

**COMPETENCY BASED MEDICAL EDUCATION  
FOR  
UNDERGRADUATE MEDICAL EDUCATION**

**CURRICULUM**

**ADOPTED BY**

**SMT. B. K. SHAH MEDICAL INSTITUTE & RESEARCH CENTRE,  
SUMANDEEP VIDYAPEETH  
DEEMED TO BE UNIVERSITY**

**(From the Academic Year 2019-20 onwards)**

## **SUMANDEEP VIDYAPEETH**

Deemed to be university (Declared under Section 3 of UGC act of 1956)

### **FACULTY OF MEDICINE**

#### **Based on Regulations on Graduate Medical Education (Amendment), 2019**

(MCI Amendment Notification No. MCI-34(41)/2019-Med./161726, 4<sup>th</sup> November 2019)

(Board of Studies letter no.: SBKSMIRC/Dean/863/2019, dated 09/05/2019 and Vide Notification of Board of Management Resolution Ref: No.SVDU/NOTFN/05/2019-20, dated 25/11/2019)

#### **1. Introduction:**

- These Regulations shall apply to the MBBS course starting from academic year 2019-20 onwards.

#### **2. Objectives of the Indian Medical Graduate (IMG) Training Programme**

##### **2.1 Program Outcomes (IMG)**

The undergraduate medical education program is designed with a goal to create an “Indian Medical Graduate” (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following goals for the learner of the Indian Medical Graduate training program are hereby prescribed:-

At the end of undergraduate program, the Indian Medical Graduate should be able to:

- Recognize “health for all” as a national goal and health right of all citizens and by undergoing training for medical profession to fulfill his/her social obligations towards realization of this goal.
- Learn every aspect of National policies on health and devote her/him to its practical implementation.
- Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
- Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
- Become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

##### **2.2 Program Specific Outcomes (M.B.B.S.)**

At the end of undergraduate program, the Indian Medical Graduate should be able to:

- POS.1. be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.
- POS.2. be competent to practice preventive, promotive, curative, palliative and rehabilitative medicine in respect to the commonly encountered health problems.
- POS.3. appreciate rationale for different therapeutic modalities; be familiar with the administration of “essential medicines” and their common adverse effects.

- POS.4. be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.
- POS.5. possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.
- POS.6. be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following:
- a. Family Welfare and Maternal and Child Health (MCH)
  - b. Sanitation and water supply
  - c. Prevention and control of communicable and non-communicable diseases
  - d. Immunization
  - e. Health Education
  - f. Indian Public Health Standards (IPHS), at various levels of service delivery
  - g. Bio-medical waste disposal
  - h. Organizational and/or institutional arrangements.
- POS.7. acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, hospital management, inventory skills and counseling.
- POS.8. be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.
- POS.9. be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
- POS.10. be competent to work in a variety of health care settings.
- POS.11. have personal characteristics and attitudes required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

### **2.3 Roles of IMG**

In order to fulfil the Program Outcome and POS of the IMG training programme, the medical graduate must be able to function in the following roles appropriately and effectively:-

- Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
- Leader and member of the health care team and system with capabilities to collect analyze, synthesize and communicate health data appropriately.
- Communicator with patients, families, colleagues and community.
- Lifelong learner committed to continuous improvement of skills and knowledge.
- Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

In order to effectively fulfil the roles as listed in clause 2, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

**Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion**

- a. Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioural and social perspective.
- b. Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.
- c. Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.

- d. Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- e. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- f. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.
- g. Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- h. Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- i. Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- j. Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frame works.
- k. Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- l. Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:
  - (i) Disease prevention,
  - (ii) Health promotion and cure,
  - (iii) Pain and distress alleviation, and
  - (iv) Rehabilitation.
- m. Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.
- n. Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.
- o. Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

#### Leader and member of the health care team and system

- a. Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- b. Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.
- c. Educate and motivate other members of the team and work in a collaborative and

collegial fashion that will help maximize the health care delivery potential of the team.

- d. Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.
- e. Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- f. Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancers, in collaboration with other members of the health care team.

#### Communicator with patients, families, colleagues and community

- a. Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.
- b. Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- c. Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.
- d. Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making.

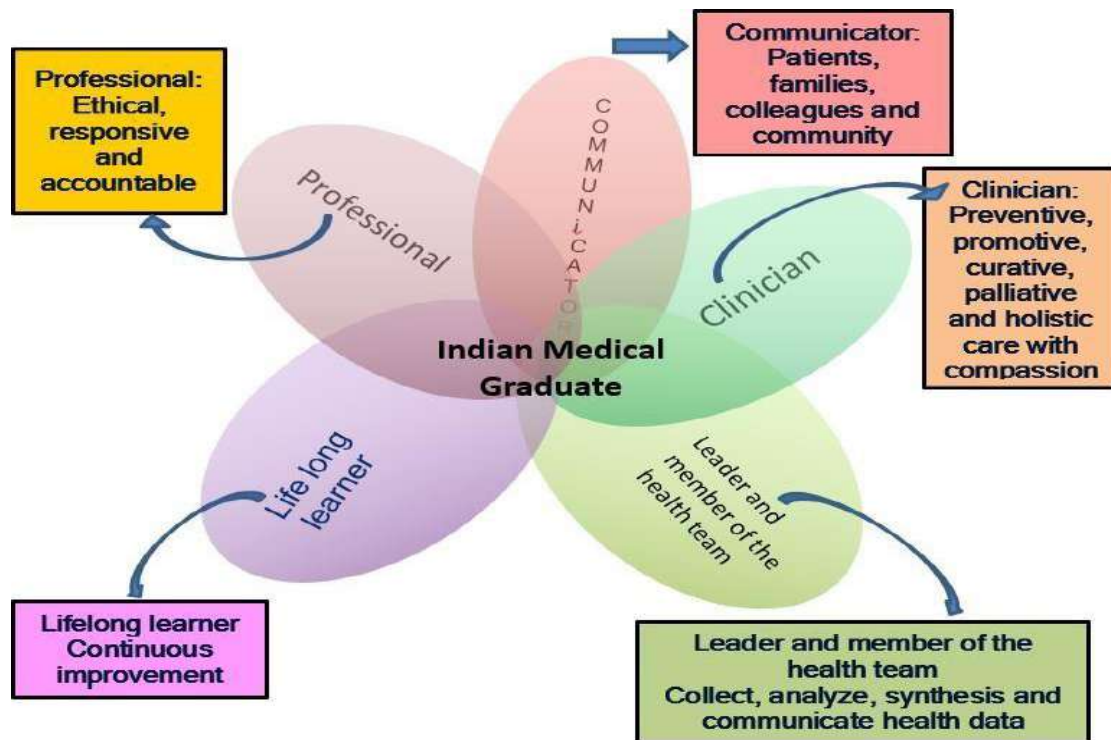
#### Lifelong learner committed to continuous improvement of skills and knowledge

