



BLDE UNIVERSITY

PG CURRICULUM 2012-13 MD Physiology

Published by

BLDE UNIVERSITY

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The Constituent College

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

Smt. Bangaramma Sajjan Campus, Sholapur Road, Bijapur - 586103, Karnataka, India.

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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

Smt. Bangaramma Sajjan Campus, Sholapur Road, Bijapur – 586103, Karnataka, India.

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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 analyze 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 up to 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 pursuing 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 out comes 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 1st 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 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 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 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 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.

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. PHYSIOLOGY

Goals:

The Postgraduate course in M.D. Physiology should enable a medical graduate to be:

- i. A competent Physiologist.
- ii. A good medical teacher in Physiology, Practicing the required skills of teaching.

Learning Objectives:

At the end of training course, a Post graduate student should have thorough knowledge of body with respect to .

1. Cognitive domain :

All systems of body should be studied with respect to.

- a. Historical aspect .
- b. Evolution and development.
- c. Comparative Physiology.
- d. Structure :Gross and Electron microscopic and function at cellular level.
- e. Quantitative and Qualitative aspects.
- f. Regulatory mechanisms.
- g. Variations in Physiological and pathological conditions.
- h. Applied physiology.
- i. Recent advances.

2. Psychomotor domain :

PG students should be able.

- a. To perform human and Animal (Mammalian and Amphibian) experiments and also Hematology experiments based on biophysical principles.
- b. To acquire history taking and clinical examination skills.

3. Affective domain :

- a. A Post graduate student should develop communication skills to interact with students, Colleagues, Superiors and others staff members.
- b. He / She should be able to work as a member of a team to carry out teaching as well as research activities.
- c. He /She should have right attitude (Medical ethics) towards teaching profession.

Outline of course contents

Theory

- 1) General Physiology Including Biophysics: Homeostasis, Concepts of Physiological norms range and variations, Transport across Cell membrane, relationship between stimulus and response. Structure of cell membrane, RMP, Cellular receptors, Intercellular communications. Body Fluids Compartments and changes in Body Fluid Compartments and Measurements, Hypoproteinemia.
Biological membranes with details of membrane receptors, Physiology of growth and aging and Principles and applications of genetics.
- 2) Environmental Physiology: Physiology of deep sea diving, Space physiology, High altitude Physiology, Hyperbaric oxygen therapy, Structure and functions of skin, temperature regulation, Hypothermia and Hyperthermia, Air and Noise Pollution and Radiation Physiology.
Nerve Muscle Physiology: Classification of Nerves and Muscle, Structure of skeletal muscle. Types of muscle fibers. Mechanism of contraction and Its molecular basis. Thermal and chemical changes during muscle contraction. Oxygen debt. Neuromuscular Transmission. Neuromuscular blocking drugs. Pathophysiology of muscle disorders. Pathophysiology of Myasthenia Gravis.
Experimental techniques to study bioelectrical phenomena (Voltage clamp technique, cathode ray oscilloscope, S.D. curve, nerve conduction studies), EMG,
- 3) Blood : Blood composition ; cellular elements of blood their formation and regulation. Hemoglobin : Synthesis and functions Jaundice, Anemia & their Classification, Hemostatic mechanisms, Anticoagulants, Blood groups, Rh- incompatibility Blood transfusion, ESR, Basic Mechanisms of Immunity & Function of WBCs, Lymph : Composition Circulation and functions. Plasmin system and Tissue typing.
- 4) Cardio Vascular System: Functional anatomy of heart, properties of cardiac muscle Principles of Electro cardiography, Electrical and Mechanical changes in cardiac cycle, Conducting system of Heart Normal ECG, Cardiac output : Measurement in Man, Physiological Variations.
Regulatory mechanisms of Heart rate and Blood pressure. Regional Circulations Normal values, Physical Principles governing flow of blood in Heart and blood vessels, Measurement and regulation of coronary blood flow, changes in CVS during muscular exercise, Postural changes, Hypovolemia, Hypoxia, and cardio pulmonary resuscitation. Microcirculation. Hemodynamics, Pathophysiology of Hypertension, Shock, Cardiac Failure and Coronary Artery Disease.
Echocardiography and vector cardiography, ECG, Stress test, CT scan, Cardiac catheterization , Flow meters and Ultrasonography .
- 5) Respiratory System : Functional anatomy of Respiratory systems, Mechanics of Normal respiration, Physical Principles of governing flow of air in respiratory passages, Lung

