Section - I

Goals and General Objectives of Postgraduate Medical Education Program

Goal

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

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

General Objectives

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

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

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

Statement of the Competencies

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

Components of the PG Curriculum

The major components of the PG curriculum shall be:

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

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

Eligibility for Admission:

1. Post graduate degree course:

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

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

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

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

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

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

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

The MCI norms to qualify for Admissions

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

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

Obtaining Eligibility Certificate by the University before making Admission

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

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

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

Intake of Students

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

Course Duration

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

b. D.M/M Ch Degree Courses; (MCI PG REG 2000, 10:2)
The duration of these courses shall be for a period of 3 completed years including examinations.

Training Method

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

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

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

Attendance, Progress and Conduct

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

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

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

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

Monitoring Progress of Studies

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

The learning out comes to be assessed include:

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

Personal Attitudes:

The essential items are:

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

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

Acquisition of Knowledge:

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

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

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

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

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

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

Journal Review Meeting (Journal club):

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

Seminars / symposia:

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

Clinico-Pathological conferences:

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

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

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

Clinical Meetings:

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

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

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

Clinical and Procedural Skills:

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

Teaching Skills:

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

Attitude and Communication skills:

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

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

Work diary / Log Book:

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

Periodic tests:

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

Assessment

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

FORMATIVE ASSESSMENT, ie., assessment during the training would include:
Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self directed learning and ability to practice in the system.

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

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

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

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

Procedure for defaulter:

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

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

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

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

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

The dissertation shall be written under the following headings:

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

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

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

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

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

Guide:

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

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

Change of guide:

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

Schedule of Examination:

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

Scheme of Examination

M.D. /M.S. Degree

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

Dissertation:

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

Written Examination (Theory):

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

Practical / Clinical Examination:

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

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

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

Viva Voce:

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

The total marks shall be 100:

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

Examiners:

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

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

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

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

Declaration of distinction: A successful candidate passing the University examination in first attempt will be declared to have passed the examination with distinction, if the grand total aggregate of marks is 75 percent and above.
Distinction will not be awarded for candidates passing the examination in more than one attempt.

D.M/M.Ch Degree

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

Written Examination (Theory):

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

Practical / Clinical Examination:

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

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

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

Viva Voce:

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

The total marks shall be 100:

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

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

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

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

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.

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

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

Additional annexure to be included in all curricula

Postgraduate Students Appraisal Form
Pre/Para/Clinical Disciplines

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

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

Publications Yes/No

Remarks* ……..
…….
…….
……

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

SIGNATURE OF ASSESSEE SIGNATURE OF GUIDE

SIGNATURE OF HOD SIGNATURE OF UNIT CHIEF

SECTION II

M.S (OPHTHALMOLOGY)

GOALS:

1. To enable to become a competent Ophthalmologist and motivated teacher
2. To acquire knowledge & skills in teaching medical educational technology

OBJECTIVES:

1. 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.
2. Who shall have mastered most of the competencies that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.
3. Who shall be aware of the contemporary advances and developments in Ophthalmology
4. Be aware of his or her own limitations to the application of the specialty in situations which warrant referral to major centre's or individuals more qualified to treat
5. Contribute as an individual/or in a group of institution towards the fulfillment of national objectives with regard to prevention of blindness.
6. Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology ; and
7. Who shall have acquired the basic skills in teaching of the medical and paramedical professionals.
8. Continue to evince keen interest on continuing in ophthalmology education irrespective whether he is in a teaching institution or is a practicing surgeon.

Specific Learning Objectives:

The specific learning objective of postgraduate training course in Ophthalmology would be to train a MBBS doctor who will:

1. Practice Ophthalmology efficiently and effectively, backed by scientific knowledge and skill base.
2. Exercise empathy and caring attitude and maintain high ethical standards.
3. Who shall develops skills as a self-directed learner, recognize continuing education needs: select and use appropriate learning resources:

4. Who shall learn basic concepts of research methodology and epidemiology and be able to critical analyze relevant published research literature.
5. Be a motivated 'teacher'-keen to share his knowledge and skills with a colleague or a junior or any learner.

COURSE CONTENT

A. Essential theoretical knowledge

These are only broad guidelines and are illustrative, there may be overlap between sections.

1. The Basic sciences:

1. Orbital and ocular anatomy

a. Gross anatomy

b. Histology

2. Ocular Physiology

3. Pathology
   a. General pathology
   b. Ocular pathology: Gross pathology, Histopathology.

4. Biochemistry: General biochemistry, biochemistry applicable to ocular function.

5. Microbiology
   a. General Microbiology
   b. Specific microbiology applicable to the eye
   c. Immunology with particular reference to ocular immunology
6. Understanding and application of knowledge of the structure and function of the parts of Central Nervous System and other parts of the body which influence or control on the structure and function of the eye
7. Understand and develop competence in executing common general laboratory procedures employed in diagnosis and research in ophthalmology

8. Genetics

9. Geometric and ophthalmic optics
   a. Basic physical optics

b. Ophthalmic optics
c. Applied optics including optical devices

10. To demonstrate the knowledge of the pharmacological (including toxic) aspects of drugs used in ophthalmic practice and drugs commonly used in general diseases affecting the eyes