- a. Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.
- b. Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.
- c. Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.
- d. Demonstrate ability to search (including through electronic means), and critically evaluate the medical literature and apply the information in the care of the patient.
- e. Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

#### Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession

- a. Practice selflessness, integrity, responsibility, accountability and respect.
- b. Respect and maintain professional boundaries between patients, colleagues and society.
- c. Demonstrate ability to recognize and manage ethical and professional conflicts.
- d. Abide by prescribed ethical and legal codes of conduct and practice.

- e. Demonstrate a commitment to the growth of the medical profession as a whole.



### 3. Broad Outline on training format

In order to ensure that training is in alignment with the goals and competencies listed in sub-clause 2 above:

- There shall be a "Foundation Course" to orient medical learners to MBBS programme, and provide them with requisite knowledge, communication (including electronic), technical and language skills.
- The curricular contents shall be vertically and horizontally aligned and integrated to the maximum extent possible in order to enhance learner's interest and eliminate redundancy and overlap.
- Teaching-learning methods shall be learner centric and shall predominantly include small group learning, interactive teaching methods and case based learning.
- Clinical training shall emphasize early clinical exposure, skill acquisition, certification in essential skills; community/primary/secondary care-based learning experiences and emergencies.
- Training shall primarily focus on preventive and community based approaches to health and disease, with specific emphasis on national health priorities such as family welfare, communicable and non- communicable diseases including cancer, epidemics and disaster management.

- Acquisition and certification of skills shall be through experiences in patient care, diagnostic and skill laboratories.
- The development of ethical values and overall professional growth as integral part of curriculum shall be emphasized through a structured longitudinal and dedicated programme on professional development including attitude, ethics and communication.
- Progress of the medical learner shall be documented through structured periodic assessment that includes formative and summative assessments. Logs of skill-based training shall be also maintained.
- Appropriate Faculty Development Programmes shall be conducted regularly by institutions to facilitate medical teachers at all levels to continuously update their professional and teaching skills, and align their teaching skills to curricular objectives.

#### **4. Admission to the Indian Medical Graduate Programme**

- No candidate shall be allowed to be admitted to the Medical Curriculum proper of first Bachelor of Medicine and Bachelor of Surgery course until he /she has qualified the National Eligibility Entrance Test, and he/she shall not be allowed to appear for the National Eligibility-Cum- Entrance Test until:
  1. He/she shall complete the age of 17 years on or before 31<sup>st</sup> December of the year of admission to the MBBS.
    - 1.1 He/She has obtained a minimum of marks in National Eligibility-Cum-Entrance Test as prescribed in Clause 5 of Chapter II of NMC (Erstwhile MCI).
    - 1.2 Provided further that in order to be eligible, the upper age limit for candidates appearing for National Eligibility Entrance Test and seeking admission to MBBS programme shall be 25 years as on the date of examination with a relaxation of 5 years for candidates belonging to SC/ST/OBC category and persons entitled for reservation under the Rights of Persons with Disabilities Act, 2016.
- In order to be eligible for admission to MBBS Course for a academic year, it shall be necessary for a candidate to obtain minimum of marks at 50th percentile in 'National Eligibility-cum-Entrance Test to MBBS course' held for the said academic year. However, in respect of candidates belonging to Scheduled Castes, Scheduled Tribes, Other Backward Classes, the minimum marks shall be at 40th percentile. In respect of candidates with benchmark disabilities specified under the Rights of Persons with Disabilities Act, 2016, in terms of Clause 4(3) above, the minimum marks shall be at 45th percentile. The percentile shall be determined on the basis of highest marks secured in the All-India common merit list for admission in 'National Eligibility-cum-Entrance Test for admission to MBBS course.
- Provided when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in National Eligibility-cum-Entrance Test held for any academic year for admission to MBBS Course, the Central Government in consultation with Medical Council of India may at its discretion lower the minimum marks required for admission to MBBS Course for candidates belonging to respective categories and marks

so lowered by the Central Government shall be applicable for the said academic year only.

- The reservation of seats in Medical Colleges for respective categories shall be as per applicable laws prevailing in States/Union Territories. An All India merit list as well as State/Union Territory-wise merit list of the eligible candidates shall be prepared on the basis of marks obtained in 'National Eligibility-cum-Entrance Test and candidates shall be admitted to MBBS course from the said lists only.
- No candidate who has failed to obtain the minimum eligibility marks as prescribed above shall be admitted to MBBS course in the said academic year.
- No authority/institution shall admit any candidate to the MBBS course in contravention of the criteria/procedure as laid down by these Regulations and / or in violation of the judgments passed by the Hon'ble Supreme Court in respect of admissions. Any candidate admitted in contravention/violation of aforesaid shall be discharged by the Council forthwith. The authority / institution which grants admission to any student in contravention / violation of the Regulations and / or the judgments passed by the Hon'ble Supreme Court, shall also be liable to face such action as may be prescribed by the Council, including surrender of seats equivalent to the extent of such admission made from its sanctioned intake capacity for the succeeding academic year/years.
- All admission to MBBS course within the respective categories shall be based solely on the marks obtained in the 'National Eligibility-Cum- Entrance Test.

