



# BLDE UNIVERSITY

## PG CURRICULUM

### 2012-13

### M. D. Radio-Diagnosis

Published by

**BLDE UNIVERSITY**

[Declared as Deemed to be University u/s 3 of UGC act, 1956, vide notification No.F.9-37/2007-U.3(A)]

The Constituent College

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

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## B.L.D.E. UNIVERSITY

(Declared vide notification No. F.9-37/2007-U 3 (A) Dated. 29-2-2008 of the MHRD, Government of India under Section 3 of the UGC Act,1956)  
The Constituent College

SHRI. B. M. PATIL MEDICAL COLLEGE, HOSPITAL AND RESEARCH CENTRE

BLDEU/REG/PG/2012-13/845

September 20, 2012

### NOTIFICATION

Subject: Revised Curriculum for the Post Graduate Degree and Diploma Courses – 2012

Reference:

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 meeting of the Academic Council of the University held on April 11, 2012
3. Minutes of the meeting of the BOM of the University held on May 23, 2012.

The Board of Management of University is pleased to approve the Curriculum for Post Graduate Degree and Diploma Courses at its meeting held on May 23, 2012.

The revised curriculum shall be effective, from the Academic Session 2012-13 onwards, for Post Graduate Degree and Diploma Course in the Constituent College of the University viz Shri B. M. Patil Medical College, Hospital and Research Centre.

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

  
REGISTRAR  
REGISTRAR.  
BLDE University, Bijapur.

Copy to:

1. The Secretary, UGC, New Delhi
2. The Controller of Examinations
3. Prof. & HODs of Pre, Para and Clinical Departments.
4. PS to Hon'ble President
5. PS to Hon'ble Vice Chancellor
6. Office Copy

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## **Vision and Mission**

- *Committed to provide globally competitive quality medical education.*
- *To provide the best health care facilities in this backward region, in particular, to socially disadvantaged sections of the society.*
- *Constantly striving to become a reputed research University with world-class infrastructure, latest tech-tools for teaching/research and adopting global best practices.*

*.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:

- (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, retraining 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

Source: Medical Council of India, Regulations on Postgraduate Medical Education, 2000. [amended upto January 2010]

### **Eligibility for Admission:**

Eligibility requirements for Post Graduate Diploma and Degree Courses are :-

1. The candidates seeking admission to these courses should have passed MBBS from the college recognized by Medical Council of India.

Eligibility requirements for Post graduate degree in superspeciality courses, M.Ch./D.M are:

The candidate seeking admission to these courses should have passed MS/MD from the college recognized by Medical Council of India.

2. As per the requisitions of statutory bodies, as laid out in post graduate regulations 2000 of Medical Council of India and its amendments thereof, the minimum percentage of marks in the entrance test conducted by the University for eligibility for admission to Post Graduate courses in broad specialties and super specialties shall be 50 percent for candidates belonging to General category and 40 percent for the candidates belonging to Scheduled Caste, Scheduled Tribes and Other Backward Classes. Eligibility for persons with locomotor disability of lower limbs category will be 45 percent.

Eligibility for Foreign / PIO / NRI students will be based on qualifying examination marks.

### **The MCI norms to qualify for Admissions**

Candidates seeking admission to these Post Graduate Degree courses should have passed M.B.B.S. recognised 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 and Diploma Courses even if he/she is placed in the merit list of BLDEU-PGET/BLDEU-SUPERSPECIALTY ET.

### **Obtaining Eligibility Certificate by the University before making Admission**

Candidate shall not be admitted for any postgraduate degree/diploma 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 superspecialty courses has to produce degree/pass certificate of MD/MS 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 years consisting of 6 terms including examinations. For Candidates possessing recognized two year Postgraduate Diploma in the same subject the duration of the course shall be two 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 years including examinations.

c.Diploma Courses:

The course of study shall be for a period of 2 years consisting of 4 terms including examinations(MCI PG REG 2000,10.3).

### **Training Method**

The postgraduate training for degree/diploma 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. Similarly, clinical subjects' students should be posted to basic medical sciences and allied specialty departments or institutions.

### **Attendance, Progress and Conduct**

A candidate pursuing degree/diploma 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,assessed 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 persuing degree course in broad specialities, 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,
- Teaching skills.

### **Personal Attitudes:**

The essential items are :

- Caring attitudes
- Initiative
- Organizational ability
- Potential to cope with stressful situations and undertake 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. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers.

