



BLDE

(DEEMED TO BE UNIVERSITY)

Competency Based Medical Education
(CBME)

PG CURRICULUM
2019-20
MD Microbiology

Published by

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Declared as Deemed to be University u/s 3 of UGC Act, 1956

The Constituent College

SHRI B. M. PATIL MEDICAL COLLEGE, HOSPITAL & RESEARCH CENTRE, VIJAYAPURA

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BLDE(DU)/REG/PG-Curr/2019-20/268

May 06, 2019

NOTIFICATION

Sub: **Competency Based Medical Education (CBME) based Revision of Post Graduate Curriculum**

- Ref: 1. Medical Council of India Regulation on Graduate Medical Education, 1997 and subsequent amendments of the same from time to time.
2. Minutes of the 28th meeting Academic Council of the University held on April 26, 2019.
3. Minutes of the 47th meeting Board of Management held on May 04, 2019.

The Board of Management of the University is pleased to **approve the CBME based Revised Curriculum for Post Graduate Degree Course at in its 47th meeting held on May 04, 2019.**

The Revised Curriculum shall be effective, from the Academic Session 2020-21 onwards, for Post Graduate Degree Course in the Constituent College of the University viz. Shri B. M. Patil Medical College, Hospital and Research Centre, Vijayapura.

REGISTRAR
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BLDE (Deemed to be University)
Vijayapura-586103, Karnataka.

To,

The Dean, Faculty of Medicine and Principal
Shri B. M. Patil Medical College,
Hospital and Research Centre,
Vijayapura

Copy to:

- The Secretary, UGC, New Delhi
- The Secretary, MCI
- The Controller of Examinations
- The Vice Principal
- The Vice Principal (Academics)
- The Prof. & HODs Pre, Para and Clinical Departments
- The Co-ordinator, IQAC
- PS to the Hon'ble Chancellor
- PS to the Hon'ble Vice-Chancellor

Smt. Bangaramma Sajjan Campus, B. M. Patil Road (Sholapur Road), Vijayapura - 586103, Karnataka, India.

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Our Vision

“To be a Leader and be recognized as an Institution striving for maintenance and enhancement of Quality Medical Education and Healthcare”

Our Mission

- To be committed to promote sustainable development of higher education including Health science education, consistent with the statutory and regulatory requirements.
- Reflect the needs of changing technology and make use of the academic autonomy to identify the academic programs that are dynamic.
- Adopt global concepts in education in the healthcare sector.

Section - I

**Goals and General Objectives of Postgraduate
Medical Education Program**

Goal

The goal of postgraduate medical education shall be to produce a competent specialist and / or a medical teacher as stated in the Post Graduate Medical Education Regulations 2000 and its amendments thereof [May2018]

- (i) Who shall recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy.
- (ii) Who shall have mastered most of the competencies, pertaining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.
- (iii) Who shall be aware of the contemporary advances and developments in the discipline concerned.
- (iv) Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology, and
- (v) Who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

General Objectives

At the end of the postgraduate training in the discipline concerned the student shall be able to:

- (i) Recognize the importance of the concerned specialty in the context of the health need of the community and the national priorities in the health sector.
- (ii) Practice the specialty concerned ethically and in step with the principles of primary health care.
- (iii) Demonstrate sufficient understanding of the basic sciences relevant to the concerned specialty.
- (iv) Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/strategies.
- (v) Diagnose and manage majority of the conditions in the specialty concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.
- (vi) Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability related to the specialty.
- (vii) Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation.
- (viii) Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.

- (ix) Play the assigned role in the implementation of national health programs, effectively and responsibly.
- (x) Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.
- (xi) Develop skills as a self-directed learner; recognize continuing educational needs, select and use appropriate learning resources.
- (xii) Demonstrate competence in basic concept of research methodology and epidemiology, and be able to critically analyse relevant published research literature.
- (xiii) Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
- (xiv) Function as an effective leader of a team engaged in health care, research or training.

Statement of the Competencies

Keeping in view the general objectives of postgraduate training, each discipline shall aim at development of specific competencies, which shall be defined and spelt out in clear terms. Each department shall produce a statement and bring it to the notice of the trainees in the beginning of the program so that he or she can direct the efforts towards the attainment of these competencies.

Components of the PG Curriculum

The major components of the PG curriculum shall be:

- Theoretical knowledge
- Practical/clinical Skills
- Training in writing thesis/research articles
- Attitudes, including communication.
- Training in research methodology, medical ethics & medicolegal aspects
- Teaching skills to the undergraduates, juniors and support teams

Source: Medical Council of India, Regulations on Postgraduate Medical Education, 2000. [amended upto May 2018]

Eligibility for Admission:

1. Post graduate degree course:

The candidate seeking admission should have passed MBBS from a college recognized by Medical Council of India.

As per requisites of statutory bodies & as laid out in Post graduate regulations of MCI & its amendments thereof, the minimum percentage of marks obtained in the entrance test

conducted by competent authority shall be as per MCI regulations & its amendments as applicable time to time.

Eligibility for Foreign / PIO / NRI students will be based on qualifying examination marks and MCI amendments as applicable at the time of selection and admission process.

Candidates seeking admission to superspeciality [M.Ch]

The candidate seeking admission to superspeciality course should have passed MS/MD in concerned subjects (As per MCI regulations & its amendments thereof) or passed DNB in concerned broad specialities & should fulfill requirements of MCI regulations.

2. As per requisites of statutory bodies & as laid out in Post graduate regulations of MCI & its amendments thereof, the minimum percentage of marks obtained in the entrance test conducted by competent authority shall be as per MCI regulations & its amendments as applicable time to time.

Eligibility for Foreign / PIO / NRI students will be based on qualifying examination marks and MCI amendments as applicable at the time of selection and admission process.

The MCI norms to qualify for Admissions

Candidates seeking admission to these Post Graduate Degree courses should have passed M.B.B.S. recognized by Medical Council of India or equivalent qualification and should have obtained permanent Registration from the Medical Council of India or any of the State/ Medical council or candidate should register the same within one month from the date of admission, failing which the admission of the candidate shall be cancelled. Provided that in the case of a foreign national, the MCI may on the payment of prescribed fee for the registration, grant temporary registration for the duration of post graduate training restricted to the medical college/ institute to which the applicant is admitted for the time being exclusively for post graduate studies; provided further, that temporary registration to such foreign national shall be subjected to the condition that such person is duly registered with appropriate registering authority in his /her country wherefrom he has obtained his basic medical qualification ,and is duly recognized by the corresponding Medical Council or concerned authority.

If the candidate fails to fulfill the relevant eligibility requirements as mentioned above he/she will not be considered eligible for admission for Medical Postgraduate Degree Courses even if he/she is placed in the merit list of statutory authority and BLDE (Deemed to be University).