Compliance, Alveolar ventilation, ventilation perfusion Ratio, Oxygen and (O₂) transport, Diffusing capacity, pulmonary function Tests.

Regulation of respiration, Respiratory acidosis and alkalosis, Pulmonary blood flow, Hypoxia, Cyanosis, Asphyxia, Respiratory adjustments during muscle exercise, Hyperbaric conditions, Principles of Oxygen therapy, Artificial respiration, Cardiopulmonary resuscitation Hyaline Membrane disease, Pathophysiology of Restrictive and obstructive lung diseases, Pulmonary edema and Dyspnoea. Lung function tests, Blood gas analysis.

- 6) Endocrine System: General Principles of Regulation of Endocrine glands. Hormones functions, cellular mechanism of hormone action, regulation of secretion. Experimental and clinical disorders of Anterior and Posterior Pituitary, Thyroid, Parathyroid, Adrenal Cortex and Medulla and Endocrine Pancreas. Stress and Hormones. Minor Endocrine glands : Pineal Body, Heart and Kidney. Radio immuno assay.
- 7) Reproductive system: Sex determination and differentiation Male Reproduction Functions of Testes, Constituents of Semen, Testicular hormones, Spermatogenesis and regulation. Female Reproduction : Menstrual Cycle : Changes in ovary, uterus, Cervix, vagina and hormonal regulation. Ovulation and Its detection. Fertilization, Implantation, Physiological changes during pregnancy Fetoplacental Unit, Nutritional needs of mother during pregnancy, Parturition, Lactation, composition of breast milk, Placental and Fetal Circulation Menopause, Physiology of Newborn, Family planning & welfare, Physiological basis of Contraception, safe period rhythm and other methods of contraception. In vitro fertilization,
- 8) Alimentary System: Functional Morphology Smooth Muscle : Structure Mechanism of Contraction. Nerve supply and Nerve transmitters. Composition Function and regulation of secretion of Salivary glands, Stomach, Small Intestine and large Intestine. Regulation of gastrointestinal Movements, Functions of Gall bladder, liver. Site of production and action of GI Hormones. Mechanism of Absorption of food. Physiological basis of Peptic ulcer, Diarrhoea and Constipation. Motility disorders : Achalasia, Hirschsprung disease. Gastro intestinal hormones and Absorption of nutrients, Relationship of diet and diseases, Starvation and obesity.
- 9) Renal Physiology: Functions of different parts of Nephron urine formation. Role of Kidney in water and Electrolyte balance. Acidification of urine. Diuresis, Kidney function tests. Juxtaglomerular apparatus. Renin - Angiotensin system, Renal blood flow. Structure and its and measurement regulation. Innervation of bladder, Micturition, Cystometrogram, Disorders of Micturition and Principles of Artificial kidney and Dialysis.
- 10) Central Nervous System: Organisation of Central Nervous system Functions and Neuronal organisation at spinal cord level, synaptic transmission, motor and sensory systems and their lesions, Reticular system in brain stem, sleep, wakefulness, EEG

waves and Physiological changes in EEG, clinical lesions and Experimental sections at spinal cord, brain stem and sub cortical levels, Physiology of Basal Ganglia, Cerebellum, Thalamus, Hypothalamus limbic system, Pre frontal lobe and cerebral cortex, speech and its disorders, Autonomic Nervous system, Formation, circulation and functions of CSF, Blood Brain Barrier, Central Neuro transmitters. Cerebral blood flow and its measurements. Neuroglia, Methods to study the functions with diagnostic techniques and Physiological basis of features of diseases of Cerebellum, Basal Ganglia, Thalamus, Cerebral Cortex, Reticular formation, Hypothalamus, ANS and Limbic system, CT Scan and MRI Techniques.