### **Acquisition of Knowledge:**

The methods used comprise of 'Log Book' which records participation in various teaching / learning activities by the students. The number of activities attended and the number in which presentations are made are to be recorded. The log book should periodically be validated by the supervisors. Some of the activities are listed. The list is not complete. Institutions may include additional activities, if so, desired.

Lectures: Lectures are to be kept to a minimum. They may, however, be employed for teaching certain topics. Lectures may be didactic or integrated.

a) Didactic Lectures: Recommended for selected common topics for post graduate students of all specialties. Few topics are suggested here.

- Bio-statistics
- Use of library,
- Journal review
- Use of computers,
- Appropriate use of AV aids



- Research Methods,
- Search of literature,
- Rational drug therapy
- Medical code of Conduct and Medical Ethics
- National Health and Disease Control Programmes
- Communication skills etc.

These topics may preferably taken up in the first few weeks of the 1<sup>st</sup> year commonly for all new postgraduates

b)Integrated teaching : These are recommended to be taken by multidisciplinary teams for selected topics, eg. Jaundice,Diabetes mellitus,thyroid diseases etc.

**Journal Review Meeting (Journal club):**

The ability to do literature search, in depth study, presentation skills, and use of audio – visual aids are to be 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

**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

**Work diary / Log Book:**

Every candidate shall maintain a work diary 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, if any, conducted by the candidate. The work diary 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,

In case of diploma courses of two years duration, the concerned departments may conduct two tests, one of them be at the end of first year and the other in the second year 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 or OSCE method.

**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.

Four copies of dissertation thus prepared shall be submitted to the Controller of Examinations six months before final examination on or before the dates notified by the University.

The dissertation shall be valued by examiners appointed by the university. Approval 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. 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 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 (six academic terms). The examination for the diploma courses shall be held at the end of two academic years (four academic terms).

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 1<sup>st</sup> 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 and 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 200.

**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 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)

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 1<sup>st</sup> 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 200.

#### **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 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).

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.

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.

### **Diploma Examination:**

Diploma examination in any subject shall consist of Theory (written papers), Practical / Clinical and Viva-Voce.

### **Theory:**

There shall be **three** written question papers each carrying 100 marks. Each paper will be of **three** hours duration. In clinical subjects one paper out of this shall be on basic medical sciences. 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, skills related to laboratory procedures as well as testing students ability to make relevant and valid observations, interpretation of laboratory or experimental work relevant 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.

The maximum marks for Practical/Clinical shall be 150.

Viva-Voce Examination: Viva Voce examination should aim at assessing depth of knowledge, logical reasoning, confidence and oral communication skills. The total marks shall be 50.

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 viva voce examination.

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

**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.

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 6 per day
- Diploma Courses: Maximum of 6 per day
- DM/M.Ch Courses: Maximum of 3 per day

## **SECTION II**

### **MD – RADIO-DIAGNOSIS**

#### **Preamble**

The purpose of this is to standardize Radio –diagnosis teaching at Post Graduate level though out the country so that it will benefit in achieving uniformity in undergraduate teaching as well and resultantly creating competent radiologist with appropriate expertise.

#### **Goal**

The goal is to train a student to become a skilled and competent radiologist to conduct and interpret various diagnostic / interventional imaging studies (both conventional and advanced imaging), to organize and conduct research and teaching activities and be well versed with medical ethics and legal aspects of imaging / intervention.

#### **Specific Learning Objectives**

A resident on completing his/her MD (Radio diagnosis) should be able to

1. Acquire good basic knowledge in the various sub-specialities of radiology such as Neuro-radiology, GI- radiology, Uro-radiology, vascular-radiology, musculoskeletal, Interventional radiology, Emergency radiology, Pediatric radiology and Mammography.
2. Independently conduct and interpret all routine and special radiologic and imaging investigations.
3. Provide radiological services in acute emergency & trauma including its medico legal aspects.
4. Elicit indications, diagnostic features and limitations of applications of ultrasonography, CT and MRI and should be able to describe proper cost-effective algorithm of various imaging techniques in a given problem setting.
5. Perform various image guided interventional procedures for diagnosis and therapeutic management.
6. Undertake further specialization in any of the mentioned branches in Radiodiagnosis such as gastrointestinal radiology, Uro-radiology, Neuro-radiology, vascular radiology, musculoskeletal radiology, Interventional Radiology etc.
7. Formulate basic research protocols and carry out research in the field of radiology related clinical problems.
8. Work as a Senior Resident/ consultant in Radio diagnosis and conduct the teaching program for undergraduate, postgraduates as well as para medical and technical personnel.
9. To interact with other specialists and super-specialists so that maximum benefit accrues to the patient.
10. Organize CME in the specialty utilizing modern methods of teaching and evaluation.
11. Impacting training in both conventional radiology & modern imaging techniques so that the candidate is fully competent to practice, teach and do research in the broad



discipline of radiology including ultrasound, computed tomography and magnetic resonance Imaging.