Obtaining Eligibility Certificate by the University before making Admission

Candidate shall not be admitted for any postgraduate degree course unless he/she has obtained and produced the eligibility certificate used by the University. The candidate has to make an application to the University with the following documents along with the prescribed fee:

1. MBBS pass/degree certificate issued by the University.
2. Marks cards of all the university examinations passed MBBS course.
3. Attempt Certificate issued by the Principal
4. Certificate regarding the recognition of the Medical College by the Medical Council of India.
5. Completion of internship certificate.
6. In case internship was done in a non-teaching hospital, a certificate from the Medical Council of India that the hospital has been recognized for internship.
7. Registration by any State Medical council and
8. Proof of SC/ST or OBC or physically handicapped status, as the case may be.

In addition to the above mentioned documents, candidate applying for admission to superspeciality courses has to produce degree/pass certificate of MD/MS/DNB degree with prescribed fee.

Intake of Students

The intake of students to each course shall be in accordance with the ordinance in this behalf.

Course Duration

- a. M.D. / M.S. Degree Courses:

The course of study shall be for a period of 3 completed years including examinations. (MCI PG REG 2000 10:1)

- b. D.M/M Ch Degree Courses; (MCI PG REG 2000, 10:2)

The duration of these courses shall be for a period of 3 completed years including examinations.

Training Method

The postgraduate training for degree shall be of residency pattern. The post graduate shall be trained with graded responsibilities in the management and treatment of patients entrusted to his/her care. The participation of the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions grand rounds, case

demonstration, clinics, journal review meetings, CPC and clinical meetings. Every candidate should be required to participate in the teaching and training program of undergraduate students. Training should include involvement in laboratory and experimental work, and research studies. Basic medical sciences students should be posted to allied and relevant clinical departments or institutions. Exposure to applied aspects of their learning should be addressed. Similarly, clinical subjects' students should be posted to basic medical sciences and allied specialty departments or institutions.

Training of superspeciality [M.Ch] should follow similar pattern. In addition, they have to be trained in advanced techniques of diagnosis and treatment pertaining to their specialty, participate actively in surgical operations as well.

Attendance, Progress and Conduct

A candidate pursuing degree course should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run a clinic/laboratory/nursing home while studying postgraduate course

Each year shall be taken as a unit for the purpose of calculating attendance. Every student shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation, clinics and lectures during each year as prescribed by the department and not absent himself / herself from work without valid reasons. Every Candidate is required to attend a minimum of 80% of the training during each academic year of the post graduate course. This shall include assignments, assessment of full time responsibilities and participation in all facets of educational process. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% attendance of training period every year. Leave benefits shall be as per university rules.

A post graduate student pursuing degree course in broad specialties, MD, MS and superspeciality courses DM, M.Ch would be required to present one poster presentation, read one paper in national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him/her to be eligible to appear at the university degree examinations. (MCI, PG 2000, 13.9)

Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University Examinations.

Monitoring Progress of Studies

The learning process of students should be monitored through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment done by using checklists that assess various aspects.

The learning outcomes to be assessed include:

- Personal Attitudes,
- Acquisition of Knowledge,
- Clinical and operative skills, skills of performing necessary tests/experiments
- Teaching skills.
- Documentation skills

Personal Attitudes:

The essential items are:

- Caring attitude, empathy
- Initiative in work and accepting responsibilities
- Organizational ability
- Potential to cope with stressful situations and undertake graded responsibility
- Trust worthiness and reliability
- To understand and communicate intelligibly with patients and others
- To behave in a manner which establishes professional relationships with patients and colleagues
- Ability to work in team
- A critical enquiring approach to the acquisition of knowledge

The Methods used mainly consist of observation. Any appropriate methods can be used to assess these. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers. However every attempt should be made to minimize subjectivity.

Acquisition of Knowledge:

Lectures: Lectures/theory classes as necessary may be conducted. It is preferable to have one class per week if possible. They may, be employed for teaching certain topics. Lectures may be didactic or integrated.

The following selected common topics for post graduate students of all specialties to be covered are suggested here. These topics can be addressed in general with appropriate teaching-learning methods centrally or at departmental level.

- History of medicine with special reference to ancient Indian medicine
- Basics of health economics and health insurance
- Medical sociology, Doctor –Patient relationship, role of family in disease
- Professionalism & Medical code of Conduct and Medical Ethics
- Research Methods, Bio-statistics
- Use of library, literature search ,use of various software and databases

- Responsible conduct of research
- How to write an article, publication ethics and Plagiarism
- Journal review and evidence based medicine
- Use of computers & Appropriate use of AV aids
- Rational drug therapy
- National Health and Disease Control Programmes
- Roles of specialist in system based practice
- Communication skills.
- Bio medical waste management
- Patient safety, medical errors and health hazards
- Patient's rights for health information and patient charter.

These topics may preferably taken up in the first few weeks of the 1st year commonly for all new postgraduates and later in 2nd year or 3rd year as required during their progression of the programme. The specialty wise topics can be planned and conducted at departmental level.

- a) Integrated teaching: These are recommended to be taken by multidisciplinary teams for selected topics, eg. Jaundice, Diabetes mellitus, thyroid diseases etc. They should be planned well in advance and conducted.

Journal Review Meeting (Journal club):

The ability to do literature search, in depth study, presentation skills, use of audio – visual aids, understanding and applying evidence based medicine are to be focused and assessed. The assessment is made by faculty members and peers attending the meeting using a checklist

Seminars / symposia:

The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio – visual aids are to be assessed using a checklist.

Clinico-Pathological conferences:

This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.

Medical Audit: Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

Clinical Skills: Day to Day Work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills

Clinical Meetings:

Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list.

Group discussions: Group discussions are one of the means to train and assess the student's ability to analyse the given problem or situation, apply the knowledge and make appropriate decisions. This method can be adopted to train and assess the competency of students in analyzing and applying knowledge.

Death review meetings/Mortality meetings: Death review meetings is important method for reflective learning. A well conducted morbidity and mortality meetings bring about significant reduction in complications, improve patient care and hospital services. They also address system related issues. Monthly meetings should be conducted with active participation of faculty and students. Combined death review meetings may be required wherever necessary.

Clinical and Procedural Skills:

The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the log book.

Teaching Skills:

Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students

Attitude and Communication skills:

Candidates should be trained in proper communication skills towards interaction and communication with patients, attendees and society in general. There should be appropriate training in obtaining proper written informed consent, discussion and documentation of the proceedings. Structured training in various areas like consent, briefing regarding progress and breaking bad news are essential in developing competencies.

Variety of teaching –learning methods like Role play, video based training, standardized patient scenarios, reflective learning and assisting the team leader in all these areas will improve the skills. Assessment can be done using OSCE simulated scenarios and narratives or any appropriate means. Training to work as team member, lead the team whenever situation demands is essential. Mock drills to train and assess the readiness are very helpful.

Work diary / Log Book:

Every candidate shall maintain a Work Diary/Log Book and record his/her participation in the training programs conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, conducted by the candidate. A well written and validated Log Book reflects the competencies attained by the learner and points to the gap which needs address. This Log Book shall be scrutinized by concerned teachers periodically and certified, by the Head of Department and Head of the Institution, and presented during University Practical / Clinical examination.