- 11) Special Senses : Eye : Functional anatomy of Eye, image formation on Retina, Structure of photoreceptors, Electrical activity of photoreceptors, Errors of Refraction, Functions of Aqueous humour, Intraocular tension. Mechanisms of Accommodation Dark adaptation, pupillary reflexes functions of Retina optic pathway and lesions. Role of visual cortex in perception. Field of vision. Colour vision, Acuity of vision, Photochemistry of vision, Electrophysiology of Retina and Nutritional deficiency blindness,
Auditory Apparatus : Functional anatomy of Ear, Physics of sound , Role of Tympanic Membrane, Middle ear and cochlea in hearing , Auditory Receptors and Pathway, Electrophysiology of cochlea, Deafness and its causes, Principles of Audiometry, Tuning fork tests & Interpretation. Vestibular apparatus : Structure and Functions, Connections and lesions of vestibular apparatus. Taste and Smell : Modalities, Receptors, pathway, Cortical and limbic areas associated with taste and smell.
- 12) Exercise Physiology: Concept of physical fitness, Its components and evaluation, Adaptations.
- 13) Stress Relaxation Technique: Principles of Yoga, Breathing exercise, Meditation and Bio feedback techniques.
- 14) Comparative Physiology of all systems
- 15) Medical Education
- 16) Biostatistics
- 17) Laboratory animal ethics – Guidelines for care and use of animals in scientific research. Breeding of and Experiments on animals (control and Supervision) rules, 1998 under prevention of cruelty to animals Act 1960.
- 18) Biomedical waste management.
- 19) Recent Advances.

Practical Training

A. Animal Experiments (For demonstration only and not for University Examinations)

Amphibian experiments

1. Freeload and After Load
2. Effect of continuous repeated stimulation (study of phenomena of fatigue)
3. Length tension diagram.
4. Properties of Cardiac Muscle: Long refractory period, All or None Law.
5. Extrasystole and Compensatory Pause, Beneficial effect
6. Regulation of Heart, Vagus dissection and effect of vagal stimulation.
7. Actions of acetylcholine, Adrenaline and Nicotine on Heart (Langley's)
8. Perfusion of isolated frogs heart – Role of Na⁺, K⁺, Ca⁺
9. Decerebrate and Spinal frog.

i. Mammalian

1. Rat/guinea pig ileum : Intestinal movement recording
2. Rabbit heart: Langend preparation
3. General Management of Mammalian experiments.
4. Recording blood pressure and respiration on dog and also the effects of various factors.
5. Recording the effect of stimulation of Vagus nerve on blood pressure and respiration on dog
6. Stimulation of central and distal end of the vagus on arterial pressure after vagotomy
7. Effect of drug – Adrenaline and Acetylcholine on blood pressure and respiration on dog.
8. Adrenal extract on intestinal movement and tone.
9. Effect of Occlusion of the Carotid arteries on blood pressure and respiration.
10. Stimulation of Splanchnic nerve (distal end) on arterial pressure.

B. Human Physiology

1. Clinical Physiology

- i. Elementary principles of clinical examination
- ii. Methods of Inspection/palpation/percussion/auscultation
- iii. Plan of conduction and scheme of recording
- iv. General examination

2. Cardiovascular system

- i. Clinical examination of circulatory system
- ii. Examination of the pulse, blood vessels and measurements of blood pressure.

3. Respiratory system

- i. Clinical examination of respiratory system

4. Gastro-intestinal system

- i. Clinical examination of abdomen.

5. Central Nervous System

- i. Clinical examination of the central nervous system and autonomic nervous system and its physiological basis.