### **Postgraduate Training**

**The training is spread over 3 years and includes following components:**

1. Theory Lectures for Radiation Physics.
2. Rotational posting in various sub-specialities.
3. Seminars, case discussion, journal club.
4. Research methodology and thesis.

### **Course Contents**

#### **A. Physics, Apparatus, Photography and Film Faults**

1. Introduction of general properties of radiation and matter Fundamentals of nuclear physics and radioactivity.
2. Production of X-rays.
3. X-ray Generating Apparatus
4. Interaction of x-rays and gamma rays with matter and their effects on irradiated materials.
5. Measurement of X and gamma rays.
6. Interaction of X-ray with the patient
7. The Radiological Image
8. The Image Receptor
9. Contrast Enhancement
10. Radiation hazards and protection
11. Quality Assurance
12. Fundamentals of electromagnetic radiation
13. Characteristics properties of X-rays
14. X-ray requirements
  1. Conventional equipments
  2. Fluoroscopy – Conventional and Imaging Intensifier.
  3. Advanced equipments – US, CT, MRI, Doppler, Angiography, Cine Fluoroscopy and Cine Angiography.
15. Quantity Assurance & evaluation of performance of X-Ray equipments.
16. Contrast Media- types, chemical composition, mechanism of action, dose schedule, route of administration, adverse reaction and their management.
17. Nuclear Medicine: Equipments and isotopes in various organ systems and recent advances in the field of nuclear medicine.
18. Picture archiving and communication system (PACS) and Radiology information system (RIS) to make a film less department, Telemedicine, Digital Imaging.
19. Recent advances in Radiology and imaging.

## **B. Practical Schedule – Physics**

1. Film characteristics
2. Effectiveness of Lead Apron and other protective Devices
3. Beam parameters check
4. Optical Radiation field alignment
5. Assessment of Scatter radiation.
6. Quality control of x-rays and Imaging equipments.
7. Evaluation of performance of a film processing unit.

## **C. Practical radiography and Dark Room technique**

1. Dark room techniques
2. Radiography of the extremities
3. Radiography of the spine, abdomen, pelvic girdle and thorax
4. Radiography of the skull
5. Contrast techniques and interpretation of GI tract, biliary tract etc.
6. Contrast techniques and interpretation of the C.N. system
7. Contrast techniques and interpretation of the cardiovascular system including chest.
8. Miniature radiography, Macro-radiography and magnification techniques
9. Dental and portable radiography.

## **D. ANATOMY**

Gross and cross sectional Anatomy of all the body systems.

## **E. PATHOLOGY**

Gross morphology of pathological condition of systematic diseases.

## **F. RADIOLOGY- COURSE CONTENTS**

1. Bones and joints
2. Respiratory system
3. Cardiovascular system
4. Gastro intestinal tract
5. Urogenital tract
6. C.N.S. Including spine
7. Radiology of obstetrics and Gynaecology
8. ENT, EYES, Teeth, Soft tissue breast
9. Endocrine glands
10. Clinically applied radionuclide imaging
11. Contrast agents

Contrast Media, their types, formulations, mechanisms of action, dose schedule, routes of administration, adverse reactions and their management.

### **Respiratory system**

- The normal chest: methods of investigation and differential diagnosis
- The mediastinum
- The pleura
- Tumours of the lung
- Pulmonary infections
- Diseases of the airways: collapse and consolidation
- Diffuse lung disease
- Miscellaneous chest conditions
- The paediatric chest

### **Alimentary and Hepatobiliary system : Congenital Anomalies of GI Tract**

- The salivary glands, pharynx and oesophagus
- The stomach and the duodenum
- The small bowel and peritoneal cavity
- The large bowel
- The acute abdomen
- The abdomen and major trauma
- The biliary tract
- The liver and spleen
- The pancreas
- The adrenal glands
- The paediatric abdomen.
- Disease and disorders of mouth , Pharynx, Esophagus, stomach small intestine, large intestine , disease of omentum and mesentery, acute abdomen, abdominal trauma.
- Newer methods like isotopes study, MDCT and MRI.
- Hepatobiliary system disease and disorders, newer methods of imaging hepatobiliary pancreatic system like Isotopes study, MDCT, MRI.