Periodic tests:

In case of degree courses of three years duration (MD/MS, DM, M.Ch), the concerned departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practical / clinical and viva voce. One of these practical/clinical tests should be conducted by OSPE (objective structured practical examination or OSCE (objective structured clinical examination) method. Records and marks obtained in such tests will be maintained by the Head of Department and sent to the University, when called for,

Assessment

Assessment should be comprehensive & objective. It should address the stated competencies of the course. The assessment needs to be spread over the duration of the course.

FORMATIVE ASSESSMENT, ie., assessment during the training would include:

Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self directed learning and ability to practice in the system.

General Principles

Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to improve learning: it should also cover professionalism and communication skills. The Internal Assessment should be conducted in theory and clinical examination.

Quarterly assessment during the Postgraduate training course should be based on following educational activities:

1. Journal based/recent advances learning
2. Patient based/Laboratory or Skill based learning
3. Self directed learning and teaching
4. Departmental and interdepartmental learning activity
5. External and outreach Activities/CMEs

Records: Records and marks obtained in tests will be maintained by the Head of the Departments and will be made available to the University or MCI.

Procedure for defaulter:

Every department should have a committee to review such situations. The defaulting candidate is counseled by the guide and head of the department. In extreme cases of default the departmental committee may recommend that defaulting candidate be withheld from appearing the examination, if she/he fails to fulfill the requirements in spite of being given adequate chances to set himself or herself right.

Dissertation: Every candidate pursuing MD/MS degree course is required to carry out work on a selected research project under the guidance of a recognized post graduate teacher. The results of such a work shall be submitted in the form of a dissertation.

The dissertation is aimed to train a post graduate student in research methods and techniques. It includes identification of a problem, formulation of hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis and comparison of results and drawing conclusions.

Every candidate shall submit to the Registrar (Academic) of the University in the prescribed proforma, a synopsis containing particulars of proposed dissertation work within six months from the date of commencement of the course on or before the dates notified by the University. The synopsis shall be sent through the proper channel.

Such synopsis will be reviewed and the dissertation topic will be registered by the University. No change in the dissertation topic or guide shall be made without prior approval of the University.

The dissertation shall be written under the following headings:

1. Introduction
2. Aims or Objectives of study
3. Review of Literature
4. Material and Methods
5. Results

6. Discussion
7. Conclusion
8. Summary
9. References
10. Tables
11. Annexure

The written text of dissertation shall be not less than 50 pages and shall not exceed 150 pages excluding references, tables, questionnaires and other annexure. It should be neatly typed in double line spacing on one side of paper (A4 size, 8.27” x 11.69”) and bound properly. Spiral binding should be avoided. The dissertation shall be certified by the guide, head of the department and head of the Institution.

Adequate number of copies as per norms and a soft copy of dissertation thus prepared shall be submitted to the Controller of Examinations six months before final examination or before the dates notified by the University.

The dissertation shall be valued by examiners appointed by the university. Acceptance of dissertation work is an essential precondition for a candidate to appear in the University examination.

Guide:

The academic qualification and teaching experience required for recognition by this University as a guide for dissertation work is as per Medical Council of India Minimum Qualifications for Teachers in Medical Institutions Regulations, 1998 and its amendments thereof. Teachers in a medical college/institution having a total of eight years teaching experience out of which at least five years teaching experience as Lecturer or Assistant Professor gained after obtaining post graduate degree shall be recognized as post graduate teachers.

A Co-guide may be included provided the work requires substantial contribution from a sister department or from another medical institution recognized for teaching/training by this University / Medical Council of India. The co-guide shall be a recognized post graduate teacher of BLDE (Deemed to be University).

Change of guide:

In the event of a registered guide leaving the college for any reason or in the event of death of guide, guide may be changed with prior permission from the University.

Schedule of Examination:

The examination for M.D. /M.S and DM/M.Ch courses shall be held at the end of three academic years. The university shall conduct two examinations in a year at an interval of four to six months between the two examinations. Not more than two examinations shall be conducted in an academic year.

Scheme of Examination

M.D. /M.S. Degree

M.D. / M.S. Degree examinations in any subject shall consist of dissertation, written papers (Theory), Practical/Clinical and Viva Voce.

Dissertation:

Every candidate shall carryout work and submit a Dissertation as indicated above. Acceptance of dissertation shall be a precondition for the candidate to appear for the final examination.

Written Examination (Theory):

Written examination shall consist of **four** question papers, each of **three** hours duration. Each paper shall carry 100 marks. Out of the **four** papers, the 1st paper in clinical subjects will be on applied aspects of basic medical sciences and 4th paper on Recent advances, which may be asked in any or all the papers. In basic medical subjects and para-clinical -subjects, questions on applied clinical aspects should also be asked.

Practical / Clinical Examination:

In case of practical examination, it should be aimed at assessing competence and skills of techniques and procedures as well as testing students ability to make relevant and valid observations, interpretations and inference of laboratory or experimental work relating to his/her subject.

In case of clinical examination, it should aim at examining clinical skills and competence of candidates for undertaking independent work as a specialist. Each candidate should examine at least one long case and two short cases minimum. However additional assessment methods can be adopted which will test the necessary competencies reasonably well.

The total marks for Practical / Clinical examination shall be 300.

Viva Voce:

Examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills.

The total marks shall be 100:

- 80 Marks, for examination of all components of syllabus
- 20 Marks for Pedagogy

Examiners:

There shall be at least four examiners in each subject. Out of them two shall be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment as an examiner shall be as laid down by the Medical Council of India.

Criteria for pass & distinction: Criteria for declaring as pass in University Examination: A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory, (2) Practical/clinical and (3) viva voce examination. The candidate should pass independently in practical/clinical examination and Viva Voce: vide MCI pg 2000 Reg no 14(4) (Ciii)

Obtaining a minimum of 40% marks in each theory paper and not less than 50% cumulatively in all the four papers for degree examinations. Obtaining of 50% marks in Practical examination shall be mandatory for passing the examination as a whole in the said degree examination as the case may be.[amendment of MCI PG Regulations clause 14 dated 5.4.2018]

A candidate securing less than 50% of marks as described above shall be declared to have failed in the examination. Failed candidate may appear in any subsequent examination upon payment of fresh fee to the Controller of Examinations.

Declaration of distinction: A successful candidate passing the University examination in first attempt will be declared to have passed the examination with distinction, if the grand total aggregate of marks is 75 percent and above.

Distinction will not be awarded for candidates passing the examination in more than one attempt.

D.M/M.Ch Degree

DM/M.Ch Degree examinations in any subject shall consist of written theory papers (theory), practical/clinical and Viva voce.