2. Clinical ophthalmology:

- Disorders of refraction
- Disorders of the Lids
- Disorders of the Lacrimal system
- Disorders of the conjunctiva
- Disorders of the sclera
- Disorders of the cornea
- Disorders of the uveal Tract
- Disorders of the lens
- Disorders of the Retina & Vitreous
- Disorders of the Optic Nerve & Visual pathway
- Disorders of the orbit
- Glaucoma
- Neuro ophthalmology
- Pediatric Ophthalmology
- Systemic Ophthalmology (ocular involvement in systemic disease)
- Immune ocular disorders
- Strabismus & Amblyopia
- Community Ophthalmology
- Ophthalmic Oncology
- Visual rehabilitation

B. Essential diagnostic skills: Instrumentation

1. Tonometry
    - Applanation
    - Indentation (Commonly Schiotz)

2. Assessment of epiphora

- Jone's dye test
- Syringing – Performance & interpretation

3. Dry eye evaluation
    - Schirmer test
    - Rose Bengal staining
    - Tear film breaking up time
    - Tear meniscus evaluation
    - Lissamine green staining

4. Corneal ulceration.
    - Taking a corneal scraping
    - Inoculation into media
    - Evaluation of Gram's stain
    - Evaluation of KOH Preparation
    - Corneal wedge biopsy

5. Direct Ophthalmoscopy
    - Distant direct
    - Media assessment
    - Use of filters provided

6. Indirect Ophthalmoscopy
    - Scleral depression
    - Fundus drawing capability
    - Use of filters provided

7. Slit lamp examination
    - Diffuse examination
    - Focal examination
    - Retro illumination – direct & indirect
    - Sclerotic scatter
    - Specular reflection
    - Staining modalities and interpretation

8. Slit lamp Accessories:
    - Applanation tonometry
        a. Goldman's applanation

- Gonioscopy
    a. Single mirror gonioscope
    b. Gonioprism
    c. Grading of the angle
    d. testing for Occludability
    e. Indentation gonioscopy
- 3 – mirror examination of the fundus
- 78-D/90-D/60-D examination
- Hruby lens examination
- Optical pachymetry
- Slit lamp photograph

9. Colour vision evaluation
    - Ishihara pseudoisochromatic plates
    - Other tests including
        a. Farnsworth – Munsell 100- hue or 15- hue tests
        b. Holmgrens wools
        c. Edridge – Green lantern

10. Use of Amsler's charting
    - Instructing in the use of and interpreting the chart**.**

11. Corneal topography and corneal mapping
    - Interpretation of corneal topography mapping
    - Specular microscopy of the corneal endothelium

12. Keratometry
    - Performance & interpretation of keratometry
    - Diagnosis of situations such as keratoconus
    - Keratoscopy

13. Fundus photography & fundus fluorescein angiography (FFA, FAG**)**
    - Doing and evaluating stereoscopic fundus photographs
    - Performance of and interpretation of FFA

14. Refraction
    - Retinoscopy
    - Streak retinoscopy
    - Use of trial set

- Use of Jackson's cross - cylinder
- Subjective and objective refraction

15. Autorefractometry
    - Use and interpretation of autorefractometer

16. Diagnosis & assessment of Squint
    - Ocular position and motility examination
    - Versions,ductions and vergences
    - Convergence facility estimation
    - Cover/Uncover / Altertnate cover test
    - Use of prism bars or free prisms in assessment of squint
    - Use of synaptophore / major amblyoscope
    - Use of Bagolini's striated glasses / red filters / Maddox rod
    - Use of worth's four dot test
    - Use of minor amblyoscope
    - Use & interpretation of the Hess chart / Lees' screen
    - Performance & interpretation of diplopia charting
    - Diagnosis of amblyopia

17. Exophthalmometry
    - Use of Hertel's exophthalmometer
    - Use of Luedde's exophthalmometer
    - Use of other exophthalmometers
    - Measurement of proptosis or exophthalmos

18. Use and evaluation of Ophthalmic ultrasound
    - Scan ultrasound with biometry
    - Scan ultrasound : performance & interpretation
    - Ultrasound Bio Microscopy

19. Interpretation of perimetry
    - Tangent screening
    - Goldman perimeter & interpretation
    - Static computerized perimetry
    - Interpretation of commonly managed problems

20. Optical Coherence Tomography usage and interpretation.

21. Radiology

- Interpretation of plain skull films

a. PA- 20 (Caldwell's view)
b. PNS (Water's view)
c. Lateral
d. Submentovertical
e. Optic canal views
f. Localisation of intra ocular and intra orbital FBs

- Interpretations of contrast studies

a. Performance & interpretation of dacryocystograms
b. performance and interpretation of orbital venograms
c. Interpretation of carotid angiograms

- Interpretation of CT – Scans & MRI Scans

a. Orbital CT interpretation & Orbital MRI evaluation
b. Brain CT interpretation.

C. Other skills required are:

1. Contact Lenses
   i. Assessment
   ii. RGP fitting
   iii. Soft lens fitting
   iv. Troubleshooting

2. Subjective correction of refraction
   i. Techniques of subjective correction
   ii. Knowledge of basic optical devices available and relative advantages and disadvantages of each.