### **Head and Neck : Spinal column and skull**

- The pharynx and larynx: the neck
- The sinuses
- Teeth and jaws
- Ultrasound of the eye and orbit
- The orbit
- The petrous temporal bone
- The skull

- Neuroradiology of the spine includes radiological dimension and imaging of various diseases and disorders of the above system.
- Investigative procedures of congenital lesions, vascular lesions, infective lesions, Metabolic lesions, traumatic lesions and neoplasia of the central nervous system including CT, MRI.
- Disease and disorders of spinal cord lesions including congenital lesions. Interventional procedures.

### **Cardiovascular system**

- The normal heart: anatomy and techniques of examination
- Acquired heart disease I: the chest radiograph
- Acquired heart disease II: non-invasive imaging
- Invasive imaging and interventional techniques
- Congenital heart disease
- Arteriography and interventional angiography
- Phlebography
- The lymphatic system

### **Endocrine system**

- Imaging of disorders, disease and congenital conditions of endocrinal glands-
- Pituitary,
- Adrenal,
- Thyroid ,
- Para thyroid,
- Pancreas.
- Newer methods of imaging including embolisation.

### **Genito Urinary system**

- The urogenital tract: anatomy and investigations
- The kidneys and ureters
- The bladder and prostate
- The urethra and male genital tract
- Gynecological imaging
- Imaging- conventional (IVU, MCU, ASU) , Ultrasound , CT, MRI of various disease and disorders including congenital conditions of genitor Urinary system.
- Role of interventional imaging

### **Musculo Skeletal system**

- Congenital skeletal anomalies: skeletal dysplasias, chromosomal disorders

- Periosteal reaction; bone and joint infections; sarcoid
- Avascular necrosis; osteochondritis;
- Miscellaneous bone lesions
- Disease of joints 1 201
- Tumors and tumor-like conditions of bone
- Disorders of the lymphoreticular system
- and other hemopoietic disorders
- Metabolic and endocrine disorders affecting bone
- Skeletal trauma: general considerations
- Skeletal trauma: regional
- The soft tissues
- The breast
- Role of conventional, Ultrasound, Radio Nuclide studies, CT, MRI of disease and disorders and congenital conditions of muscles, soft tissue, bones and joints.

### **Soft tissue Radiology**

Includes various soft tissue disorders and diseases and role of imaging.

### **Interventional Radiology**

Includes all procedures like interventional imaging and interventional treatment.

### **Teaching and Learning Activities**

A candidate pursuing the course should work in the institution as a full time student. No candidate should be permitted to run a clinic/ laboratory/ nursing home while studying post graduate course. Each year should be taken as a unit for the purpose of calculating attendance.

Every student shall attend teaching and learning activities during each year as prescribed by the department and not absent himself/ herself from work without valid reasons.

A list of teaching and learning activities designed to facilitate students acquire essential knowledge and skills outlines is given below..

**1. Journal Club :**Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details. Further , every candidate must make a presentation from the allotted journal(s) of selected articles at least four times a year and a total of 12 presentations in three years. The presentations would be evaluated using checklists and would carry weightage internal assessment (see Checklist in Section IV) . A timetable with names of the students and the moderator should be announced at the beginning of every year.

**2. Subject seminar** : Recommended to be held once a week. All the PG students are expected to attend and actively participate in discussion and enter in the logbook relevant details. Further, every candidate must present on selected topics at least four times a year and a total of 12 seminar presentations in three years. The presentations would be evaluated using checklists and would carry weightage for internal assessment (see Checklist in Section IV). A timetable for the subject with names of the student and the moderator should be scheduled at the beginning of every year.

### **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.

1. **Student Symposium** : Recommended as an optional multi disciplinary programme. The evaluation may be similar to that described for the subject seminar.
2. **Mortality & Morbidity Meetings** : Recommended once a month for all postgraduate students. Presentation be done by rotation and by the students who had conducted/ assisted anaesthetic management.
3. **Inter Departmental Meetings** : Strongly recommended particularly with departments of Surgery, Orthopedics, Paediatrics, OBG and Medicine at least once a month. These meeting should be attended by post graduates students and relevant entries must be made in Logbook.
4. **Teaching skills** : Postgraduates students must teach Undergraduate students (e.g Medical Nursing) by taking demonstrations, bed side clinics, tutorials, lectures etc. Assessment is made using a checklist by faculty. Record of their participation should be kept in Logbook. Training of postgraduate students in Educational Technology is recommended.
5. **Continuity Medical Education Programmes (CME)** : At least 2 state and national level CME programmes should be attended by each student in 3 years.
6. **Conferences** : Attending conferences is optional. However, participation & presentation of scientific paper should be encouraged.