Written Examination (Theory):

Written examination shall consist of **four** question papers, each of **three** hours duration. Each paper shall carry 100 marks. Out of the **four** papers, the 1st paper in clinical subjects will be on applied aspects of basic medical sciences. Recent advances may be asked in any or all the papers. In basic medical subjects and para-clinical -subjects, questions on applied clinical aspects should also be asked.

Practical / Clinical Examination:

In case of practical examination, it should be aimed at assessing competence and skills of techniques and procedures as well as testing students ability to make relevant and valid observations, interpretations and inference of laboratory or experimental work relating to his/her subject.

In case of clinical examination, it should aim at examining clinical skills, competence of candidates for undertaking independent work as a specialist. Each candidate should examine at least one long case and two short cases.

The total marks for Practical / clinical examination shall be 300.

Viva Voce:

Examination shall aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills.

The total marks shall be 100:

- 80 Marks, for examination of all components of syllabus
- 20 Marks for Pedagogy

Examiners: There shall be at least four examiners in each subject. Out of them two shall be external examiners and two shall be internal examiners. The qualification and teaching experience for appointment as an examiner shall be as laid down by the Medical Council of India.

Criteria for passing and distinction: Criteria for declaring as pass in University Examination: A candidate shall secure not less than 50% marks in each head of passing which shall include (1) Theory, (2) Practical including clinical and (3) viva voce examination. The candidate should pass independently in practical/clinical examination vide: MCI pg 2000 Reg no 144-c (iii).

Obtaining a minimum of 40% marks in each theory paper and not less than 50% cumulatively in all the four papers for degree examinations. Obtaining of 50% marks in Practical examination shall be mandatory for passing the examination as a whole in the said degree examination as the case may be.[amendment of MCI PG Regulations clause 14 dated 5.4.2018]

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Distinction will not be awarded for candidates passing the examination in more than one attempt.

Number of candidates per day: The maximum number of candidates for practical / clinical and viva-voce examination shall be as under:

- MD / MS Courses: Maximum of 8 per day
- DM/M.Ch Maximum of 3 per day

Additional annexure to be included in all curricula

Postgraduate Students Appraisal Form
Pre/Para/Clinical Disciplines

Name of Department/Unit :
Name of the PG Student :
Period of Training : FROM..... TO.....

Sr. No	PARTICULARS	Not Satisfactory	Satisfactory	More Than Satisfactory	Remarks
		1 2 3	4 5 6	7 8 9	
1	Journal based/recent advances learning				
2	Patient based /Laboratory or Skill based learning				
3	Self directed learning and teaching				
4	Departmental and interdepartmental learning activity				
5	External and Outreach Activities/CMEs				
6	Thesis/Research work				
7	Log Book Maintenance				

Publications Yes/No

Remarks*
.....
.....
.....

*Remarks: Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.

SIGNATURE OF ASSESSEE

SIGNATURE OF GUIDE

SIGNATURE OF HOD

SIGNATURE OF UNIT CHIEF

SECTION -II

MD MICROBIOLOGY

a) **GOALS-** At the end of course the student may be able to work following areas as

1. Clinical microbiologist Train students of medicine in the field of medical Microbiology. Theoretical and Practical training is given to in the subspecialties viz., Bacteriology, Virology, Parasitology, Immunology and Mycology so that Microbiologist should guide the clinician for proper diagnosis and treatment of infectious diseases for better patient care.

2. Biomedical research –

They are introduced to basic research methodology in Medical Microbiology. He may be able to plan and organize the basic research in medical Microbiology conduct fundamental and applied research.

3. Teaching: They are also trained in teaching methods which may enable them to take up teaching assignment in medical colleges/institutions and also guide the designing of curriculum, lesson plan for theory and practical classes.

Objectives:

At the end of the course the students will be able to:

1. Establish good “Laboratory medicine” in hospital and community in the field of bacteriology, virology, Parasitology, immunology and mycology.
2. Participate in hospital infection control and guide appropriate hospital waste disposal.
3. Undertake teaching assignment of microbiology in a medical college.
4. Undergo specialization in any of the above subspecialties.
5. Carry out applied and fundamental research in various branches of medicine involving microbiological work.
6. Assist to conduct investigations of outbreaks of infectious diseases in public health field.

Specific Learning Objectives:

At the end of the course a postgraduate student in Physiology should be able to:

1. Demonstrate comprehensive knowledge and understanding of Microbiology.
2. Comprehend and understand the life cycles of microbes and the diseases caused by them.
3. Select and use appropriate teaching techniques and resources.
4. Critically evaluate published journal literature and to effectively use the library facilities including computer, C.D. Rom and Satellite search.

5. Carryout relevant research.
6. Function as an effective member of teaching team or research team.
7. Carryout professional obligations ethically and keeping in view national health policy

B) SYLLABUS OR COURSE CONTENT

General Microbiology

1. History and Pioneers in Microbiology.
2. Microscopy.
3. Morphology of bacteria and other microorganisms.
4. Nomenclature and classification of microbes.
5. Growth and nutrition of bacteria.
6. Bacterial metabolism.
7. Sterilisation and disinfection.
8. Bacterial toxins.
9. Bacterial antagonism: Bacteriocine.
10. Bacterial genetics.
11. Gene cloning
12. Antibacterial substances used in the treatment of infections and drug resistance in bacteria.
13. Bacterial ecology – Normal flora of human body, Hospital environment, Air, Water and Milk.
14. Host parasite relationship.
15. Diagnostic tests based on molecular biology
16. Organization of clinical Microbiology laboratory and quality control / quality assurance.
17. Hospital Waste Management: Organization for Health care waste management (biomedical waste), techniques for treatment and disposal of biomedical waste regulation on biomedical waste management, 2015.

Immunology

1. Normal immune system
2. Innate immunity
3. Antigens
4. Immunoglobulins
5. Complement
6. Antigen-Antibody reactions
7. Cell mediated immunity
8. Hypersensitivity
9. Immunodeficiency
10. Auto-immunity
11. Immuno tolerance
12. Immunology of transplantation

13. Tumour immunology
14. Prophylaxis and immunotherapy
15. Measurement of immunity.
16. Immunogenetics.
17. Cells of the Immune System
18. Immune response
19. Design and development of vaccines.
20. Immunopotentiation and Immunomodulation

Systematic Bacteriology

1. Isolation, description and identification of bacteria.
2. Staphylococcus and Micrococcus: The anaerobic gram positive cocci
3. Streptococcus and Lactobacillus
4. Neisseria, Branhamella & Moraxella
5. Corynebacterium and other coryniform organism
6. Bacillus: the anaerobic spore bearing bacilli
7. Clostridium: The spore bearing anaerobic bacilli
8. Enterobacteriaceae
9. Vibrios, Aeromonas, Plesiomonas, Campylobacter and Spirillum
10. Haemophilus and Bordetella
11. Pasteurella and Francisella
12. Brucella
13. Mycobacteria
14. Actinomyces, Nocardia, and Actinobacillus
15. Pseudomonas
16. Spirochaetes
17. Chlamydiae
18. Rickettsiae
19. The bacteroidaceae: Bacteriodes, Busobacterium and leptotricha
20. Mycoplasmatales: Mycoplasma, Ureaplasma, Acholeplasma
21. Erysipelothrix and listeria
22. Chromobacterium, Flavobacterium, Acinetobacter and Alkaligenes
23. Miscellaneous bacteria