3. Low vision aids
   i. The basics of fitting with knowledge of availability & cost

4. Community Ophthalmology
   i. Ability to organize peripheral eye screening
   ii. Ability to organize peripheral eye screening camps
   iii. Knowledge and ability to execute guidelines of National programme for Prevention of Blindness

5. Presentation
    i. Ability to present One's work effectively at various scientific fora particularly oral papers in scientific conferences within allotted framework of time.

6. Organization
    i. Ability to organize meetings, seminars and symposia
    ii. Ability to get along with colleagues and work as a team with the other members of the department.
    iii. Ability to interact with and work as a team with other disciplines that may exist in the same hospital.

7. Communication skills
    i. With patients
    ii. With colleagues

8. Record keeping
    i. The ability to maintain records as scientifically as possible
    ii. Knowledge of computer software is helpful

9. Teaching
    i. The ability to pass on skills acquired to one's juniors, theoretical, procedural and surgical

D. Essential Surgical Skills procedure:

Procedure	**Nature of activity & number**			
	O	A	PA	PI
1.Operating theatre				
a. Anaesthesia				
i. Retro bulbar anesthesia	-	-	10	15
ii. Peri bulbar anesthesia			20	60
iii. Para bulbar anesthesia	√			
iv. Facial blocks				
* O 'Brein Technique			5	5
v. Frontal blocks				2
vi. Infra orbital blocks				1
vii. Blocks for sacsurgery				10
viii. General Anaesthesia	5			
b. Magnification:				√
i. Operating microscope Familiarity with use is essential				

ii. Operating loupe				
c. Lid Surgery				
i. Tarsorrhaphy				10
ii. Ectropion and entropion procedures				2
iii. Ptosis surgery		4		
iv Lid repair following trauma and surgical excision of lid for tumours etc.			5	
v. Epilation, electrolysis, cryotherapy etc.				20
d. Destructive procedures:				
i. Evisceration with or without implant				3
ii. Enucleation with or without implant				5
iii. Modified enucleation procedures for intraocular tumours			1	
e. Sac surgery				
i. Dacrocystectomy				6
ii. Dacryocystorhinostomy				4
iii. Endonasal Dacryocystorhinostomy	5			

Procedure **Nature of activity & number**

	O	**A**	**PA**	**PI**
iv. Probing for congenital obstruction of naso lacrimal duct			**2**	
f. Extraocular muscle surgery				
i. Recession and resection procedures on the horizontal recti			3	
g. Cataract Surgery				
i. Standard ECCE with or without IOL implantation				**5**
ii. Small incision ECCE with or without IOL implantation.				**25**
iii. Membranectomy	2			
iv. Secondary AC or PC IOL implantation	2			
v. Phacoemulsification		10		
vi. Intra capsular cataract extraction	2			
vii. Vectis extraction			1	
h. Retinal Surgery				
i. Needs to know how to assist in external procedures such as buckling.		1		
ii. Prophylactic cryotherapy	2			
i. Orbit surgery				
i. Anterior orbitotomy for diagnostics and therapy	2			

ii. Lateral orbitotomy for tumours	2			
iii. incision and drainage via anterior orbitotomy for abscess.	1	2		
iv. Exenteration	1			
v. Fine needle aspiration biopsy of orbital disease.	1			
j. Vitrectomy				
i. Intra vitreal and intra cameral (anterior chamber injection techniques and dosages, particularly for endophthalmitis management	5		4	
ii. Needs to know the basics of open sky vitrectomy (anterior segment) as management of cataract surgery complication.	4			
iii. Automated vitrectomy	3			
Iv Assist vitrectomy surgeon if facility exists.		3		

Procedure	Nature of activity & number			
k. Keratoplasty	O	A	P.A	P I
i. Assisting or doing penetrating keratoplasty (therapeutic , optical)			1	
ii. Lamellar keratectomy	2			
l. Glaucoma surgery				
i. Trabeculectomy				3
ii. Pharmacological modification of trabeculectomy	2			
iii. Goniotomy	3			
iv. Cyclocryotherapy and other cyclodestructive procedures				3
m. Surface ocular procedures				
i. pterygium excision with modifications				7
ii. Conjuctival grafting			3	
iii. Biopsy of cornea and conjunctiva				2
n. Pterygium excision				12
2. Out patient:				
a. Manual diagnostic procedures such as syringing, corneal scraping, conjucnctival swab collection, conjunctival scraping etc.				55

b.Conjuctival and corneal foreign body removal on the slit lamp				25
c. Chalazion incision and curettage				22
d. Biopsy of small lid and tumours			4	
e.Suture removal skin, conjunctival , corneal, and corneoscleral surgeries				12
f. subconjucntival injection				20
g. Posterior sub – Tenon's injections				5
h. Artificial eye fitting				5
i. Laser procedures				
i. Laser capsulotomy			2	
ii. Laser iridotomy	2			
iii. Laser trabeculoplasty	2			
iv. Panretinal photocoagulation	10			
v. Focal photocoagulation	10			

* **O – Washed** & Observed
* **A** - Assisted the Operating Surgeon
* **PA** – Performed with Assistance
* **PI** - Perform Independently

E. ESSENTIAL RESEARCH SKILLS.

1. Basic statistical knowledge
    a. Ability to undertake clinical & basic research
    b. Descriptive and Inferential statistics
    c. Ability to publish results of one's work
2. Recognise a research problem
3. State the objectives in terms of what is expected to be achieved in the end
4. Plan a rational approach
5. Spell out the methodology and carry out most of the technical procedures
6. Ability to constructively criticize publications in the field and without.
7. This could be achieved during the course by attending workshops on Research Methodology, basic statistics classes and regularly having journal clubs etc where selected articles could be taken and evaluated for content quality and presentation.