**Lectures** : Lectures are to be kept to a minimum. They may, however, be employed for teaching certain topics. Lectures may be didactic or integrated.

- A) Didactic Lectures : Recommended for selected common topics for post graduate students of all specialties. Few topics are suggested as examples :
1. Bio-statistics.
  2. Use of library

3. Research Methods
4. Medical code of conduct and Medical Ethics
5. National health and disease control programs
6. Communication skills etc.
7. Initial introductory lectures about the subject.

These topics may preferably be taken up in the first few weeks of the 1<sup>st</sup> year.

B) Integrated Lectures :These are recommended to be taken by multidisciplinary teams for selected topics e.g. Jaundice, Diabetes Mellitus, Thyroid etc.

**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

**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.

### Rotation Postings

Three months duration

1. NIMHANS for exposure and interpretation of Brain and spinal cord lesions - 1 month
  2. For cancer radio-diagnosis in oncology 1 month
  3. Nuclear Medicine - 1 month
- 3 months

**During the three-year course, the student will work in the following areas:-**

1.	Conventional Chest	3 Months
2.	Conventional Musculoskeletal including skull, Spine, PNS	3 Months
3.	G.U.	2 Months
4.	G.I.T.	3 Months
5.	US including Doppler+	6 Months
6.	CT (Body + Head – 3 months each)	6 Months
7.	Emergency Radiology	3 Months
8.	M.R.I.	3 Months
9.	Interventional Radiology including angiography	4 Months
10.	Nuclear Medicine	1 Month
11.	Elective posting	2 Months
	<b>Total</b>	<b>36 Months</b>

### Training Method

The postgraduate training for degree/diploma 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. Similarly, clinical subjects' students should be posted to basic medical sciences and allied specialty departments or institutions.

### Attendance, Progress and Conduct

A candidate pursuing degree/diploma 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. 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. 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**

#### **Work diary / Log Book:**

Every candidate shall maintain a work diary 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, if any, conducted by the candidate. The work diary 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. Records and marks obtained in such tests will be maintained by the Head of Department and sent to the University, when called for,

#### **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.

#### **Dissertation:**

##### **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 a hypothesis, search and review of literature, getting acquainted with recent advances, designing of a research study, collection of data, critical analysis, comparison of results and drawing conclusions. The submission of synopsis, review and registration shall be in accordance of University regulations

and time to time notifications of the University and institute. The contents and methodology are described in section I of this booklet.

Four copies of dissertation thus prepared shall be submitted to the Controller of Examinations six months before final examination on or before the dates notified by the University.

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

## **Postgraduate Examinations**

### **a) Theory:**

#### **Scheme of Examination**

#### **i) Theory**

There shall be four question papers, each of three hours duration. Each paper shall consist of two long essay questions each 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	:	Basic sciences related to Radiology (it consist of Anatomy, Physiology Basic and Radiation Physics, Imaging Techniques and Dark Room processing).
Paper- II	:	CVS. Resp. GIT (including Hepato biliary), Endocrine, Chest, Mammography.
Paper- III	:	Genitourinary, Retroperitoneum, CNS including head and neck, Musculoskeletal System, Obst. & Gynae, ENT and Eye and interventional Radiology
Paper – IV	:	Recent advances and nuclear medicine Radiology related to clinical specialities.

### **b) Practical**

- A. One Long and Two Short Cases -
- B. Practical and Viva -
  - i. Spot Film Diagnosis (40-50) -

ii.	Radiation Physics	-
iii.	Techniques	-
iv.	Implements / Contrast Media	-
v.	Nuclear Medicine	-
vi.	Pathology	-

**ii. Clinical** **200 marks**

- a) Long Case – One – 100 Marks
- b) Short Cases – two – 100 Marks (50 X 2)

**iii. Viva – Voce** **100 marks**

1. Viva – Voce Examination (80 marks)

All examiners will conduct viva – voce conjointly on candidates comprehension, analytical approach, expression and interpretation of data. It includes all components of course contents spotters of conventional & newer imaging techniques and instruments. In addition, candidates may be also be given case reports, charts, gross specimens, etc., for interpretation. It includes presentation & discussion on dissertation also.