- ii. Examination of higher mental functions.
 - iii. Clinical examination of the special senses. Outline of the examination of cranial nerves.
 - iv. Tests of hearing and deafness
 - v. Motor functions
 - vi. Reflex functions
 - vii. Sensory function
- 6. Ophthalmology**
- i. Clinical examination of the eye and papillary reflex
 - ii. Visual acuity
 - iii. Perimetry
 - iv. Accommodation
 - v. Colour vision and colour blindness
 - vi. Fundoscopy
- C. Laboratory Procedures (Normal human subjects)**
- 1. Haematology:**
- i. Haemocytometry
 - ii. Determination of Reticulocyte count, Platelet count, WBC count, RBC count and absolute eosinophil count in normal and diseased states.
 - iii. Differential count of WBC
 - iv. Haemoglobinometry, spectroscopy
 - v. Blood grouping and cross matching
 - vi. Determination of bleeding time, clotting time
 - vii. Haemolysis & Fragility test
 - viii. Examination of normal bone marrow aspiration smear
- 2. Cardio vascular system:**
- i. Electrocardiography – ECG & its interpretation.
- 3. Respiratory System:**
- i. Mechanical spirometry
 - ii. Recording of lung function tests by computerized or electronic spirometer
 - iii. Breath holding and endurance tests
 - iv. Blood gas analysis
 - v. Stethography
 - vi. Resuscitation and artificial respiration.
- 4. Reproductive System:**
- i. Methods to determine ovulation time –
 - a. Basal Body temperature chart,
 - b. Cervical smear
 - c. Vaginal smear
 - ii. Pregnancy diagnostic test – Immunological test
 - iii. Sperm count
- 5. Gastro Intestinal System:**
- i. Endoscopy
- 5. Nerve Muscle Physiology**
- i. Ergography
 - ii. Recording of EMG – Nerve conduction, both sensory and motor

7. Others:

- i. Construction of Dietary chart for –
 1. Growing Children
 2. Hypertensive patients
 3. CAD
 4. Diabetes mellitus patients

- ii. Tests for physical fitness –
 - 1) Field 2 km. walk
 - 2) Lab Harvard step test
 - 3) Bicycle ergometry
 - 4) Treadmill protocols leading to determination of VO_2 max.
 - 5) Cardio respiratory response to whole body exercise.

D. Clinical Biochemistry:

- i. Examination of normal and abnormal constituents of urine
- ii. Other kidney function tests
- iii. Estimation of blood sugar
- iv. Liver function tests
- v. Glucose tolerance test

Time Schedule and Rotation postings

During the second year of the course, postings may be made to attend other clinical and para clinical subjects in co-ordination with concerned departments, only in the forenoon sessions as follows:

1. Clinical Biochemistry – 10 days.
To understand the principles of clinical biochemical tests and interpretation of data.
 - Liver function tests.
 - Renal function tests.
2. Department of Anatomy – 10 days
(Histology Laboratory) Staining techniques, moulding of specimens, slide identification characteristics.
3. Biostatistics and Research Methodology – 03days
To attend workshop on research methodology .
4. Aerospace Medicine and Applied Physiology – 7days.
 - Applied Cardio-Respiratory Physiology
 - Thermal Physiology
 - Space Physiology
 - High altitude physiology and Hyperbaric medicine
 - Acceleration Physiology

- Hands-on training in spirometry, orthostatic stress test and evaluation of heat stress and heat strain.
5. Radiology – 10days .
- Interpretation of: X-Ray and contrast study, fluoroscopic study, ultra sound study of abdomen and myelography
6. Pathology – 10days.

Pathophysiology and Histopathology of various non communicable diseases.

7. General Medicine – 15days.
- Clinical examination of patients
 - Investigative procedures
 - Drawing of blood and storage
 - Lumbar puncture.
 - Interpretation of: X-Ray, ECG, Biopsy report, Biochemical results.
 - Endocrinology Postings: Clinical Examination of patient, Radio Immuno Assay techniques.
 - Ophthalmology for fundoscopy and measurement of Intraocular pressure, Refractometry & Perimetry.

At the end of each posting, a certificate has to be obtained from the concerned Head of the Department about satisfactory learning or otherwise.