Year – wise structured training schedule

First Year:

1. Theoretical knowledge

a. Basic sciences should be addressed during this period
b. It is useful to have an internal examination of the basic sciences at the end of the first year, which will decide appearance at the final examination.
c. Clinical Ophthalmology
d. Student shall be posted in basic departments (Anatomy, Pathology &
e. Microbiology) for 10 days each

1. Clinical examination and diagnostics

a. The basics of history taking, order and correct methods of examination and recording have to be learnt during this time.
b. Clinical and surgical decision making is encouraged under supervision.

2. Diagnosis

a. All procedures should as far as possible be done and the student should be fairly conversant with most of the techniques.

3. Surgery

a. Extra ocular surgery including
   i. Destructive procedures must have been done independently with or without Assistance
   ii. Local Anesthesia (retro bulbar and peribulbar blocks)
   iii. Subconjuctival injections
   iv. Chalazion and pterygium surgery.
   v. Lid and corneal foreign body removal, suture removal on the slit lamp etc.
   vi. At the end of the first year, the student should have participated as assistant in most of the intra ocular procedures as an assistant.
   vii. Cataract Surgery
      a. Wet lab: Practise steps of cataract surgery on Kitaro set and on goats eyes.
      b. Cataract Surgery should be approached in stages, emphasis to be given on microscopic surgery.
   viii. Skills Lab: practicing procedure like Direct ophthalmoscopy, Indirect ophthalmoscopic examination simulation, cataract surgery and Pahacoemulsification simulation on mannequin
   ix. Cadaver lab – Dissection of Orbit and Eyeball
   x. Suturing Technique.

Second Year:

1. **Theoretical knowledge**
   a. Here stress will be laid on clinical Ophthalmology

2. **Clinical examination and diagnostics**

   a. The student is encouraged to take diagnostic investigational and therapecutic decisions on his /her own. He / She should be able to manage most of the common problem that arise without guidance. However, the degree of freedom allowed in decision making is left to the confidence of the teacher in the student's abilities. It is to be encouraged. May require guidance for more complex cases.

3. **Diagnostics**
   a. The student should be conversant and at ease with most diagnostic procedures. Other procedures are optional skills if facility is available in the department. However, as far as possible, it is advisable to make all such facility available in the department.

4. **Surgical skills**
   a. At the end of the second year, the student should capable of operating without assistance, but under supervision, all varieties of cataract (standard Extra capsular cataract Extraction & Small incision cataract surgery) except congenital cataract. He / She should also know the management of cataract induced complications and cataract surgical complications (management of vitreous loss)
   b. He/She should have performed the basic anti glaucoma procedures such as trabeculectomy either with assistance or under supervision
   c. Extra ocular surgery such as squint surgery could be performed with assistance
   d. In addition, lacrimal sac surgery such as dacryocystectomy and dacryostorhinostomy should be possible with assistance or under supervision.
   e. In addition, the master's candidate should ideally have assisted in the other surgery such as retinal surgery, vitrectomy, orbit surgery, advanced oculoplastic surgery etc.
   f. Assisting for squint surgery
   g. Assisting for lid surgery. Tarsorrhaphy should be performed independently and also the simpler oculoplastic procedures..

5. Sub speciality training - Student may be deputed for a month in sub speciality training for advanced learning

Third Year:

1. **Theoretical Knowledge**:
   a. Should be thorough with basic clinical Ophthalmology with extensive and intensive reading.

2. **Clinical examination and diagnostics**
   a. Should be conversant with all aspects of clinical examination and decision making. Independent decision making and investigational and management freedom should be given at this stage for the more usual situations. However, complex cases could be discussed with consultant and degree of freedom of decision making is left to the consultant's discretion.

3. **Surgical Skills**
   a. Routine skills are honed during this period.
   b. Cataract surgery should be done independently without supervision or assistance.
   c. Anti glaucoma surgery may be done.
   d. Can assist other procedures such as retinal surgery, orbit surgery etc. The choice of doing the surgery with assistance and supervision should be left to the discretion of the consultant.
   e. Student should be able to perform Phacoemulsification effectively.

Teaching – Learning Activities

1. **Clinical case Discussion**
   a. Clinical Case discussions covering wide variety of cases will be held once a week. The discussion will include discussion good record keeping and documentation. Time table for the case presentation with names of the students should be announced in advance.

2. **Ward rounds:** Ward rounds may be service or teaching rounds.
   a. Service Rounds: Postgraduates students should do service rounds every day for the care of the patients. Newly admitted patients should be worked up by the post graduate students and presented to the faculty members the following day.

b. Teaching Rounds: Every unit should have grand rounds for teaching purpose at the bed side. A dairy should be maintained for day – to – day activities.