**Please Note:**

- Admission to MBBS course and enrollment of the student with SVDU will be strictly based on rules in vogue and duly framed by the competent authority i.e Medical Council of India / Government of India / Government of Gujarat/Sumandeep Vidyapeeth.
- Migration of a medical student from college/s of SVDU to any other medical college in India will be strictly on the basis of rules of Medical Council of India to this effect.
- Any rule modified by a competent authority i.e Medical Council of India, duly notified through the Gazette of India will take effect from the date of publication in the Gazette, whether the same is adopted or not by University at the given time.

**5. Migration**

- Migration of students from SBKSMIRC to another medical college may be granted on any genuine ground subject to the availability of vacancy in the college where migration is sought and fulfilling the other requirements laid down in the Regulations. Migration would be restricted to 5% of the sanctioned intake of the college during the year. No migration will be permitted on any ground from one medical college to another located within the same city.
- Migration of students from one College to another is permissible only if both the colleges are recognized by the Central Government under section 11(2) of the Indian Medical Council Act, 1956 and further subject to the condition that it shall not result in increase in the sanctioned intake capacity for the academic year concerned in respect of the receiving medical college.
- The applicant candidate shall be eligible to apply for migration only after qualifying in the first professional MBBS examination. Migration during clinical course of study shall not be allowed on any ground.
- For the purpose of migration an applicant candidate shall first obtain "No Objection Certificate" from the SBKSMIRC where he is studying, and the Sumandeep Vidyapeeth deemed to be



University and also from the college to which the migration is sought and the university to which that college is affiliated. He/She shall submit his application for migration within a period of 1 month of passing (Declaration of result of the 1st Professional MBBS examination) along with the above cited four "No Objection Certificates" to: (a) the Director of Medical Education of the State, if migration is sought from one college to another within the same State or (b) the Medical Council of India, if the migration is sought from one college to another located outside the State.

- A student who has joined another college on migration shall be eligible to appear in the 2<sup>nd</sup> professional MBBS examination only after attaining the minimum attendance in that college in the subjects, lectures, seminars etc. required for appearing in the examination prescribed under Regulation

## **6. Phase Wise Training and Time Distribution for Professional Development**

### **6.1 Training period and time distribution:**

1. Every learner shall undergo a period of certified study extending over 4 ½ academic years, divided into nine semesters from the date of commencement of course to the date of completion of examination which shall be followed by one year of compulsory rotating internship.
2. Each academic year will have at least 240 teaching days with a minimum of eight hours of working on each day including one hour as lunch break.
3. Teaching and learning shall be aligned and integrated across specialties both vertically and horizontally for better learner comprehension. Learner centered learning methods should include problem oriented learning, case studies, community oriented learning, self- directed and experiential learning.
4. The period of 4 ½ years is divided as follows:

- 4.1 Pre-Clinical Phase [(Phase I) - First Professional phase of 13 months preceded by Foundation Course of one month]: will consist of preclinical subjects – Human Anatomy, Physiology, Biochemistry, Introduction to Community Medicine, Evidence-based Education system module-1, Humanities, Professional development including Attitude, Ethics & Communication (AETCOM) module and early clinical exposure, ensuring both horizontal and vertical integration.

*To introduce Basic life support (BLS) training for all the first year MBBS students, for the duration of 8 hours from academic year 2017-18. (Board of Studies letter no.: SBKSMIRC/Dean/1777(A)/2017, dated 28/11/2017 and Vide Notification of Board of Management Resolution Ref: No.SV/8813/2017-18 dated 06/04/2018.*

- 4.2 Para-clinical phase [(Phase II) - Second Professional (12 months)]: will consist of Para-clinical subjects namely Pathology, Pharmacology, Microbiology, Community Medicine, Forensic Medicine and Toxicology, Evidence-based Education system module-2, Professional development including Attitude, Ethics & Communication (AETCOM) module and introduction to clinical subjects ensuring both horizontal and vertical integration.

- The clinical exposure to learners will be in the form of learner-doctor method of clinical training in all phases. The emphasis will be on primary, preventive and comprehensive health care. A part of training during clinical postings should take place at the *primary level* of health care. It is

desirable to provide learning experiences in secondary health care, wherever possible. This will involve:

- (a) Experience in recognizing and managing common problems seen in outpatient, inpatient and emergency settings,
- (b) Involvement in patient care as a team member,
- (c) Involvement in patient management and performance of basic procedures.

#### 4.3 Clinical Phase – [(Phase III) Third Professional (28 months)]

4.3.1 Part I (13 months) - The clinical subjects include General Medicine, General Surgery, Obstetrics & Gynaecology, Pediatrics, Orthopaedics, Dermatology, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Psychiatry, Respiratory Medicine, Radiodiagnosis & Radiotherapy and Anaesthesiology, Evidence-based Education system module-3 Professional development including AETCOM module.

4.3.2 Electives (2 months) - To provide learners with opportunity for diverse learning experiences, to do research/community projects that will stimulate enquiry, self directed experimental learning and lateral thinking.

4.3.3 Part II (13 months) - Clinical subjects include:

4.3.3.1 Medicine and allied specialties (General Medicine, Psychiatry, Dermatology Venereology and Leprosy (DVL), Respiratory Medicine including Tuberculosis)

4.3.3.2 Surgery and allied specialties (General Surgery, Orthopedics [including trauma]), Dentistry, Physical Medicine and rehabilitation, Anaesthesiology and Radiodiagnosis)

4.3.3.3 Obstetrics and Gynecology (including Family Welfare)

4.3.3.4 Pediatrics

4.3.3.5 AETCOM module

4.3.3.6 Evidence-based Education system module-4

5. Didactic lectures shall not exceed one third of the schedule; two third of the schedule shall include interactive sessions, practicals, clinical or/and group discussions. The learning process should include clinical experiences, problem oriented approach, case studies and community health care activities.