Virology

1. The nature of viruses
2. Classification of viruses
3. Morphology, virus structure
4. Viral replication
5. The genetics of viruses
6. Pathogenicity of viruses
7. Epidemiology of viral infections

8. Vaccines
9. Anti viral drugs
10. Bacteriophages
11. Pox viruses
12. Herpes viruses
13. Vesicular viruses
14. Toga viridae
15. Flavi viridae
16. Arena viridae
17. Marburg and Ebola viruses
18. Rubella
19. Orbi viruses
20. Influenzae viruses
21. Respiratory diseases: Rhinoviruses, Adenoviruses and Corona viruses
22. Paramyxoviridae
23. Enteroviruses
24. Hepatitis viruses
25. Rabies viruses
26. Slow Viruses
27. Human immunodeficiency viruses
28. Oncogenic viruses
29. Teratogenic viruses
30. Other Enteric Viruses
31. Bunyaviridae
32. Emerging & re-emerging viral infection. Zika, Nipah virus

Parasitology

1. Protozoan parasites of medical importance:
 1. Entamoeba,
 2. Giardia,
 3. Trichomonas,
 4. Leishmania,
 5. Trypanosoma,
 6. Plasmodium,
 7. Toxoplasma,
 8. Sarcocystis,
 9. Cryptosporidium,
 10. Isospora
 11. Microsporidium
 12. Babesia,
 13. Balantidium etc.

2. Helminthology: All those medically important helminthes belonging to Cestodes, Trematode and Nematode.

Cestode:

1. Diphyllbothrium,
2. Taenia,
3. Echinococcus,
4. Hymenolepis,
5. Dipylidium,
6. Multiceps etc.
7. Trematode:
8. Schistosoma,
9. Fasciola,
10. Gastrodiscoides,
11. Paragonimus,
12. Clonorchis,
13. Opisthorchis, etc.,

Nematodes:

1. Trichuria,
2. Trichinella,
3. Strongyloides,
4. Ancylostoma,
5. Ascaris.
6. Enterobius,
7. Filarial worms,
8. Dracunculus, etc.,
9. Antiparasitic agent.
10. Entomology

Mycology

1. The morphology and reproduction in fungi and antimycotic agents,
2. Classification of fungi,
3. Contaminant and opportunistic fungi
4. Superficial mycotic infections.
5. Fungi causing subcutaneous mycoses
6. Fungi causing systemic infections.
7. Opportunistic fungal infections
8. Antifungal drugs and susceptibility testing.

Applied Microbiology

1. Epidemiology of infectious diseases
2. Hospital acquired infections
3. Hospital Antibiotic Policy

4. Infections of various organs and systems of human body
5. Immunization schedules
6. Molecular genetics as applicable to microbiology.
7. Sexually transmitted diseases
8. Vaccinology: Principle, methods of preparation, administration of vaccines.
9. Bioterrorism
10. Emerging and Reemerging microbial infections
11. Biosafety in Microbiology
12. Epidemiology of Infectious diseases
13. Investigation of an Infectious outbreak in hospital and community
14. Statistical Analysis of Microbiological data & Research methodology
15. Animal and Human ethics involved in Microbiological work

Biochemistry

1. Protein & estimation characterisation
2. Nucleic acid purification & estimation characterisation
3. Ultracentrifugation
4. Column chromatography

Pathology

1. Pathological changes in microbial infections
2. Demonstration of pathogen in tissue section

SKILLS: Bacteriology

1. Preparation and pouring of media – Nutrient agar, Blood agar, MacConkey agar, Sugars, Triple sugar iron Agar (TSI) etc.
2. Operation and maintenance of autoclave, hot air oven, distillation plant, filters like Seitz and Membrane and sterility tests.
3. Washing and sterilization of glassware.
4. Preparation of reagents – oxidase, Kovacs reagent etc.,
5. Disposal of contaminated materials.
6. Testing of disinfectants – Phenol coefficient and In use test.
7. Quality control of media, reagents etc.,
8. Aseptic practice in Lab and safety precautions.
9. Care and maintenance of common laboratory equipments.
10. Preparation of antibiotic discs; performance of Kirby Bauer, Stokes etc.,
Estimation of Minimum inhibitory/ Bactericidal concentrations by tube / plate dilution methods. IQC antibiotic disc potency
11. Tests for Beta lactamases.
12. Collection of clinical specimens for Microbiological investigations.
13. Environmental sampling

14. Techniques of anaerobiosis.
15. Identification of Bacteria of Medical Importance upto species level (except Anaerobes which could be upto generic level)
16. Preparation of stains viz, Grams, Alberts, Capsules, spores, Ziehl Neelsen etc., and performing staining procedure, identification and interpretation. IQC of staining
17. Care and operation of microscopes viz., light Dark ground, Phase Contrast and Fluorescent microscopes, Electron microscopy.
18. Skin tests Mantoux, Lepromin, Casoni's etc.
19. Serum antibiotic assay
20. Sero grouping of streptococci
21. Antibiotic susceptibility test for Mycobacteria.
22. Sputum concentration techniques.
23. Identification of HAI, Calculation of HAI quality indicators
24. Methods of preservation of bacteria
25. Maintenance of stock culture
26. Operation of Bact /T Alert, VITEK II- compact

Immunology

1. Collection and preservation of serum
2. Preparation of antigens
3. Preparation of adjuvants and rising of antisera in animals
4. Performance of common serological tests
5. ANA by IF and Immunoblot
6. IQC Serology
7. Immunodiffusion and CIEP
8. Operation and maintenance of ELISA reader and washer
9. Radial immunodiffusion
10. Immuno electrophoresis
11. CD4, CD8 counts
12. Operation & maintenance of Mini VIDAS

Mycology

1. Collection and processing of clinical specimen for fungi,
2. Special techniques like Woods lamp examination, hair baiting techniques, slide cultures.
3. Stock culture maintenance
4. Animal pathogenicity test for Cryptococcus and Candida
5. Basic technique – KOH preparation, Germ tube, Slide culture, Negative staining LPBC Mount

Parasitology

1. Examination of faeces for ova, cysts and larvae and trophozoites.
2. Stool Concentration methods.

3. Egg counting techniques
4. Examination of peripheral blood, urine, CSF, and other fluids for parasites.
5. Examination and identification of histopathology slides for parasitic infection,
6. Serological tests for parasitic diseases
7. Preservation of parasites.
8. Permanent staining techniques for parasites – Giemsa stain, modified ZN for *C parvum*
9. Entomology slides.
10. Laboratory diagnosis of toxoplasma.
11. Laboratory diagnosis of Malaria.
12. Laboratory diagnosis of Coccidian parasites.