3. Seminars:

Subject seminar: Recommended to be held once in a week. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details. The presentations would be evaluated using check lists. A timetable for the subject with names of the students and the moderator should be announced in advance. The topics selected should be repeated once in a three year.

4. Journal Clubs

a. This also should be a once a week or once in two weeks exercise. The topics selected should be current. It could be done topic wise or journal wise. Indexed journals are recommended.

b. Discussed under the following headings :-
1) Aim 2) Methods 3) Observations 4) Discussions and 5) Conclusions

c. Each Candidate shall present journals allotted at least four times in a year and o total of 12 such presentation be made in 3 years.

d. All the PG students are expected to attend and actively participate in discussion and enter in the Log Book relevant details

5. Group Discussion:

Group discussion shall be held once a week. Group discussion can be adopted for problem related case discussion or could be a choice of investigation.

4. Presentations/ Publications: Post graduate must present one paper, one poster in the state conference or in all India conference and one paper should be published/accepted/sent for publication in indexed Journal as part of the MCI requirement.

5. CPC

Clinico pathological conference should be done at least twice a year (CPCs)

6. Symposium:

Student should participate in symposium held every 4 months.

7. **Lectures**
   a. Lectures to be conducted once a week.
   b. Lectures to candidates should be in the form of a instructional courses at the beginning of the academic term. These would include topics such as dark room techniques, fundus fluorescein angiography, evaluation of perimetry, Squint evaluation and management, slit lamp examination with accessories such as gonioscopy Indirect Ophthalmoscopy and about medical ethics and medico-legal aspect relevant to the speciality.
   c. Lectures on waste management, hospital administration and OT management and other general topics can be addressed in general with other speciality or during orientation classes..
   d. Lectures could also be arranged round the year on subspecialty topics.

   e. During the course, the candidates should have one lecture / one seminar on National programs, International assistance schemes for execution of national program .These would be addressed to in detail, including current status etc. In addition it would be useful to include a few lectures on other non-Ophthalmic National programs being undertaken in the country.

8. **Research Activities**
   A candidate should learn to be conversant with journal browsing, medline search etc. to help in project and clinical and research work.

9. **Dissertation & research meetings**
   Departmental meetings should be held to overview research work done particularly satisfactory conduct and progress of dissertation topics. These could be conducted once in 3 months either as an additional activity or in lieu of a journal club.

10. **Teaching skills**: Every post Graduate student should be involved in undergraduates Theory & clinical teaching preferably in the third year. 5 theory classes and 10 Clinical classes may be given.

11. **Integrated Teaching**: There shall be at least once a month integrated teaching with Medicine, Dermatology or Paediatric department. Following topics are suggested:
    I. Ophthalmology and Medicine - Diabetic retinopathy, Hypertensive retinopathy, Drug toxicities, papilloedema, Neurofibromatosis.

II. Ophthalmology and Dermatology – Steven Johnson syndrome, Xeroderma pigmentosa, Herpes, Psoriasis. Acne, Bechet's syndrome.
III. Ophthalmology and Paediatrics – Retinopathy of prematurity, KF rings (Wilson disease), Down's syndrome, Craniyosynostosis.

12. Orientation Programme:
All postgraduates from all specialties should have an introductory program in the institution where they are informed about candidate responsibilities, working systems, library usage, lab protocols etc. Specific orientation regarding the departmental working could be made as an introductory talk in the department concerned.

FORMATIVE ASSESSMENT:

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

General Principles
Internal Assessment should be frequent, cover all domains of learning and used to provide feedback to improve learning; it should also cover professionalism and communication skills. The Internal Assessment should be conducted in theory and clinical examination. A MCQs test to be carried out as a formative assessment / a part of formative assessment.

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

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

The student to be assessed periodically as per categories listed in postgraduate student appraisal form (Annexure viii)

SUMMATIVE ASSESSMENT, ie., assessment at the end of training
The summative examination would be carried out as per the Rules given in POSTGRADUATE MEDICAL EDUCATION REGULATIONS, 2000.

University examination Scheme of examination

Title of the Theory Paper with Content

Paper I	100 marks	3 Hrs
Paper II	100 marks	3 Hrs
Paper III	100 marks	3 Hrs
Paper IV	100 marks	3 Hrs
Total	400 marks	

Paper I: Basic sciences and investigative ophthalmology

a. Anatomy of the eye & Orbit
b. Ocular Physiology
c. Microbiology & Immunology
d. Biochemistry related to ophthalmology
e. Ocular pharmacology,
f. instruments, investigative ophthalmology
g. Optics & refraction
h. Genetics

Paper II: Clinical Ophthalmology

Disorders of lids, orbit, lacrimal system
Strabismus and Amblyopia
Disorders of the Sclera
Disorders of uvea
Disorders of cornea,
Disorders of the conjunctiva
Glaucoma
Lens
Disorders of retina and Optic nerve
Paediatric Ophthalmology

Paper III:

Neuro ophthalmology

Systemic disease in relation to ophthalmology

Paper IV:

Ocular Injuries

Surgical ophthalmology
Community Ophthalmology
Ophthalmic research
Recent advances
The distribution of chapters/ topics shown against the papers are suggestive only and may overlap or change.
*Recent advances/ trends