6. Universities shall organize admission timing and admission process in such a way that teaching in the first Professional year commences with induction through the Foundation Course by the 1<sup>st</sup> of August of each year.

6.1 Supplementary examinations shall not be conducted later than 90 days from the date of declaration of the results of the main examination, so that the learners who pass can join the main batch for progression and the remainder would appear for the examination in the subsequent year.

6.2 A learner shall not be entitled to graduate later than ten (10) years of her/his joining the first MBBS course.

7. No more than four attempts shall be allowed for a candidate to pass the first

Professional examination. The total period for successful completion of first Professional course shall not exceed four (4) years. Partial attendance of examination in any subject shall be counted as an attempt.

8. A learner, who fails in the second Professional examination, shall not be allowed to appear in third Professional Part I examination unless she/he passes all subjects of second Professional examination.
9. Passing in third Professional (Part I) examination is not compulsory before starting part II training; however, passing of third Professional (Part I) is compulsory for being eligible for third Professional (Part II) examination.
10. During para-clinical and clinical phases, including prescribed 2 months of electives, clinical postings of three hours duration daily as specified in Tables 5, 6, 7 and 8 would apply for various departments.

**Note: Please refer to the Annexure-1 Evidence Based Education System Module**

## 6.2 Phase distribution and timing of examination

6.2.1 Time distribution of the MBBS programme is given in Table 1.

**Table 1: Time distribution of MBBS Programme & Examination Schedule**

Table 1: Time distribution of MBBS Programme & Examination Schedule											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
							Foundation Course	I MBBS			
I MBBS								Exam I MBBS	II MBBS		
II MBBS								Exam II MBBS	III MBBS		
III MBBS Part I									Exam III MBBS Part I	Electives & Skills	
III MBBS Part II											
Exam III MBBS Part II		Internship									
Internship											

- One month is provided at the end of every professional year for completion of examination and declaration of results.

6.2.2 Distribution of subjects by Professional Phase-wise is given in Table 2.

**Table 2: Distribution of subjects by Professional Phase**

Phase & year of MBBS training	Subjects & New Teaching Elements	Duration#	University examination
First Professional MBBS	<ul style="list-style-type: none"> <li>Foundation Course (1 month)</li> <li>Human Anatomy, Physiology &amp; Biochemistry, introduction to Community Medicine, Humanities</li> <li>Early Clinical Exposure</li> </ul>	1 + 13 months	I Professional
	<ul style="list-style-type: none"> <li>Attitude, Ethics, and Communication Module (AETCOM)</li> </ul>		
Second Professional MBBS	<ul style="list-style-type: none"> <li>Pathology, Microbiology, Pharmacology, Forensic Medicine and Toxicology,</li> <li>Introduction to clinical subjects including Community Medicine</li> <li>Clinical postings</li> <li>Attitude, Ethics &amp; Communication Module (AETCOM)</li> </ul>	12 months	II Professional
Third Professional MBBS Part I	<ul style="list-style-type: none"> <li>General Medicine, General Surgery, Obstetrics &amp; Gynecology, Pediatrics, Orthopedics, Dermatology, Psychiatry, Otorhinolaryngology, Ophthalmology, Community Medicine, Forensic Medicine and Toxicology, Respiratory medicine, Radiodiagnosis &amp; Radiotherapy, Anesthesiology</li> <li>Clinical subjects /postings</li> <li>Attitude, Ethics &amp; Communication Module (AETCOM)</li> </ul>	13 months	III Professional (Part I)
Electives	<ul style="list-style-type: none"> <li>Electives, Skills and assessment*</li> </ul>	2 months	
Third Professional MBBS Part II	<ul style="list-style-type: none"> <li>General Medicine, Pediatrics, General Surgery, Orthopedics, Obstetrics and Gynecology including Family welfare and allied specialties</li> <li>Clinical postings/subjects</li> <li>Attitude, Ethics &amp; Communication Module (AETCOM)</li> </ul>	13 months	III Professional (Part II)

\*Assessment of electives shall be included in Internal Assessment.

6.2.3 Minimum teaching hours prescribed in various disciplines are as under Tables 3-7.

**Table 3: Foundation Course (one month)**

Subjects/ Contents	Teaching hours	Self Directed Learning (hours)	Total hours
Orientation <sup>1</sup>	30	0	30
Skills Module <sup>2</sup>	35	0	35
Field visit to Community Health Center	8	0	8

Introduction to Professional Development & AETCOM module	-	-	40
Sports and extracurricular activities	22	0	22
Enhancement of language/ computer skills <sup>3</sup>	40	0	40
	-	-	175

1. Orientation course will be completed as single block in the first week and will contain elements outlined in Annexure-2
2. Skills modules will contain elements outlined in Annexure-2.
3. Based on perceived need of learners, one may choose language enhancement (English or local spoken or both) and computer skills. This should be provided longitudinally through the duration of the Foundation Course. Teaching of Foundation Course will be organized by pre-clinical departments.

**Table 4: First Professional teaching hours**

Subjects	Lectures (hours)	Small Group Teaching/ Tutorials/ Integrated learning/ Practical (hours)	Self directed learning (hours)	Total (hours)
Human Anatomy	220	415	40	675
Physiology*	160	310	25	495
Biochemistry	80	150	20	250
Early Clinical Exposure**	90	-	0	90
Community Medicine	20	27	5	52
Attitude, Ethics & Communication Module (AETCOM) ***	-	26	8	34
Sports and extracurricular activities	-	-	-	60
Formative assessment and Term examinations	-	-	-	80
Total	-	-	-	1736

\*including Molecular Biology.

