimum Pass 50 Marks**

Aggregate (Clinical + Viva)	-	300 Marks (200 + 100)
Minimum Pass	-	<b>150 Marks</b>

**DISSERTATION:**

Evaluation by the the TN Dr.MGR. Uty.	50 marks
Discussion during Viva	50 Marks
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Total	100 Marks Minimum Pass 50 Marks

**Grand total      400 Marks / 200 Marks Minimum Pass**  
**Minimum Pass 50%**

sd/-  
**(Dr. M.Kannaki)**  
**(Dr.Chitra Ayyappan)**

## **ORTHOPAEDICS**

### **BOARD OF STUDIES FOR PG COURSES**

SUGGESTIONS: For Change

- 1) To increase II B) viva marks to 80 Marks  
(from the previous 60 Marks)
- To increase the Log Book marks to 20 marks (instead of the previous 40 Marks)

The total marks of 100 remain unchanged.

- 3) MS Uniformly, the same pattern to be followed for both the Diploma and the Orthopaedics, except that Diploma candidates will not have dissertation.

sd/-  
(Dr. N. Nazeer Ahmed)  
Prof. Of Ortho  
KMC, Chennai.

### **MD COMMUNITY MEDICINE**

CLINICAL	- NIL	Changes
VIVA	VIVA – 80 Marks Log Book 20 Marks	
Dissertation	Nil	Changes

sd/-  
(Dr.P. Seenivasan)  
Prof. Of Comm.Med.  
SMC, Chennai.

**Board of Studies – PG CLINICAL  
MD (O & G)**

Clinicals		Marks
Long Case	Obs. - 1	50 marks
	Gynae 1	50 marks
Short Case	Obs. - 1	25 marks
	Gynae 1	25 marks
		-----
		150 Marks
Ward Rounds		
	3 cases x 10 (AN,Gyn.FW)	30 Marks
OSCE	4 X 5	20 Marks
		-----
		200 Marks
Viva-Voce		80 Marks
	Obstetrics - 40 marks	
	Gynaecology 40 Marks	
(Specimen, Instruments, FW,Imaging, Drugs,Dummy Pelvis, Partogram, Endoscopy)		
Log Book		20 Marks
Dissertation		100 Marks
Discussion during viva		50 Marks
Evaluation by University sending to 2 examiners within the State		50 Marks

**sd/-  
(Dr. P. Meenalochani)  
IOG, Chennai.**

## MD GENERAL MEDICINE

### CLINICAL EXAM:

⇒ Long Case	80 Marks	No change
⇒ Short Cases 3 x20	60 Marks	No change
⇒ Ward Rounds		
each case 10 Marks		)
		)
4 cases x	40 marks	)
4 x 10 one case		) Suggested
per examiner		) changes
⇒ OSCE (each station 5 marks)		)
		)
4 stations 5 x	20 marks	)
	-----	
	200 Marks	

No change suggested in

Viva - 80 Marks each examiner 20 marks  
Log Book 20 Marks  
Dissertation  
Discussion.

Sd/-  
(Dr.R. Sabarathinavel)  
Dr.C. Rajendran)

## MD Geriatric Medicine

CLINICALS	No.of Cases	Marks
a) Long Case	1 Case	80 Marks
b) Short Cases	2 Cases	70 marks (35x2)
1. Ward Round	Three cases	30 marks (10x3)
d) OSCE	Four Stations	20 marks (5 x 4)
		-----
		200 marks
		=====

VIVA		Marks
	Viva	80 marks
	Log Book	20 marks
		-----
		100 marks

## DISSERTATION

Discussions	-	50 Marks
Evaluation by University with External	-	50 marks
	-----	100 Marks

**Total 400 Marks**

**Min. Pass 200/400 = 50%**

## **MD COURSE IN BIOCHEMISTRY**

Training in the MD course in biochemistry aims to cover the following areas:

1. Acquisition of adequate knowledge and skills in Biochemistry
2. Teaching and evaluation of undergraduate students in medicine, nursing and allied health sciences.
3. Managing a diagnostic laboratory and providing diagnostic support to clinicians.
4. Clinical experience in selected relevant specialties to provide an effective link between clinicians and the diagnostic lab.
5. Research skills.