E. Year wise P.G activities

First year of the course :

The P.G. student is required to

- a. To attend all UG Teaching sessions (Lectures, Tutorials and Practicals).
- b. To participate in seminars and journal club activities.
- c. To select and submit the topic of dissertation.
- d. To do reference work.
- e. To do self study.

Second year of the course :

P.G. graduate student is required to

- a. To do work of dissertation.
- b. To do UG Teaching.
- c. To participate in activities like seminars, journal club, symposia, workshops and group discussions.
- d. To start writing the laboratory manuals.
- e. To attend rotation postings in other departments .
- f. To attend state and national level conferences.
- g. To do self study.

Third year of the course :

The P.G. student is required to

- a. To complete and submit dissertation 6months before commencement of University examinations.
- b. To complete the writing of laboratory manuals.
- c. To do UG teaching.
- d. To participate in activities like seminars, journal club, symposia, workshop , panel discussion and group discussion.
- e. To attend conference at State and National level.
- f. To present a paper basing on his/her dissertation work in Institutional Scientific Research Society as well as at least one State / National conference before appearing for the examinations.
- g. To publish at least one Research paper or send it for publication in an indexed journal before University examinations.
- h. To do self study.

Seminars & Journal reviews.

The postgraduate students should actively participate in departmental seminars and journal clubs. A record showing the involvement of the student shall be maintained. A diary should be maintained. Seminars and journal clubs are suggested to be conducted alternately once in every 15 days.

During three years of the course, Postgraduate students shall participate in teaching undergraduate students in practicals, tutorials and group discussions.

Registration of dissertation topic :

Every candidate shall submit a synopsis in the prescribed proforma for registration of dissertation topic by the University after it is scrutinized by the PG training cum Research Committee of the institution. The synopsis shall be sent within the first 6 months from the commencement of the course or as notified by the University in the calendar of events, to the Registrar (Academic).

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.

Submission of dissertation:

The dissertation shall be submitted to the Controller of Examinations of the University six months prior to the final examination or as notified in the calendar of events. Approval of the dissertation by the panel of examiners is a prerequisite for a candidate to appear for the University examination.

Maintenance of Record of Work Done, Periodical assessment and progress report.

1. A diary showing each day's work has to be maintained by the candidate, which shall be scrutinized by the Head of the Department periodically.
2. A practical record has to be maintained by the candidate and duly scrutinized and certified by the HOD and to be submitted to the external examiner during the final examination.
3. A list of the seminars and journal reviews that have been attended and participated by the student has to be maintained which should be scrutinized by the Head of the Department.

Scheme of Examination

University Examination

A. Theory:

The written examination consists of four papers of 100 marks each. Each paper will be of three hours duration. Questions on recent advances may be asked in any or all papers*.

- Paper - I : General Physiology, Biopotential, Transport across membrane, Biophysical Principles, Comparative physiology, History of Medicine with special reference to physiology.
- Paper – II : Systemic Physiology including applied aspects of Blood, Respiratory Physiology, Cardiovascular, Digestive, Excretory systems, Exercise & Sports Physiology & Environmental physiology.
- Paper – III : Systemic physiology including applied aspects of Central Nervous System, Muscle & Nerve Physiology, Endocrines.
- Paper - IV : Systemic physiology including applied aspects of Reproductive System, Special Senses, Yoga & Meditation, Pathophysiology of non communicable diseases and recent advances.