\*\* Early clinical exposure hours to be divided equally in all three subjects.

\*\*\* AETCOM module shall be a longitudinal programme.

**Table 5: Second Professional teaching hours**

Subjects	Lectures (hours)	Small group learning (Tutorials / Seminars) /Integrated learning (hours)	Clinical Postings (hours) *	Self - Directed Learning (hours)	Total (hours)
Pathology	80	138	-	12	230

Pharmacology	80	138	-	12	230
Microbiology	70	110	-	10	190
Community Medicine	20	30	-	10	60
Forensic Medicine and Toxicology	15	30	-	5	50
Clinical Subjects	75**	-	540***		615
Attitude, Ethics & Communication Module (AETCOM)		29	-	8	37
Sports and extracurricular activities	-	-	-	28	28
Total	-	-	-	-	1440

\* At least 3 hours of clinical instruction each week must be allotted to training in clinical and procedural skill laboratories. Hours may be distributed weekly or as a block in each posting based on institutional logistics.

\*\* 25 hours each for Medicine, Surgery and Gynecology & Obstetrics.

\*\*\*The clinical postings in the second professional shall be 15 hours per week (3 hrs per day from Monday to Friday).

**Table 6: Third Professional Part I teaching hours**

Subjects	Teaching Hours	Tutorials/ Seminars /Integrated Teaching (hours)	Self-Directed Learning (hours)	Total (hours)
General Medicine	25	35	5	65
General Surgery	25	35	5	65
Obstetrics and Gynecology	25	35	5	65
Pediatrics	20	30	5	55
Orthopaedics	15	20	5	40
Forensic Medicine and Toxicology	25	45	5	75
Community Medicine	40	60	5	105
Dermatology	20	5	5	30
Psychiatry	25	10	5	40
Respiratory Medicine	10	8	2	20
Otorhinolaryngology	25	40	5	70
Ophthalmology	30	60	10	100
Radiodiagnosis and Radiotherapy	10	8	2	20
Anesthesiology	8	10	2	20
Clinical Postings*	-	-	-	756
Attitude, Ethics & Communication Module (AETCOM)		19	06	25
Total	303	401	66	1551

\* The clinical postings in the third professional part I shall be 18 hours per week (3 hrs per day from Monday to Saturday).

**Table 7: Third Professional Part II teaching hours**

Subjects	Teaching Hours	Tutorials/Seminars / Integrated Teaching (hours)	Self - Directed Learning (hours)	Total* (hours)
General Medicine	70	125	15	210
General Surgery	70	125	15	210
Obstetrics and Gynecology	70	125	15	210
Pediatrics	20	35	10	65
Orthopaedics	20	25	5	50
Clinical Postings**				792
Attitude, Ethics & Communication Module (AETCOM)***	28		16	43
Electives				200
Total	250	435	60	1780

\* 25% of allotted time of third professional shall be utilized for integrated learning with pre- and para- clinical subjects and shall be assessed during the clinical subjects examination. This allotted time will be utilized as integrated teaching by para-clinical subjects with clinical subjects (as Clinical Pathology, Clinical Pharmacology and Clinical Microbiology).

\*\* The clinical postings in the third professional part II shall be 18 hours per week (3 hrs per day from Monday to Saturday).

\*\*\* Hours from clinical postings can also be used for AETCOM modules.

6.2.4 Distribution of clinical postings is given in Table 8.

**Table 8: Clinical postings**

Subjects	Period of training in weeks			Total weeks
	II MBBS	III MBBS Part I	III MBBS Part II	
Electives	-	-	8* (4 regular clinical posting)	4
General Medicine <sup>1</sup>	4	4	8+4	20
General Surgery	4	4	8+4	20
Obstetrics & Gynaecology <sup>2</sup>	4	4	8 +4	20
Pediatrics	2	4	4	10
Community Medicine	4	6	-	10
Orthopedics - including Trauma <sup>3</sup>	2	4	2	8
Otorhinolaryngology	4	4	-	8

Ophthalmology	4	4	-	8
Respiratory Medicine	2	-	-	2
Psychiatry	2	2	-	4
Radiodiagnosis <sup>4</sup>	2	-	-	2
Dermatology, Venereology & Leprosy	2	2	2	6
Dentistry & Anesthesia	-	2	-	2
Casualty	-	2	-	2
	36	42	48	126

\* In four of the eight weeks of electives, regular clinical postings shall be accommodated. Clinical postings may be adjusted within the time framework.

<sup>1</sup> This posting includes Laboratory Medicine (Para-clinical) & Infectious Diseases (Phase III Part I).

<sup>2</sup> This includes maternity training and family welfare (including Family Planning).

<sup>3</sup> This posting includes Physical Medicine and Rehabilitation.

<sup>4</sup> This posting includes Radiotherapy, wherever available.

#### 6.2.5 Duration of clinical postings will be:

6.2.5.1 Second Professional : 36 weeks of clinical posting (Three hours per day - five days per week : Total 540 hours)

6.2.5.2 Third Professional part I: 42 weeks of clinical posting (Three hours per day - six days per week : Total 756 hours)

6.2.5.3 Third Professional part II: 44 weeks of clinical posting (Three hours per day - six days per week : Total 792 hours)

6.2.6 Time allotted excludes time reserved for internal / University examinations, and vacation.

**6.3** Second professional clinical postings shall commence before / after declaration of results of the first professional phase examinations, as decided by the institution/ University. Third Professional parts I and part II clinical postings shall start no later than two weeks after the completion of the previous professional examination.

**6.4** 25% of allotted time of third Professional shall be utilized for integrated learning with pre- and para- clinical subjects. This will be included in the assessment of clinical subjects.