### **CORE COMPETENCIES EXPECTED TO BE ACQUIRED IN EACH OF THE ABOVE AREAS AT THE END OF THE COURSE:**

#### **I. Acquisition of adequate knowledge and skills in Biochemistry**

Broad learning areas would comprise the following:

1. General biochemistry
2. Clinical biochemistry
3. Molecular biology
4. Immunology
5. Biochemical and molecular techniques
6. Recent advances in biochemistry and biotechnology
7. Basic biomedical statistics

Suggested areas in which it would be desirable to acquire practical skills:

1. Paper and thin layer chromatography
2. Estimation of clinically relevant analyses
3. Urine analysis
4. Protein electrophoresis
5. Enzyme kinetics and use of inhibitors
6. DNA and RNA isolation\*
7. Polymerase chain reaction\*
8. Restriction fragment length polymorphisms\*
9. Nucleic acid electrophoresis\*
10. SDS-PAGE and western blotting\*
11. ELISA\*
12. Sub-cellular fractionation\*
13. Basics in handling of laboratory animals\*
14. Demonstrations:HPLC, immunohistochemistry, immunofluorescence, mass spectrometry\*

\*The items with asterisks are only suggestions and have been included as desirable skills to have in view of the advances in the subject. Each of the departments involved in training may decide which of these are feasible in their setting. If they do not have the facilities for these in their department, they may consider sending candidates for short periods of training to other departments in their institution or in other institutions that may have the required facilities, where trainees can watch demonstrations of the techniques being carried out, even if they are not able to get hands-on experience.



## **II. Managing a diagnostic laboratory and providing diagnostic support to clinicians**

At the end of the course, MD trainees should be

1. conversant with the working of automated analyzers
2. able to look after basic maintenance of and first line trouble-shooting for automated analyzers
3. able to validate and report laboratory results
4. able to detect and deal with errors in laboratory results
5. able to institute quality control and delta checks on results obtained from automated analyzers
6. able to evaluate different methods of estimations of biochemical analytes
7. able to evaluate commercial kits for estimations of biochemical analytes
8. able to manage a diagnostic biochemistry laboratory
9. able to carry out audits in the laboratory, prepare SOP for the laboratory and implement processes and systems for accreditation of the laboratory
10. implement safe practices in the laboratory

Optional diagnostic laboratory postings

- i. Hematology and blood bank
- ii. Cytogenetics(karyotyping)
- iii. Microbiology/virology(ELISA and molecular diagnostics)
- iv. Pathology (immunocytochemistry and FISH)

## **IV. Clinical experience in selected relevant specialties to provide an effective link between clinicians and the diagnostic lab**

Clinical postings of 3 months duration in total in general medicine and other relevant medical specialties (suggestions for these include endocrinology, gastroenterology, nephrology, intensive care units and pediatrics)

## V. Research skills

At the end of the course, MD trainees should be able to

1. read, understand and make presentations of the contents of a research publication
2. critically appraise a research publication
3. write a research proposal to carry out a study for purpose of a dissertation/thesis
4. write up the results of the study done
5. publish a part or whole of the thesis/dissertation as a research paper of conference proceedings

To accomplish the above objectives, it is desirable that trainees attend the following during the course:

1. basic courses in research methodology and ethics
2. basic courses in biostatistics
3. at least one conference/symposium/training workshop during the course

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Dr. Kanagasabai, Chairman	Sd/-
Dr.Sudha Seshayyan, Member	Sd/-
Dr.Padma, M.D. Member	Sd/-
Dr. Molly Jacob, Member	Sd/-
Dr.Selvi, Member	Sd/-