Virology

1. Preparation and identification of CPE in various tissue cultures.
2. Serological tests for viral infections
3. ELISA technique for viral diagnosis.
4. Handling of experimental animals and collection of various samples for evidence of viral infection in animals.
5. Laboratory diagnosis of HIV infection and AIDS
6. Laboratory diagnosis of Hepatitis
7. Prevention and laboratory safety measures
8. Preparation of Tissue Culture
9. Virus Titration

C. TEACHING LEARNING METHODS

Duration of degree course: 3 Years (6 terms)

The training is given under the following headings:

1. Seminars
2. Culture seminars & serological tests
3. Animal experiments
4. Journal clubs
5. Symposia
6. Teaching – undergraduate students
7. Slide seminars
8. Preparation of dissertation under the guidance of a recognized teacher
9. Postings to other institutions
10. Guest lectures

Each candidate is posted to different sections on rotation. They should get acquainted with the basic microbiology for first three months. The next three months they are expected to submit a synopsis on dissertation topic that has been chosen by them. The posting schedule is given as follows

Media and washing,sterilization(including CSSD)	-6months
Bacteriology-	-6 months
Mycobacteriology	-6 months
Serology	-6 months
Virology(including outside posting)	-3 months
Parasitology	-3 months
Mycology	-4 months

- Seminars shall be conducted once a week on the theory question topic.
- Culture seminars and discussions are held once a week. This helps in systematic way of identification of all the routine bacteria for first few months followed by identification of rare cultures.
- Clinical sample seminars are held once a month by processing the clinical samples in identification of microbe causing that condition.
- Animal experiments, egg inoculation are conducted periodically.
- Journal clubs are conducted every week-choosing topics from recent journals.
- Symposia are conducted once in every Semester.
- The candidates are encouraged to take part in Clinical meetings and discussions.
The M.D. Postgraduate students are trained to conduct practical demonstration classes for Undergraduates in their 2nd year of study. They are expected to take theory lectures for Undergraduates during their final year.

I Schedule of training:

Each student shall undergo orientation in various sections in microbiology during the first 3 months so as to get familiarized with the basic knowledge in the subject. At the end of the next 3 months, the student shall have to submit the synopsis of the dissertation.

II term

Culture seminars – pure culture of all bacteria and animal experiments.

III term

Culture seminars on clinical samples like stool, pus etc., and serological tests-
Methodology.

IV term

Training in Mycology, Parasitology, UG teaching – theory for smaller batches and practicals and demonstrations.

V term

Virology Experiments.

UG Teaching – Theory and practicals for smaller batches.
Submission of dissertation.

VI term

Slide seminars, Mock examinations.

POSTING IN OTHER DEPARTMENTS

Students will be posted for Allied and Applied Departments during the period of III, IV and V terms. Total period not exceeding 3 months. The departments are:

1. Virology & Vaccinology etc.,	-	1 month
2. Clinical Pathology	-	1 month
3. Clinical Biochemistry	-	1 month
4. ICTC	-	15 days
5. RNTCP	-	15 days
6. SKIN & VD	-	15 days

The candidates are posted to different institutions for applied Microbiology like Virology, Vaccinology etc.

The students shall maintain a Log Book for the period of his/her postings to other departments Institutions and get the Certificate from the Departmental Head at the end of postings.

D. MONITORING ASSESSMENT METHODOLOGY

Please see Chapter IV

- a) The Progress of the student is monitored by conducting periodical assessment tests
- b) The Student shall maintain a Log Book and assessment records (specimen Check list are given in Chapter IV) are maintained by the Guide/s and Head of the Department.

Dissertation Work

During the course of study every candidate has to prepare a dissertation individually, on a selected topic under the direct guidance and supervision of a recognized postgraduate teacher as per MCI and university regulations.

The suggested time schedule for dissertation work is:

1. Selection of the topic for dissertation within 2 months of joining.
2. Preparation of work for dissertation synopsis including pilot study and submission of the synopsis to the University within 3 months from the commencement of course or as per the dates notified by the University from time to time.
3. Data collection for dissertation and writing the dissertation.
4. The candidates shall report the progress of the dissertation work to the concerned guide periodically and obtain clearance for the continuation of the dissertation wor

5. Submission of the dissertation six months prior to the final examination or as per the dates notified by the University from time to time.

E. SCHEME OF EXAMINATION

Theory consists of four papers each of 100 marks	:	400 Marks
Practicals conducted for 2 days	:	300 Marks
Viva-voce	:	100 Marks

a. THEORY

There shall be four question papers, each of three hours duration. Each paper shall consist of two long essay questions each question carrying 20 marks and 6 short essay questions each carrying 10 marks. Total marks for each paper will be 100. Questions on recent advances may be asked in any or all the papers*.

Details of distribution of topics for each paper will be as follows:

PAPER I	General Microbiology and Immunology
PAPER II	Systematic Bacteriology
PAPER III	Mycology and Virology, Parasitology
PAPER IV	Applied Microbiology and Recent Advances

* The topics assigned to the different papers are generally evaluated under those sections. However a strict division of the subject may not be possible and overlapping of topics is inevitable. Students should be prepared to answer overlapping topics.

b. PRACTICALS

Duration of examination: 2 days (as per the scheme enclosed). Marks: 200

The examination will consist of the following exercise jointly conducted and evaluated by four examiners (2 internals and 2 externals)

Sl. No	Exercise/Viva	Maximum Marks
1	Long exercise Bacteriology	60
2	Short exercise Bacteriology	30
3	Mycobacteriology / Special staining	30
4	Exercise in Virology	30
5	Exercise in Immunology	30
6	Exercise in Mycology	30
7	Exercise in Parasitology	30
8	Serology Exercise	30
9	Identification of Slides	30
Total marks for Practicals		300
	Viva Voce	
10	Viva Voce	80
11	Pedagogy	20
	Total	100

c. VIVA-VOCE Marks: 100

The Viva-Voce examination consists of question on Bacteriology, Mycology, Virology, Immunology, and Parasitology topics, it will also include recent advances, history and scope of Microbiology

1. Viva-Voce Examination: (80 Marks)

Students will be examined by all the examiners together about comprehension, analytical approach, expression and interpretation of data. Student shall also be given case reports, charts for interpretation. It includes discussion on dissertation

2. Pedagogy Exercise: (20 Marks)

A topic be given to each candidate along with the Practical Examination question paper on the first day. Student is asked to make a presentation on the topic on the second day for 8 – 10 minutes.

d.