- One month is provided at the end of every professional year for completion of examination and declaration of results.

## 7. New teaching / learning elements

### 7.1 Foundation Course

**Goal:** The goal of the Foundation Course is to prepare a learner to study medicine



effectively. It will be of one month duration after admission.

**(Refer Annexure-2 for Foundation Course Module)**

### **7.2 Early Clinical Exposure**

**Objectives:** The objectives of early clinical exposure of the first-year medical learners are to enable the learner to:

**(Refer Annexure-3 for Early clinical exposure module)**

### **7.3 Electives**

**Objectives:** To provide the learner with opportunities:

- For diverse learning experiences,
- To do research/community projects that will stimulate enquiry, self-directed, experiential learning and lateral thinking.

**(Refer Annexure-4 for Elective Module)**

### **7.4 Professional Development including Attitude, Ethics and Communication Module (AETCOM)**

**Objectives** of the programme: At the end of the programme, the learner must demonstrate ability to:

- understand and apply principles of bioethics and law as they apply to medical practice and research, understand and apply the principles of clinical reasoning as they apply to the care of the patients,
- understand and apply the principles of system based care as they relate to the care of the patient,
- understand and apply empathy and other human values to the care of the patient,
- communicate effectively with patients, families, colleagues and other health care professionals,
- understand the strengths and limitations of alternative systems of medicine,
- respond to events and issues in a professional, considerate and humane fashion,
- translate learning from the humanities in order to further his / her professional and personal growth.

**(Refer Annexure-5 for AETCOM module)**

### **7.5 Learner-doctor method of clinical training (Clinical Clerkship)**

**Goal:** To provide learners with experience in:

- Longitudinal patient care,
- Being part of the health care team,
- Hands-on care of patients in outpatient and inpatient setting.

**Structure:**

- The first clinical posting in second professional shall orient learners to the patient, their roles and the specialty.
- The learner-doctor programme will progress as outlined in Table 9.

- The learner will function as a part of the health care team with the following responsibilities:
  - ✓ Be part of the unit's outpatient services on admission days,
  - ✓ Remain with the admission unit until 6 PM except during designated class hours,
  - ✓ Be assigned patients admitted during each admission day for whom he/she will undertake responsibility, under the supervision of a senior resident or faculty member,
  - ✓ Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
  - ✓ Follow the patient's progress throughout the hospital stay until discharge,
  - ✓ Participate, under supervision, in procedures, surgeries, deliveries etc. of assigned patients (according to responsibilities outlined in table 9),
  - ✓ Participate in unit rounds on at least one other day of the week excluding the admission day,
  - ✓ Discuss ethical and other humanitarian issues during unit rounds,
  - ✓ Attend all scheduled classes and educational activities,
  - ✓ Document his/her observations in a prescribed log book / case record.

***No learner will be given independent charge of the patient***

- The supervising physician will be responsible for all patient care decisions

***Assessment:***

- A designated faculty member in each unit will coordinate and facilitate the activities of the learner, monitor progress, provide feedback and review the log book/ case record.
- The log book/ case record must include the written case record prepared by the learner including relevant investigations, treatment and its rationale, hospital course, family and patient discussions, discharge summary etc.
- The log book should also include records of outpatients assigned. Submission of the log book/ case record to the department is required for eligibility to appear for the final examination of the subject.

***Table 9: Learner - Doctor Programme (Clinical Clerkship)***

Year of Curriculum	Focus of Learner - Doctor programme
Year 1	Introduction to hospital environment, early clinical exposure, understanding perspectives of illness
Year 2	History taking, physical examination, assessment of change in clinical status, communication and patient education
Year 3	All of the above and choice of investigations, basic procedures and continuity of care
Year 4	All of the above and decision making, management and outcomes

## 8. Competency Based Curriculum of The Indian Medical Graduate Programme

*Please refer to the Annexure-6, 7 and 8 for UG competency based curriculum Volume-I, II and III respectively*

### ➤ **Subject-wise competencies**

### ➤ **Pre-clinical Subjects**

#### **1. Human Anatomy**

(a) **Competencies:** The undergraduate must demonstrate:

1. Understanding of the gross and microscopic structure and development of human body,
2. Comprehension of the normal regulation and integration of the functions of the organs and systems on basis of the structure and genetic pattern,
3. Understanding of the clinical correlation of the organs and structures involved and interpret the anatomical basis of the disease presentations.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems with clinical correlation that will provide a context for the learner to understand the relationship between structure and function and interpret the anatomical basis of various clinical conditions and procedures.

#### **2. Physiology**

(a) **Competencies:** The undergraduates must demonstrate:

1. Understanding of the normal functioning of the organs and organ systems of the body,
2. Comprehension of the normal structure and organization of the organs and systems on basis of the functions,
3. Understanding of age-related physiological changes in the organ functions that reflect normal growth and development,
4. Understand the physiological basis of diseases.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems in order to provide a context in which normal function can be correlated both with structure and with the biological basis, its clinical features, diagnosis and therapy.

#### **3. Biochemistry**

**The course will comprise Molecular and Cellular Biochemistry.**

(a) **Competencies:** The learner must demonstrate an understanding of:

1. Biochemical and molecular processes involved in health and disease,
2. Importance of nutrition in health and disease,
3. Biochemical basis and rationale of clinical laboratory tests, and demonstrate ability to interpret these in the clinical context.

- (b) **Integration:** The teaching/learning programme should be integrated horizontally and vertically, as much as possible, to enable learners to make clinical correlations and to acquire an understanding of the cellular and molecular basis of health and disease.

#### **4. Introduction to Community Medicine**

- (a) **Competencies:** The undergraduate must demonstrate:

1. Understanding of the concept of health and disease,
2. Understanding of demography, population dynamics and disease burden in National and global context,
3. Comprehension of principles of health economics and hospital management,
4. Understanding of interventions to promote health and prevent diseases as envisioned in National and State Health Programmes.