1. * Recent advances in surgical management of cataract
    a*. Manual small incision cataract surgery
    b*. Phacoemulsification
    c* Newer intraocular lens implant
2*. Recent advances in diagnostic procedures, medical & surgical management of glaucoma
3*. Recent advances in lasers in Ophthalmology
4* Recent advances in vitreous substitutes & perfluorocarbons
5*. Recent advances in retinal detachment surgery
6*. Recent advances in ultrasonography
7*. Recent advances in indocyanine green angiography
8*. Recent advances in optical coherence tomography
9*. Newer antibiotics, antifungal & antivirals

Clinical Examination: **300 marks**

1. Long case: **100 x 1 = 100**

a. Duration: 1 hour
b. Marks: **100 marks**
c. Type of case:
    i. Neuro Ophthalmology
    ii. Proptosis
    iii. Sclerokeratouveitis
    iv. Uveitis with complications
    v. Lens induced complications
    vi. Glaucoma

2. Short Cases: **45 X 2 = 90**

a. Two short cases of **45 marks** each.
b. Duration: **15 minutes** each

3. Fundus cases: **40 X 2 = 80**
    a. Two fundus cases
    b. Duration: 15 minutes each
    c. Marks: **40 marks** each
    d. Type of cases:
        i. Rhegmatogenous retinal detachment
        ii. diabetic retinopathy, background & proliferative
        iii. vasculitis
        iv. Tractional RD
        v. Hypertensive retinopathy and combinations of the same with DR
        vi. Mass lesions
        vii. High myopia with degeneration
        viii. Coloboma choroids, simple or with detachment
        ix. Posterior uveitis, retinitis etc
        x. Pigmentary retinopathy

4. Refraction: **30 X 1 = 30**
    a. One refraction case of **30 marks**

Viva voce: 80marks

Students will be examined by all the examiners together about students overall knowledge of the subject and shall include the following:

i. Instruments
ii. Pathology specimens and pathology and Microbiology slide
iii. Drugs, x-rays, USG/OCT/CT/MRI scans, etc
iv. Visual fields and other ophthalmic diagnostics

b) Pedagogy Exercise: (20 marks)

A topic be given to each candidate before the clinical examination. Each will make a presentation on the topic for 8 to 10 minutes.

c) During the viva – voce discussion on dissertation may be held. No marks are assigned as it would been evaluated separately.

Viva voce including Pedagogy (Breakup Marks): 100 Marks

1. Ocular Therapeutics - 20 marks
2. Surgical Instruments - 20 marks

3. General ophthalmology - 20 marks
4. OSCE - 20 marks
5. Pedagogy - 20 marks

Maximum marks:

Theory	Practical	Viva	Grand Total
400	300	100	800

Recommended Books (Latest)

1. GENERAL OPHTHALMOLOGY

i. Duane's System of Ophthalmology –Clinical Ophthalmology, Revised edition 2013
ii. Jakobiec Series –Principles and Practice of Ophthalmology, 3rd Edition,2008
iii. American Academy of Ophthalmology Series—Ophthalmic Pathology, 2018-19
iv. John , The Chicago eye and emergency manual 1st edition, 2011
v. Podos and Yanoff Series—text book of ophthalmology, 1994
vi. Jack Kanski Clinical ophthalmology—A systemic approach, 8th edition, 2016
vii. Yanoff & Duker., Ophthalmology, 5th Edition, 2018
viii. Pinelli, Elborgy, Nutrition and the eye 1st edition, 2010
ix. Chaudhari, PG ophthalmology 1st edition 2012
x. Requisites In ophthalmology
xi. Springer—Essential of Ophthalmology- 2007

2. CORNEA

i. Krachmer—Cornea, fundamentals of Cornea &External disease, 4th edition, 2016
ii. Leibowitz waring—Corneal Disorders Clinical diagnosis and management, 2nd edition,1998
iii. Smolin & Thoft's—The Cornea scientific foundation & Clinical Practice, 4th Edition 2005
iv. Cornea Color Atlas—Krachmer Jay H Cornea color Atlas, 3rd edition, 2014
v. Grayson Diseases of cornea, 4th edition, 1997

3. GLAUCOMA

i. Bruce Shields Text Book of Glaucoma Shields Text Book of Glaucoma R.Rand Allingham 6th edn 2010

ii. Becker & Schaeffer's Text book of Glaucoma 8th edition, 2009
iii. The Visual Field –Harrington, Drake,the visual fields text and atlas of clinical Perimetry,1990
iv. The Visual Field Testing with Humphrey field analysis—Chaplin Neil T 1999
v. Color Atlas of Glaucoma—Shields M Bruce, 1998
vi. Krupin & Shields Series on Glaucoma - 1996
vii. Andersons Computerized Perimetry - 1999
viii. Gonioscopy: A text and atlas with DVD-ROM 1st edition, 2013