Maximum marks for	Theory	Practicals	Viva-voce	Total
M.D. Microbiology	400	300	100	800

F. LIST OF BOOKS RECOMMENDED:**[Recent editions of following books]**

1. Samuel Baron, **Medical Microbiology**, 4th Edn, 1996, Churchill Livingstone Inc.
2. Edmin H Lennette, **Laboratory Diagnosis of Viral Infections**, 4th Edn, 2010, Newyork Marcel Dekker, Inc.
3. Gordon Cook, **Manson's Tropical Diseases**, 22th Edn, 2008, London, ELBS.
4. John G Holt et al, **Bergey's Manual of Determinative Bacteriology**, 9th Edn, 1994, Maryland, Williams & Wilkins.
5. Albert Balows, **Manual of Clinical Microbiology**, 5th Edn, 1991, Washington D.C, American Society for Microbiology
6. Ellen Jo Baron et al; **Bailey & Scott's Diagnostic Microbiology**, 13th Edn, 2013, Missouri, Mosby
7. Douglas D Richman, **Clinical Virology**, 3rd 2009, Newyork, Churchill Livingstone.
8. Bob A Freeman, **Burrows Textbook of Microbiology**, 22st Edn, 1985, W.B. Saunders.
9. Brian I Duerden & B S Drasar, **Anaerobes in Human Disease**, 1991, Great Britain, Edward Arnold.
10. Elmer W Koneman et al, **Introduction to Diagnostic Microbiology**, 2005, Philadelphia, J B Lippincott Company.
11. Bernard N Fields et al, **Field Virology**, Vol. 1, 6th Edn, 2013, Philiadelphia, Lippincott-Ramen.

12. Bernard Fields et al, **Field's Virology**, Volume 2, 6th Edn, 2013, Philadelphia, Lippincott-Raven.
13. Danial Greenwood et al, **Medical Microbiology**, A guide to microbial Infections, Pathogenesis, Immunity, Laboratory Diagnosis and Control, 18th Edn, 2012, London, Churchill Livingstone.
14. J G College et al, Mackie & McCartney, **Practical Medical Microbiology**, 14th Edn, 1996, London, Churchill Livingstone.
15. John V Bennett & Philip S Brachman, **Hospital Infections**, 4th Edn, 1997, Little Brown.
16. Noel R Rose et al, **Manual of Clinical Laboratory Immunology**, 6th Edn, 2002, Washington D.C, American Society for Microbiology.
17. William E Paul; **Fundamental Immunology**, 7th Edn, 2012, Newyork, Raven Press.
18. Ivan Roitt, **Essential Immunology**, 12th ed, 2011
19. Stites, **Clinical Basic Immunology**, 8th ed, 1994
20. Parasitology: Paul Chester Beaver, Rodney Clifton Jung, Eddie Wayne cipp. **Clinical parasitology**: 9 th edition, Philadelphia Lea and Febiger.
21. Topley & Wilsons Microbiology and Microbial infections. Bacteriology VOL 1 & 2 (10th edition)
22. Topley & Wilsons Microbiology, Virology Volume 1& 2(10th edition)
23. Topley & Wilsons Microbiology, Medical Mycology (10th edition)
24. Topley & Wilsons Microbiology, Parasitology (10th edition)

G. LIST OF JOURNALS RECOMMENDED:

1. Journal of Medical Microbiology, Lippincott Raven Publishers, Pathological Society of Great Britain & Ireland, 1998.
2. Clinical Infectious Diseases. Pub: The University of Chicago Press, Chicago, Illinois 60637, 1998.
3. Clinical Microbiology Reviews. Pub: The American Society for Microbiology.
4. Microbiology & Molecular Biology Reviews (mibr). Pub: American Society For Microbiology, 1999.
5. Journal of Clinical Microbiology (JCM); Pub: American Society for Microbiology, 1999.
6. The Journal of Infectious Diseases. Pub: The University of Chicago Press, 1998.
7. Journal of Communicable Diseases, Pub: The Indian Society for Malaria and other communicable disease. 1999.
8. Infectious Disease Clinics of North America. Pub: W B Saunder Company, A Division of Harcourt Bract & Company, 1999.
9. Indian Journal of Medical Microbiology, Pub: Indian Associates of Medical Microbiologists, 1999.
10. The Indian Journal of Medical Research. Pub: Indian Council of Medical Research, New Delhi. 1999.
11. Annual Review of Microbiology. Pub: Annual Reviews Inc. Palo Alto. California, USA 1997.

SECTION III**ANNEXURES****MODEL CHECK-LIST FOR EVALUATION OF JOURNAL
REVIEW PRESENTATIONS**

Name of the Student:

Name of the Faculty/Observer:

Date:

Sl. No.	Items for observation during presentation	Poor 1	Average 2	Good 3	Excellent 4
1.	Article Chosen was				
2.	Extent of understanding of scope & objectives of the paper by the candidate				
3.	Whether cross references have been consulted				
4.	Whether other relevant publications consulted				
5.	Ability to respond to questions on the paper / subject				
6.	Audio-Visual aids used				
7.	Ability to defend the paper				
8.	Clarity of presentation				
9.	Any other observation				
	Total Score				

Check List – II**MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS**

Name of the Student:

Name of the Faculty/Observer:

Date:

Sl. No.	Items for observation during presentation	Below Average 1	Average 2	Good 3	Very Good 4
1.	Whether other relevant publications consulted				
2.	Whether cross references have been consulted				
3.	Completeness of Preparation				
4.	Clarity of Presentation				
5.	Understanding of subject				
6.	Ability to answer questions				
7.	Time scheduling				
8.	Appropriate use of Audio-visual aids				
9.	Any other observation				
	Total Score				

Check List – III**MODEL CHECK LIST FOR EVALUATION OF TEACHING SKILL PRACTICE**

Sl. No .		Strong Point	Weak Point
1.	Communication of the purpose of the talk		
2.	Evokes audience interest in the subject		
3.	The introduction		
4.	The sequences of ideas		
5.	The use of practical examples and/or illustrations		
6.	Speaking style (enjoyable, monotonous, etc., specify)		
7.	Attempts audience participation		
8.	Summary of the main points at the end		
9.	Asks questions		
10.	Answers questions asked by the audience		
11.	Rapport of speaker with his audience		
12.	Effectiveness of the talk		
13.	Uses AV aids appropriately		

Check List – IV**MODEL CHECK LIST FOR DISSERTATION SYNOPSIS PRESENTATION**

Name of the Student:

Name of the Faculty:

Date:

Sl. No.	Points to be considered	Poor	Below Average 1	Average 2	Good 3	Very Good 4
1.	Interest shown in selecting a topic					
2.	Appropriate review of literature					
3.	Discussion with guide & Other faculty					
4.	Quality of Protocol					
5.	Preparation of proforma					
	Total Score					

Check List – V**CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE / CO-GUIDE**

Name of the Student:

Name of the Faculty:

Date:

Sl. No	Items for observation during presentation	Below Average 1	Average 2	Good 3	Very Good 4
1.	Periodic consultation with guide/co-guide				
2.	Regular collection of case material				
3.	Depth of analysis / discussion				
4.	Departmental presentation of findings				
5.	Quality of final output				
6.	Others				
	Total Score				

Annexure VI
Postgraduate Students Appraisal Form
Pre / Para /Clinical Disciplines

Name of the Department/Unit:

Name of the PG Student:

Period of Training: FROM.....TO.....