### ➤ **Second Professional (Para-Clinical)**

#### **5. Pathology**

- (a) **Competencies:** The undergraduate must demonstrate:

1. Comprehension of the causes, evolution and mechanisms of diseases,
2. Knowledge of alterations in gross and cellular morphology of organs in disease states,
3. Ability to correlate the natural history, structural and functional changes with the clinical manifestations of diseases, their diagnosis and therapy,

- (b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems recognizing deviations from normal structure and function and clinically correlated so as to provide an overall understanding of the etiology, mechanisms, laboratory diagnosis, and management of diseases.

#### **6. Microbiology**

- (a) **Competencies:** The undergraduate learner demonstrate:

1. Understanding of role of microbial agents in health and disease,
2. Understanding of the immunological mechanisms in health and disease,
3. Ability to correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents,
4. Knowledge of the principles and application of infection control measures,
5. An understanding of the basis of choice of laboratory diagnostic tests and their interpretation, antimicrobial therapy, control and prevention of infectious diseases.

- (b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems with emphasis on host-microbe-environment interactions and their alterations in disease and clinical correlations so as to provide an overall understanding of the etiological agents, their laboratory diagnosis and prevention.

## **7. Pharmacology**

(a) **Competencies:** The undergraduate must demonstrate:

1. Knowledge about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics,
2. Ability to select and prescribe medicines based on clinical condition and the pharmacologic properties, efficacy, safety, suitability and cost of medicines for common clinical conditions of national importance,
3. Knowledge of pharmacovigilance, essential medicine concept and sources of drug information and industry-doctor relationship,
4. Ability to counsel patients regarding appropriate use of prescribed drug and drug delivery systems.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems recognizing the interaction between drug, host and disease in order to provide an overall understanding of the context of therapy.

## **8. Forensic Medicine and Toxicology**

(a) **Competencies:** The learner must demonstrate:

1. Understanding of medico-legal responsibilities of physicians in primary and secondary care settings,
2. Understanding of the rational approach to the investigation of crime, based on scientific and legal principles,
3. Ability to manage medical and legal issues in cases of poisoning / overdose,
4. Understanding the medico-legal framework of medical practice and medical negligence,
5. Understanding of codes of conduct and medical ethics.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically recognizing the importance of medico-legal, ethical and toxicological issues as they relate to the practice of medicine.

## **9. Community Medicine – as mentioned above**

### **➤ Third Professional (Part I)**

## **10. General Medicine**

(a) **Competencies:** The student must demonstrate ability to do the following in relation to common medical problems of the adult in the community:

1. Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management,
2. Competently interview and examine an adult patient and make a clinical diagnosis,
3. Appropriately order and interpret laboratory tests,
4. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive

measures,

5. Follow up of patients with medical problems and refer whenever required,
  6. Communicate effectively, educate and counsel the patient and family,
  7. Manage common medical emergencies and refer when required,
  8. Independently perform common medical procedures safely and understand patient safety issues.
- (b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide sound biologic basis and incorporating the principles of general medicine into a holistic and comprehensive approach to the care of the patient.

## **11. General Surgery**

- (a) **Competencies:** The student must demonstrate:
1. Understanding of the structural and functional basis, principles of diagnosis and management of common surgical problems in adults and children,
  2. Ability to choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition,
  3. Ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in surgical practice,
  4. Knowledge of common malignancies in India and their prevention, early detection and therapy,
  5. Ability to perform common diagnostic and surgical procedures at the primary care level,
  6. Ability to recognize, resuscitate, stabilize and provide Basic & Advanced Life Support to patients following trauma,
  7. Ability to administer informed consent and counsel patient prior to surgical procedures,
  8. Commitment to advancement of quality and patient safety in surgical practice.
- (b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide a sound biologic basis and a holistic approach to the care of the surgical patient.

## **12. Obstetrics and Gynaecology**

- (a) **Competencies in Obstetrics:** The student must demonstrate ability to:
1. Provide peri-conceptional counseling and antenatal care,
  2. Identify high-risk pregnancies and refer appropriately,
  3. Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings,
  4. Prescribe drugs safely and appropriately in pregnancy and lactation,
  5. Diagnose complications of labor, institute primary care and refer in a timely manner,

6. Perform early neonatal resuscitation,
7. Provide postnatal care, including education in breast-feeding,
8. Counsel and support couples in the correct choice of contraception,
9. Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient,
10. Apply medico-legal principles as they apply to tubectomy, Medical Termination of Pregnancy (MTP), Pre-conception and Prenatal Diagnostic Techniques (PC PNDT Act) and other related Acts.

**Competencies in Gynecology:** The student must demonstrate ability to:

1. Elicit a gynecologic history, perform appropriate physical and pelvic examinations and PAP smear in the primary care setting,
  2. Recognize, diagnose and manage common reproductive tract infections in the primary care setting,
  3. Recognize and diagnose common genital cancers and refer them appropriately.
- (b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for women in their reproductive years and beyond, based on a sound knowledge of structure, functions and disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.

### **13. Pediatrics**

(a) **Competencies:** The student must demonstrate:

1. Ability to assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal,
2. Ability to recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be appropriate,
3. Ability to perform procedures as indicated for children of all ages in the primary care setting,
4. Ability to recognize children with special needs and refer appropriately,
5. Ability to promote health and prevent diseases in children,
6. Ability to participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy,
7. Ability to communicate appropriately and effectively.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for neonates, infants, children and adolescents based on a sound knowledge of growth, development, disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.