2. Pedagogy Exercise (20 marks)

A topic be given to each candidate in the beginning of clinical examination, he/she is asked to make a presentation on the topic for 8-10 minutes.

**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 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 viva voce examination. The candidate should pass independently in practical/clinical examination vide MCI pg 2000 reg no 144-c(iii)

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.

iv)

Maximum marks for	Theory	Practical	Viva	Grand Total
MD Radio-Diagnosis	400	200	100	700

### RECOMMENDED TEXT BOOKS :

- |   |                    |
|---|--------------------|
| 1. Text Book of Radiology and Imaging   | - By Sutton        |
| 2. Text Book of Diagnostic Radiology    | - Grainger         |
| 3. Text books of x-ray Diagnosis        | - Shanks & Kerley  |
| 4. Positioning in Radiography           | - Clark            |
| 5. Fundamental Physics of Radiology     | - Meredith         |
| 6. Radiographic Anatomy                 | - Meschan          |
| 7. Diagnostic Ultrasound                | - Carol M Rumack   |
| 8. Basic Nuclear Medicine               | - Sheldon Baur     |
| 9. Alimentary Tract and Imaging         | - Margullis        |
| 10. Aids to differential diagnostic     | - Chapman          |
| 11. Radiology review manual 7th edition | - Wolfgang Danhert |
| 12. Radiological procedures             | - Stephen Chapman  |
| 13. Vascular ultrasonography            | - Zwiebel          |
| 14. Diagnostic Neuroradiology           | - Osborn           |
| 15. Diagnostic Radiology & Imaging      | - K. SubbaRao      |
| 16. Diagnostic Ultrasound               | - Sarti            |

### REFERENCE BOOKS

- |   |            |
|---|------------|
| 1. Diagnostic Radiology C T & MRI of whole body | - Haaga    |
| 2. Pediatric x-ray diagnostic                   | - Caffey's |
| 3. Roentgen's Science in Diagnostic imaging     | - Meschan  |

- |   |                   |
|---|-------------------|
| 4. Felsons chest Radiology                                    | - Felson          |
| 5. Text book of Neuro imaging                                 | - Osborn          |
| 6. Uro-Radiology  | - Elkin           |
| 7. Echo   | - Phegonbom       |
| 8. Text book of Uroradiology                                  | - Dunnick N Reed  |
| 9. High- Resolution CT of the lung                            | - Webb            |
| 10. Diagnostic Imaging Pediatric Neuroradiology               | - Barkovich       |
| 11. MRI of the brain & spine                                  | - Scott W Atlas   |
| 12. Mammography Case Book                                     | - Fischer         |
| 13. Differential Diagnosis in MRI                             | - Burgener        |
| 14. MRI of bone and soft tissue tumors and tumor like lesions | - Steven P Meyers |
| 15. USG in obstetrics & gynecology                            | - Callen          |
| 16. Essentials of skeletal radiology                          | - Yochum          |
| 17. Computed body tomography with MRI correlation             | - Lee             |
| 18. Caffey's peadiatric diagnostic imaging                    | - Kuhn            |
| 19. Diagnostic imaging ultrasound                             | - Ahuja           |
| 20. Text book of gastro intestinal radiology                  | - Gore R M        |

## **JOURNALS**

1. Indian Journal of Radiology and Imaging
2. Clinical Radiology
3. British Journal of Radiology
4. Americal Journal of Roentegenology
5. Radiology clinics in North America
6. Recent Advances in Radiology and Imaging
7. Lancet
8. Journal of Diagnostic Medical Sonography
9. Clinical Nuclear Medicine
10. Journal of Vascular and Interventional Radiology
11. Journal of Computed assisted Tomography