Sr No	PARTICULARS	Not Satisfactory	Satisfactory	More Than Satisfactory	
		1 2 3	4 5 6		7 8 9
1	Journal based / recent advances learning				
2	Patient based /Laboratory or Skill/ based learning				
3	. Self directed learning and teaching				
4	Departmental and interdepartmental learning activity				
5	External and Outreach Activities / CMEs				
6	Thesis / Research work				
7	Log Book Maintenance				

Publications

Yes/ No

Remarks* _____

***REMARKS:** Any significant positive or negative attributes of a postgraduate student to be mentioned. For score less than 4 in any category, remediation must be suggested. Individual feedback to postgraduate student is strongly recommended.

SIGNATURE OF ASSESSEE

SIGNATURE OF CONSULTANT

SIGNATURE OF HOD

LOG BOOK

Table 1: Academic activities attended

Name:

Admission year:

College:

Date	Type of Activity Specify Seminar, Journal Club, Presentation, UG teaching	Particulars

LOG BOOK

Table 2: Academic presentations made by the student

Name:

Admission Year:

College:

Date	Topic	Type of Presentation Specify Seminar, Journal Club, Presentation, UG teaching Etc.

SECTION - IV**MEDICAL ETHICS & MEDICAL EDUCATION****Sensitization and Practice****Introduction**

There is now a shift from the traditional individual patient, doctor relationship, and medical care. With the advances in science and technology and the needs of patient, their families and the community, there is an increased concern with the health of society. There is a shift to greater accountability to the society. Doctors and health professionals are confronted with many ethical problems. It is, therefore necessary to be prepared to deal with these problems. To accomplish the Goal (i), General Objectives (ii) stated in Chapter II (pages 2.1 to 2.3), and develop human values it is urged that **ethical sensitization** be achieved by lectures or discussion on ethical issues, clinical case discussion of cases with an important ethical component and by including ethical aspects in discussion in all case presentations, bedside rounds and academic postgraduate programs.

Course Contents

1. Introduction to Medical Ethics

What is Ethics?

What are values and norms?

Relationship between being ethical and human fulfillment

How to form a value system in one's personal and professional life

Heteronomous Ethics and Autonomous Ethics

Freedom and personal Responsibility

2. Definition of Medical Ethics

Difference between medical ethics and bio-ethics

Major Principles of Medical Ethics 0

Beneficence = fraternity

Justice = equality

Self determination (autonomy) = liberty

3. Perspective of Medical Ethics

The Hippocratic Oath

The Declaration of Helsinki

The WHO Declaration of Geneva

International code of Medical Ethics (1993)

Medical Council of India Code of Ethics

4. Ethics of the Individual
 - The patient as a person
 - The Right to be respected
 - Truth and confidentiality
 - The autonomy of decision
 - The concept of disease, health and healing
 - The Right to health
 - Ethics of Behavior modification
 - The Physician – Patient relationship
 - Organ donation

5. The Ethics of Human life
 - What is human life?
 - Criteria for distinguishing the human and the non-human
 - Reasons for respecting human life
 - The beginning of human life
 - Conception, contraception
 - Abortion
 - Prenatal sex-determination
 - In vitro fertilization (IVF), Artificial Insemination by Husband (AIH)
 - Artificial Insemination by Donor (AID)
 - Surrogate motherhood, Semen Intra fallopian Transfer (SIFT),
 - Gamete Intra fallopian Transfer (GIFT), Zygote Intra fallopian Transfer (ZIFT),
 - Genetic Engineering

6. The family and society in Medical Ethics
 - The Ethics of human sexuality
 - Family Planning perspectives
 - Prolongation of life
 - Advanced life directives – The Living Will
 - Euthanasia
 - Cancer and Terminal Care

7. Profession Ethics
 - Code of conduct
 - Contract and confidentiality
 - Charging of fees, Fee-splitting
 - Prescription of drugs
 - Over-investigating the patient
 - Low – Cost drugs, vitamins and tonics
 - Allocation of resources in health cares
 - Malpractice and Negligence

8. Research Ethics
 - Animal and experimental research / humanness
 - Human experimentation
 - Human volunteer research – Informed Consent
 - Drug trials\
 - ICMR Guidelines for Ethical Conduct of Research – Human and Animal
 - ICH / GCP Guidelines
 - Schedule Y of the Drugs and Cosmetics Act.

9. Ethical work -up of cases
 - Gathering all scientific factors
 - Gathering all human factors
 - Gathering value factors
 - Identifying areas of value – conflict, setting of priorities,
 - Working our criteria towards decisions

Recommended Reading

1. Francis C. M., **Medical Ethics**, 2nd Ed, 2004 Jaypee Brothers, Bangalore/-
2. Ethical guidelines for biomedical research on human participants, ICMR publication 2017
3. Santosh Kumar: the elements of research, writing and editing 1994, Dept of Urology, JIPMER, Pondicherry
4. Srinivas D.K et al, Medical Education Principles and Practice, 1995, National Teacher Training Centre, JIPMER, Pondicherry
5. Indian National Science Academy, Guidelines for care and use of animals in scientific Research, New Delhi, 1994
6. International committee of Medical Journal Editors, Uniform requirements for manuscripts submitted to biomedical journals, N Engl J Med 1991
7. Kirkwood B.R, Essentials of Medical Statistics, 1st Ed., Oxford: Blackwell Scientific Publications 1998
8. Mahajan B.K. Methods in bio statistics for medical students, 5th Ed, New Delhi, Jaypee, Brothers Medical Publishers, 1989
9. Raveendran, B. Gitanjali: A Practical approach to PG dissertation, New Delhi, Jaypee Publications, 1998.
10. John A Dent. Ronald M Harden, A Practical guide for medical teacher, 4th Edition, Churchill Livingstone, 2009.
11. Tejinder Singh Anshu, Principles of Assessment in Medical Education, Jaypee brothers
12. Dr. K.Lakshman, A Hand Book on Patient Safety, RGUHS & Association of Medical Consultants, 2012

13. Bernard Mogs, Communication skills in health & social care, 3rd Edition, (S) SAGE, 2015
14. Manoj Sharma, R. Lingyak Petosa, Measurement and Evaluation for Health Educators, Jones & Bartlett Learning.
15. David E. Kern, Patricia A, Thomas Mark T, Hughes, Curriculum Development for Medical Education. A six-step approach, The Johns Hopkins University press/Baltimore.
16. Tejinder Singh Piyush Gupta Daljit Singh, Principles of Medical Education (Indian Academy of Paediatrics), 4th Edition, Jaypee Brothers, 2013.
17. Robert Reid, Torri Ortiz Linenemann, Jessica L.Hagaman, Strategy Instruction for Students with learning disabilities, 2nd Edition, The Guilford Press London.
18. Lucinda Becker Pan Demicolo, Teaching in higher education, (S) SAGE, 2013.
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