4. RETINAL DISEASES

i. Stephen Ryan's retina—Retina Editor in chef Stephen, J Ryan, 5th edition, 2013
ii. Practical Atlas of Retinal Disease and therapy—W.R.Freeman,2nd Edition 1998
iii. Ron Michel –Retina Detachment – 2nd edition, 1996
iv. Steve Charles—Basic Vitrectomy- 5th edition, 2013
v. Medical Retina –Frank J Holz, 2010, 1st edition
vi. Optical coherence tomography
vii. Handbook of retinal OCT 1st edition, J.S Duker, 2014
viii. Atlas of Optical Coherence Tomography of Macular Diseases - Vishali Gupta, 2004

5. ULTRA SOUND

i. Sandra Byrne & Ronald Green—Ophthalmic Ultra Sound - 2010
ii. Shanker Netralaya—Ultra Sound of Eye- 2nd edition, 2013

6. UVEA

i. Robert B. Nussenbalt—Uveitis Fundamental & Clinical Practice 4th edition, 2010
ii. Smith & Nozik Clinical Uveitis 3nd edition, 2003

7. CATARACT SURGERY

i. Jaffe—Cataract Surgery & its complications Normans Jaffe4th Edition-1997
ii. Steinest Caratact Surgery 3rd edition, 2010

8. ORBITAL DISEASE

i. Rootmans Diseases of the Orbit- 2nd edition 2003
ii. Jakobiec & Snow—Diseases of the Orbit

9. NEURO OPHTHALMOLOGY

i. Walsh & Hoyt—Clinical Neuro Ophthalmology 6th edition 2005

ii. Burde Savino Trobe – 3rd edition 2002

10. TUMOURS

i. Jerry Shields Diagnosis and Management of Orbital Tumours (Atlas of Orbital Tumours 2008)
ii. Char—Clinical ocular oncology 2nd edition 1997

11. STRABISMUS

i. Scheiman & Wick—Clinical Management of Binocular Vision, 4th edition, 2013
ii. Diagnosis and Management of Ocular Motility Disorders, 4th edition, 2013
iii. Mein & Trimble 4th edition, 2014
iv. Gunter Von Noorden, Binocular vision & ocular Motility, theory & Management of strabismus, 6th edition, 2001

12. GENETICS

i. Elias Traboulsi - Genetic disease of eye (Oxford monograph ob medical genetics) 2nd edition, 2012

13. OPHTHALMIC PATHOLOGY

i. Spencer—Ophthalmic Pathology Atlas & Text Book, 4th edition, 1996
ii. Yanoff & Fine—Yanoff Myron Ocular pathology 7th edition, 2015
iii. Zimmerman
iv. Margo and Gross Nicholas

14. OCULAR PHARMACOLOGY

i. Havener's Occular Pharmacology ,16th edition, 1994
ii. Action and use of ophthalmic drugs - Davies,Hopkins & Pearson 2009
iii. Fraunfelder & Roy, 6th edition , 2007

15. ANATOMY

i. Wolff's Anatomy of the eye & Orbit, 8th edition 1998
ii. Snell's – 2nd edition clinical anatomy of eye, 1998

16. PHYSIOLOGY

i. Adler's Physiology of Eye—Clinical Application 11th edition, 2011

17. BIOCHEMISTRY

i. John J Harding 1997

18. IMMUNOLOGY

i. Ocular Immunology - Gilbert Smolin—G Richard O'Connor 1981

19. PAEDIATRIC OPHTHALMOLOGY

i. Taylor Paediatric Ophthalmology in strabismus, 5th edition, 2012
ii. Kenneth Wright—Paediatric Ophthalmology & Strabismus, 2nd edition, 2012
iii. Azad retinopathy of prematurity, Text and atlas, 1st edition**,** 2011

20. REFRACTION

i. Duke Elders Practice of Refraction—10th Edition, 1993
ii. Boris 2n edition, 2006
iii. Elkington & Frank – 3rd edition, 1999

21. OPERATIVE SURGERY

i. Stellard—Stellards Eye Surgery 7th Edition, 1989
ii. Gottsch, Stark and Goldberg, 5th edition, 1998

JOURNALS:

1. British Journal of Ophthalmology
2. Indian Journal of Ophthalmology
3. American Journal of Ophthalmology
4. Acta Ophthalmologica Scandinavia
5. Ophthalmology (AAO)
6. Archives of Ophthalmology (Elsevier)
7. Eye (British Royal College of Ophthalmology)

SECTION III

Format of Model Check Lists

Check List-I.
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 0	Below Average 1	Average 2	Good 3	Very Good 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	Poor 0	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.	Overall performance					
10.	Any other observation					
	Total Score					

Check List-III

MODEL CHECK LIST FOR EVALUATION OF CLINICAL WORK IN WARD /OPD

(To be completed once a month by respective Unit Heads including posting in other departments)

Name of the Student _____

Name of the Unit Head _____ Date: _____

Sl. No.	Points to be considered	Poor 0	Below Average 1	Average 2	Good 3	Very Good 4
1.	Regularity of attendance					
2.	Punctuality					
3.	Interaction with colleagues and supportive staff					
4.	Maintenance of case records					
5.	Presentation of cases during rounds					
6.	Investigations work up					
7.	Beside manners					
8.	Rapport with patients					
9.	Counselling patient's relatives for blood donation or Postmortem and Case follow up.					
10.	Over all quality of Ward work					
	Total Score					