## **SECTION III**

### **Additional reading**

1. Compendium of Recommendations of Various committees on Health and Development (1943-1975) DGHS, 1985 Central Bureau of Health Intelligence, Directorate General of Health Services, Min. Of Health and Family Welfare, Govt. of India, Nariman Bhawan New-Delhi, P-335
2. National Health Policy: Min. of Health & Family Welfare, Nirman Bhawan, New Delhi, 1983
3. Santosh Kumar: The elements of Research, writing and editing 1994, Dept. of Urology, JIPMER, Pondicherry.
4. Srinivasa D K et al : Medical Education Principles and Practice, 1995. National Teacher Training Centre, JIPMER, Pondicherry.
5. Ethical guidelines for biomedical research on human participants I.C.M.R. New Delhi 2006.
6. Code of Medical Ethics framed under Section 33 of the Indian Medical Council Act, 1956. Medical Council of India, Kotla Road, New Delhi.
7. Francis C.M: Medical Ethics, Jaypee Publications, Bangalore, 2<sup>nd</sup> Edn-2004.
8. Indian National Science Academy, Guidelines for care and use of animals in Scientific Research, New Delhi, 1994.
9. Internal National Committee of Medical Journal Editors, Uniform requirements for manuscripts submitted to biomedical journals, N England Journal of Medicine. 1991, 424-8
10. Kirkwood B.R. Essentials of Medical Statistics, 1<sup>st</sup> Ed. Oxford, Blackwell Scientific Publications 1988.
11. Mahajan B.K.: Methods in Bio-statistics for Medical students, 5<sup>th</sup> Edition new Delhi, Jaypee Brothers Medical Publishers, 1989.
12. K.R.Sundaram, S.N.Dwivedi, V.Srinivas. Medical Statistics. Principles & Methods .B.I.Publications, New Delhi, 2010
13. R.K.Chaube: Consumer Protection Act and Medical Profession, 1st Edition, 1999, Jaypee Brothers.

## SECTION IV

### Format of Model Check Lists

#### Check List-I.

### MODEL CHECK-LIST FOR EVALUATION OF SEMINAR BASIC PRESENTATIONS

Name of the Student: \_\_\_\_\_

Name of the Faculty/Observer: \_\_\_\_\_ Date: \_\_\_\_\_

#### SEMINAR BASIC

#### TOPIC :

EVALUATION BY STAFF								
CLARITY OF PRESENTATION								
CONTENTS OF PRESENTATION								
UNDERSTANDING OF SUBJECT								
COMPLETENESS OF PRESENTATION								
EXTENT OF CROSS REFERENCES								
OTHER RELEVANT PUBLICATIONS								
ANSWERING QUESTIONING ON SUBJECT								
TIME SCHEDULING								
AUDIO-VISUAL AIDS								
OVER ALL PERFORMANCE								
TOTAL								

**Check List-II.**

**MODEL CHECK-LIST FOR EVALUATION OF SEMINAR PRESENTATIONS**

Name of the Student: \_\_\_\_\_

Name of the Faculty/Observer: \_\_\_\_\_ Date: \_\_\_\_\_

**SEMINAR ADVANCED**

EVALUATION BY STAFF								
CLARITY OF PRESENTATION								
CONTENTS OF PRESENTATION								
UNDERSTANDING OF SUBJECT								
COMPLETENESS OF PRESENTATION								
EXTENT OF CROSS REFERENCES								
OTHER RELEVANT PUBLICATIONS								
ANSWERING QUESTIONING ON SUBJECT								
TIME SCHEDULING								
AUDIO-VISUAL AIDS								
OVER ALL PERFORMANCE								
TOTAL								



**Check List-III.**

**MODEL CHECK-LIST FOR EVALUATION OF JOURNAL PRESENTATIONS**

Name of the Student: \_\_\_\_\_

Name of the Faculty/Observer: \_\_\_\_\_ Date: \_\_\_\_\_

**JOURNAL CLUB**

EVALUATION BY STAFF								
CLARITY OF PRESENTATION								
CONTENTS OF PRESENTATION								
UNDERSTANDING OF JOURNAL								
EXTENT OF CROSS REFERENCES								
ANSWERING QUESTIONING ON SUBJECT								
TIME SCHEDULING								
AUDIO-VISUAL AIDS								
OVER ALL PERFORMANCE								
TOTAL								

**Check List-IV**

**MODEL CHECK-LIST FOR EVALUATION OF CASE PRESENTATIONS**

Name of the Student: \_\_\_\_\_

Name of the Faculty/Observer: \_\_\_\_\_ Date: \_\_\_\_\_

**CASE PRESENTATION**

EVALUATION BY STAFF								
BRIEF CLINICAL HISTORY								
IDENTIFYING THE LESIONS								
DEFINITIVE DIAGNOSIS								
DIFFERENTIAL DIAGNOSIS								
DEFENDING THE DIAGNOSIS								
ANSWERING THE QUESTIONS								
RECENT INVESTIGATIONS FOR THE DISEASE								
TIME SCHEDULING								
AUDIO-VISUAL AIDS								
OVER ALL PERFORMANCE								
TOTAL								