***The topics assigned to the different papers are given as general guidelines. A strict division of subjects may not be possible. Some overlapping of topics is inevitable. Students should be prepared to answer the overlapping topics.**

Each theory paper will consist of: Long Essay type questions - 2 x 20 marks = 40
Short Essay type questions - 6 x 10 marks = 60

B. Practical : 200 Marks

i. Laboratory Procedures

- a. Human Normal subjects ... 50 marks
- b. Identifying Amphibian Graph ... 15 marks
- c. Solving a problem ... 10Marks
- d. Haematology ... 30 marks
- e. Identifying Histology Slides ... 20 marks

ii. Clinical Physiology:

Clinical examination of a given subject, discussion on investigations, interpretation of laboratory findings and physiological principles in diagnosis – 50 marks

iii. Clinical Bio-chemistry 25 marks

C. Viva Voce 100 marks

The Viva-Voce would be on all components of syllabus including discussion on dissertation 80 marks

D. Pedagogy 20 marks

Maximum marks for	Theory	Practicals	Viva-Voce	Total
M.D. Physiology Examination	400	200	100	700

Recommended Text, Reference books (Latest Edition) and Journals

1. J B West, Best & Taylor, Physiological basis of Medical Practice. Williams & Wilkins
2. Guyton, Text Book of Medical Physiology, Elseveir.
3. Ganong, Review of Medical Physiology, Mc Graw Hill
4. Campbell, Clinical Physiology., ELBS & Blackwell
5. John Bullock, Joseph Boyle, III Michael B. Wang, NMS, Physiology 3rd Edn, B.I. Waverley.
6. Sir. John V Dacie S M Lewis, Practical Hematology, Churchill Livingstone
7. Donald Emslie-Smith, Colin R Paterson, Thomas Catcherd, Nicholas W. Read, Textbook of Physiology, **ELBS**/Churchill Livingstone
8. Vernon B Mount Castle, Medical Physiology, vol. 1 & vol. 2, CV Mosby Company.
9. Robert M. Berne & Mathew N. Levy, Physiology, Mosby Year book
10. Carl J Wiggers, Physiology in health and disease, Lea Febiger
11. Williams, Text book of Endocrinology, W.B.Saunders
12. Peters dort, Adams, Braunwald, Issel Bacher, Matir, Wilson, Harrison's Principles of Internal Medicine, 16th edition., Mc Graw hill
13. Harper, Biochemistry, McGraw – Hill
14. John Field, H W Magou, Vol 1,2,3. Hand Book of Neurophysiology, Williams & Wilkins
15. Wallance O Fem, Hand Book of respiratory Physiology, vol 1,. Williams & Wilkins
16. Wintrobe, Clinical Hematology, Lea Febiger
17. Kathryn L Mc. Cance Sue E Huether, Text Book of Pathophysiology, Mosby

18. Gyrila Keele & Eric Neil, Samson wright's Applied Physiology, ELBS, Oxford University Press.

Journals:

1. Journal of Applied Physiology, By American Physiological Society
2. Physiological Reviews, By American Physiological Society
3. Annual Review of Physiology, By American Physiology Society
4. Advances in Physiology Education, By American Physiological Society.
5. Recent advances in Physiology, By American Physiological Society
6. Recent advances in Physiology, By American Physiological
7. Indian Journal of Physiology and Pharmacology.
8. Indian Journal of Medical Research
9. News in Physiological Sciences
10. New England Journal Medicine
11. British Medical Journal
12. Nature
13. Lancet

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, 2nd 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, 1st Ed. Oxford, Blackwell Scientific Publications 1988.
11. Mahajan B.K.: Methods in Bio-statistics for Medical students, 5th 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.

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 DAY TO DAY LEARNING, TEACHING AND RESEARCH ACTIVITIES

(To be completed once a month by Guide and to be counter signed by HOD)

Name of the Student:

Name of the Guide :

Month

:

Sl. No.	Points to be considered	Below Average 1	Average 2	Good 3	Very Good 4
1.	Regularity of attendance				
2.	Punctuality				
3.	Interaction with Teachers, colleagues and supportive staff				
4.	Maintenance of Notes.				
5.	Ability to conduct Theory & Tutorial Classes				
6.	Ability to demonstrate Laboratory Procedure.				
7.	Completeness in Preparation for Classes				
8.	Rapport with students.				
9.	Commitment to Research and Departmental Activities.				
10.	Overall quality of day to day work.				
	Total Score				

Signature of Guide

Signature of HOD

Check List – IV

EVALUATION FORM FOR PRACTICAL PROCEDURE

Name of the Student:

Name of the Faculty :

Date:

Sl. No	Points to be considered	Below Average 1	Average 2	Good 3	Very Good 4
1.	Psychomotor skills				
2.	Logical order				
3.	Mentioned all positive and negative points of importance				
4.	Accuracy in performing the procedure.				
5.	Ability to interpret result				
6.	Clinical Correlation.				
7.	Ability to elicit the signs.				
	Total Score				

Check List – V

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 – VI

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 – 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 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				

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.