Check List-IV

EVALUATION FORM FOR CLINICAL PRESENTATION

Name of the Student _____

Name of the Unit Head _____ Date: _____

Sl No.	Points to be considered	Poor 0	Below Average 1	Average 2	Above Average 3	Very Good 4
1.	Completeness of history					
2.	Whether all relevant points elicited					
3.	Clarity of Presentation					
4.	Logical order					
5.	Mentioned all positive and negative points of importance					
6.	Accuracy of general physical examination					
7.	Whether all physical signs elicited correctly					
8.	Whether any major signs missed or misinterpreted					
9.	Diagnosis: Whether it follows logically from history and findings					
10.	Investigations required * Complete					
	*Relevant order					
	*Interpetation of investigations					
11.	Ability to react of questioning Whether it follows logically from history and findings					
12.	Ability to defend diagnosis					
13.	Ability to justify differential diagnosis					
14.	Others					
	Grand Total					

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 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 divine	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					
	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 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					
	Total Score					

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

Name of the Department/Unit :

Name of the PG Student :

Period of Training : FROM……TO……

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

Publications Yes/ No

Remarks* _____

_____

_____

_____

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

SIGNATURE OF ASSESSEE SIGNATURE OF CONSULTANT SIGNATURE OF HOD

LOG BOOK

Table 1: **Academic activities attended**

Name: _____ Admission Year: _____

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

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

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

LOG BOOK

Table 3: **Diagnostic and Operative procedures performed**

Name _____ Admission Year: _____

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

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

*** Key**

0	-	Washed up and observed
A	-	Assisted a more senior Surgeon
PA	-	Performed procedure under the direct supervision of a senior surgeon.
PI	-	performed independently.

LOG BOOK

Table – 4: Daily activities record

Name: Admission year:
College:

Date	Activities	Sign

Model Overall Assessment Sheet

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

Academic Year: _____

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

Note: Use separate sheet for each year.

Model Checklists for Assessment of Scientific Papers for Publication

Sl. No.	Criteria	Distribution of Marks	Marks awarded
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 _ _ _ _ __ __ _ _ _ _ _ _ _ _ _

SECTION - IV

MEDICAL ETHICS & MEDICAL EDUCATION

Sensitization and Practice

Introduction

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

Course Contents

1. Introduction to Medical Ethics

   What is Ethics?
   What are values and norms?
   Relationship between being ethical and human fulfillment
   How to form a value system in one's personal and professional life
   Heteronymous Ethics and Autonomous Ethics
   Freedom and personal Responsibility

2. Definition of Medical Ethics
   Difference between medical ethics and bio-ethics
   Major Principles of Medical Ethics 0

Beneficence	= fraternity
Justice	= equality
Self determination (autonomy)	= liberty

3. Perspective of Medical Ethics
   The Hippocratic Oath
   The Declaration of Helsinki
   The WHO Declaration of Geneva
   International code of Medical Ethics (1993)
   Medical Council of India Code of Ethics

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

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

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

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

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

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

Recommended Reading

1. Francis C. M., **Medical Ethics**, 2nd Ed, 2004Jaypee Brothers, Bangalore/-
2. Ethical guidelines for biomedical research on human participants, ICMR publication 2017
3. Santosh Kumar: the elements of research, writing and editing 1994, Dept of Urology, JIPMER, Pondicherry
4. Srinivas D.K 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 G Med 1991
7. Kirkwood B.R, Essentials of Medical Statistics, 1st Ed.,Oxford: Blackwell Scientific Publications 1998
8. Mahajan B.K. Methods in bio statistics for medical students, 5th Ed, New Delhi, Jaypee, Brothers Medical Publishers, 1989
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10. John A Dent. Ronald M Harden, A Practical guide for medical teacher, 4th Edition, Churchill Livingstone, 2009.
11. Tejinder Singh Anshu, Principles of Assessment in Medical Education, Jaypee brothers
12. Dr. K.Lakshman, A Hand Book on Patient Safety, RGUHS & Association of Medical Consultants, 2012

13. Bernard Mogs, Communication skills in health & social care, 3rd Edition, (S) SAGE, 2015
14. Manoj Sharma, R. Lingyak Petosa, Measurement and Evalution for Health Educators, Jones & Bartlett Learning.
15. David E. Kern, Particia A, Thomas Mark T, Hughes, Curriculum Development for Medical Education. A six-step approach, The Johns Hopkins University press/Baltimore.
16. Tejinder Singh Piyush Gupta Daljit Singh, Principles of Medical Education (Indian Academy of Paediatrics), 4th Edition, Jaypee Brothers, 2013.
17. Robert Reid, Torri Ortiz Linenemann, Jessica L.Hagaman, Strategy Instruction for Students with learning disabilities, 2nd Edition, The Guilford Press London.
18. Lucinda Becker Pan Demicolo, Teaching in higher education, (S) SAGE, 2013.
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21. R.L.Bijlani, Medical Research, Jaypee Brothers, 2008
22. Stephen Polgar Shane A Thomas, Introduction to Research in the Health Sciences, Churchill Livingstone Elsevier, 2013.
23. Amar A,Sholapurkar. Publish & Flourish -A practical guide for effective scientific writing, Jaypee Brothers, 2011
24. Charles R.K.Hind, Communication Skills in Medicine, BMJ, 1997.