### Check List-IV

#### MODEL CHECK-LIST FOR EVALUATION OF TEACHING SKILL PRACTICE

Name of the Student: \_\_\_\_\_

Name of the Faculty/Observer: \_\_\_\_\_ Date: \_\_\_\_\_

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 sequence 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 A.V. aids appropriately		

Check List-VI

**MODEL CHECK LIST FOR DISSERTATION PRESENTATION**

Name of the Student: \_\_\_\_\_

Name of the Faculty: \_\_\_\_\_ Date: \_\_\_\_\_

Sl. No.	Points to be considered	Poor 0	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					
	<b>Total Score</b>					

Check List-VII

**CONTINUOUS EVALUATION OF DISSERTATION WORK BY GUIDE/CO-GUIDE**

Name of the Student: \_\_\_\_\_

Name of the Faculty: \_\_\_\_\_ Date: \_\_\_\_\_

Sl. No.	Items for observation during presentations	Poor	Below Average	Average	Good	Very Good
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					
	<b>Total Score</b>					

Check List-VIII

**Model Checklists for Assessment of Scientific Papers for Publication**

<b>Sl. No.</b>	<b>Criteria</b>	<b>Distribution of Marks</b>	<b>Marks awarded</b>
1.	Originality	10	
2.	Clarity & Quality of presentation	10	
3.	Relevance	10	
4.	Review of Literature	10	
5.	Quantum of works involved	15	
6.	Methodology, Sensitivity, Sample size, controlled, not Controlled study etc.,	25	
7.	Advancement of knowledge	10	
	Total	90	

Signature of the Evaluator      -----

Name      -----

Designation      -----

## LOG BOOK

Table 1: Academic activities attended

Name: \_\_\_\_\_ Admission Year: \_\_\_\_\_

College: BLDE UNIVERSTY'S SHRI: B.M.PATIL MEDICAL COLLEGE, BIJAPUR-586103

<b>Date</b>	<b>Type of Activity</b> <b>Specify Seminar, Journal Club,</b> <b>Presentation, UG teaching</b>	<b>Particulars</b>

**LOG BOOK**

Table: 2:**Academic presentations made by the student**

Name: \_\_\_\_\_ Admission Year: \_\_\_\_\_

College: BLDE UNIVERSITY'S SHRI: B.M.PATIL MEDICAL COLLEGE, BIJAPUR-586103

<b>Date</b>	<b>Topic</b>	<b>Type of Presentation Specify Seminar, Journal Club, Presentation, UG teaching etc.</b>



## LOG BOOK

Table 3: Procedures performed

Name \_\_\_\_\_ Admission Year: \_\_\_\_\_

College: BLDE UNIVERSITY'S SHRI: B.M.PATIL MEDICAL COLLEGE, BIJAPUR-586103

<b>Date</b>	<b>Name</b>	<b>ID No.</b>	<b>Procedure</b>	<b>Category O, A, PA, PI*</b>

**\* Key**

0	-	Observed
A	-	Assisted a senior consultant
PA	-	Performed procedure under the direct supervision of a senior consultant.
PI	-	performed independently.

## LOG BOOK

**Table – 4: Daily activities record**

Name :  
College;

Admission year .:

<b>Date</b>	<b>Activities</b>	<b>Sign</b>

**Model Overall Assessment Sheet**

Name of the College: BLDE UNIVERSITY'S SHRI: B.M.PATIL MEDICAL COLLEGE,  
BIJAPUR-586103

Academic Year: \_\_\_\_\_

Sl Member No.	Faculty No. & Others	Name of Student and Mean Score									
		A	B	C	D	E	F	G	H	I	J
1											
2											
3											
4											
5											
<b>Total Score</b>											

**Note: Use separate sheet for each year.**

## **SECTION - IV**

### **MEDICAL ETHICS**

#### **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**, 2<sup>nd</sup> Ed, 2004 Jaypee Brothers, Bangalore/-
2. Ethical guidelines for biomedical research on human participants, ICMR publication 2006
3. Santosh Kumar: the elements of research, writing and editing 1994, Dept of Urology, JIPMER, Pondicherry
4. Srinivas D.K etal, 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, 1<sup>st</sup> Ed., Oxford: Blackwell Scientific Publications 1998
8. Mahajan B.K. Methods in bio statistics for medical students, 5<sup>th</sup> Ed, New Delhi, Jaypee, Brothers Medical Publishers, 1989
9. Raveendran, B. Gitanjali: A Practical approach to PG dissertation, New Delhi, Jaypee Publications, 1998.

  
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