LOG BOOK

Table 3: Diagnostic and Operative procedures performed

Name:

Academic Year:

College:

Date	Name	ID No.	Procedure	Category O, A, PA, PI*

*** Key:**

O – Washed up and observed

A – Assisted a more senior Surgeon

PA – Performed procedure under the direct supervision of a senior surgeon

PI – Performed independently

Model Overall Assessment Sheet

Name of the Department :

Academic Year :

Sl. No.	Points to be considered	Name of Student and Mean Score									
		A	B	C	D	E	F	G	H	I	J
1.	Regularity & Punctuality										
2.	Interaction with colleagues, Teachers & Students.										
3.	Teaching Skills.										
4.	Practical Skills										
5.	Orientation towards research										
Total Score											

Note: Use separate sheet for each year.

Integrated Teaching Programme

Sl . N	Name of the Topic	Name of the Subtopic & Dept.	Name of the Subtopic & Dept.	Name of the Subtopic & Dept.	Name of the Subtopic & Dept.	Name of the Subtopic & Dept.
01	Edema	TBW : Definition, Compartments, Measurement & Significance (Phy)	Pathophysiology of Edema (Patho)	----	----	----
02	Anemia	Erythropoiesis & Hemoglobin (Phy)	Pathophysiology of Anemia (Patho)	Investigation s in Anemia (Bio)	Medical Managamen t of Anemia (Med)	Public Health Importance (Comm.Med)
03	Acid base balance	Role of lungs & kidneys (Phy)	Investigations in Acid base disorders (Bio)	Medical Management of Acid base disorders (Med)	----	----
04	Coronary circulation	Physiology of coronary blood flow (Phy)	Clinical features & Medical Management of CAD (Med)	Surgical Management of CAD (Surg)	----	----
05	Hypertensio n	Physiology of blood pressure (Phy)	Pathophysiology of Hypertension (Patho)	Drugs used in Hypertension (Pharmac)	Medical Managemen t of Hypertensio n (Med)	-----
06	Myasthenia gravis	Physiology of NMJ (Phy)	Pathophysiology of Myasthenia gravis (Patho)	Investigation s in Myasthenia gravis (Bio)	Immunity in Myasthenia gravis (Micro)	Medical Management of Myasthenia gravis (Med)
07	Diabetes Mellitus	Insulin (Phy)	Pathophysiology of Diabetes of Mellitus (Patho)	Medical Management of Diabetes Mellitus (Med)	Surgical Managemen t of Diabetic foot (Surg)	----
08	Glaucoma	Anatomy of Eye (Ana)	Aqueous Humor (Phy)	Glaucoma (Ophal)	-----	-----
09	Parkinsonis	Physiology of	Pathophysiology of	Investigation	Medical	-----

	m & Alzheimer Disease	basal ganglia & memory (Phy)	Parkinsonism & Alzheimer Disease (Patho)	s in Parkinsonism & Alzheimer Disease (Bio)	Management of Parkinsonism & Alzheimer Disease (Med)	
10	Peptic Ulcer	Anatomy of Stomach (Ana)	Functional Anatomy of Stomach (Phy)	Pathophysiology of Peptic Ulcer (Patho)	Medical Management of Peptic Ulcer (Med)	Surgical Management of Peptic Ulcer (Surg)
11	IVF & Contraception	Physiology of MC & Spermatogenesis (Phy)	IVF & Contraception (OBGy)	-----	-----	-----


REGISTRAR
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