### **14. Orthopaedics (including Trauma)**

(a) **Competencies:** The student must demonstrate:

1. Ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral,
  2. Knowledge of the medico-legal aspects of trauma,
  3. Ability to recognize and manage common infections of bone and joints in the primary care setting,
  4. Recognize common congenital, metabolic, neoplastic, degenerative and inflammatory bone diseases and refer appropriately,
  5. Ability to perform simple orthopaedic techniques as applicable to a primary care setting,
  6. Ability to recommend rehabilitative services for common orthopaedic problems across all ages.
- (b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of orthopaedic problems, their management and correlation with function, rehabilitation and quality of life.

**15. Forensic Medicine and Toxicology – as mentioned above.**

**16. Community medicine**

- (a) **Competencies:** The learner must demonstrate:
1. Understanding of physical, social, psychological, economic and environmental determinants of health and disease,
  2. Ability to recognize and manage common health problems including physical, emotional and social aspects at individual family and community level in the context of National Health Programmes,
  3. Ability to Implement and monitor National Health Programmes in the primary care setting,
  4. Knowledge of maternal and child wellness as they apply to national health care priorities and programmes,
  5. Ability to recognize, investigate, report, plan and manage community health problems including malnutrition and emergencies.
- (b) **Integration:** The teaching should be aligned and integrated **horizontally** and vertically in order to allow the learner to understand the impact of environment, society and national health priorities as they relate to the promotion of health and prevention and cure of disease.

**17. Dermatology, Venereology & Leprosy**

- (a) **Competencies:** The undergraduate student must demonstrate:
1. Understanding of the principles of diagnosis of diseases of the skin, hair, nail and mucosa,
  2. Ability to recognize, diagnose, order appropriate investigations and treat common diseases of the skin including leprosy in the primary care setting and refer as appropriate,
  3. A syndromic approach to the recognition, diagnosis, prevention, counseling,



testing and management of common sexually transmitted diseases including HIV based on national health priorities,

4. Ability to recognize and treat emergencies including drug reactions and refer as appropriate.
- (b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to emphasize the biologic basis of diseases of the skin, sexually transmitted diseases and leprosy and to provide an understanding that skin diseases may be a manifestation of systemic disease.

## **18. Psychiatry**

(a) **Competencies:** The student must demonstrate:

1. Ability to promote mental health and mental hygiene,
2. Knowledge of etiology (bio-psycho-social-environmental interactions), clinical features, diagnosis and management of common psychiatric disorders across all ages,
3. Ability to recognize and manage common psychological and psychiatric disorders in a primary care setting, institute preliminary treatment in disorders difficult to manage, and refer appropriately,
4. Ability to recognize alcohol/ substance abuse disorders and refer them to appropriate centers,
5. Ability to assess risk for suicide and refer appropriately,
6. Ability to recognize temperamental difficulties and personality disorders,
7. Assess mental disability and rehabilitate appropriately,
8. Understanding of National and State programmes that address mental health and welfare of patients and community.

- (b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand bio-psycho-social-environmental interactions that lead to diseases/ disorders for preventive, promotive, curative, rehabilitative services and medico-legal implications in the care of patients both in family and community.

## **19. Respiratory Medicine**

(a) **Competencies:** The student must demonstrate:

1. Knowledge of common chest diseases, their clinical manifestations, diagnosis and management,
2. Ability to recognize, diagnose and manage pulmonary tuberculosis as contemplated in National Tuberculosis Control programme,
3. Ability to manage common respiratory emergencies in primary care setting and refer appropriately.

- (b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to recognize diagnose and treat TB in the context of the society, national health priorities, drug resistance and co-morbid conditions like HIV.

## **20. Otorhinolaryngology**

(a) **Competencies:** The learner must demonstrate:

1. Knowledge of the common Otorhinolaryngological (ENT) emergencies and problems,
2. Ability to recognize, diagnose and manage common ENT emergencies and problems in primary care setting,
3. Ability to perform simple ENT procedures as applicable in a primary care setting,
4. Ability to recognize hearing impairment and refer to the appropriate hearing impairment rehabilitation programme.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the learner to understand the structural basis of ENT problems, their management and correlation with function, rehabilitation and quality of life.

## **21. Ophthalmology**

(a) **Competencies:** The student must demonstrate:

1. Knowledge of common eye problems in the community
2. Recognize, diagnose and manage common eye problems and identify indications for referral,
3. Ability to recognize visual impairment and blindness in the community and implement National programmes as applicable in the primary care setting.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of ophthalmologic problems, their management and correlation with function, rehabilitation and quality of life.

## **22. A. Radiodiagnosis**

(a) **Competencies:** The student must demonstrate:

1. Understanding of indications for various radiological investigations in common clinical practice,
2. Awareness of the ill effects of radiation and various radiation protective measures to be employed,
3. Ability to identify abnormalities in common radiological investigations.

(b) **Integration:** Horizontal and vertical integration to understand the fundamental principles of radiologic imaging, anatomic correlation and their application in diagnosis and therapy.

## **22. B. Radiotherapy**

(a) **Competencies:** The student must demonstrate understanding of:

1. Clinical presentations of various cancers,
2. Appropriate treatment modalities for various types of malignancies,
3. Principles of radiotherapy and techniques.

(b) **Integration:** Horizontal and vertical integration to enable basic understanding

of fundamental principles of radio-therapeutic procedures.

### **23. Anaesthesiology**

(a) **Competencies in Anaesthesiology:** The student must demonstrate ability to:

1. Describe and discuss the pre-operative evaluation, assessing fitness for surgery and the modifications in medications in relation to anaesthesia / surgery,
2. Describe and discuss the roles of Anaesthesiologist as a peri-operative physician including pre-medication, endotracheal intubation, general anaesthesia and recovery (including variations in recovery from anaesthesia and anaesthetic complications),
3. Describe and discuss the management of acute and chronic pain, including labour analgesia,
4. Demonstrate awareness about the maintenance of airway in children and adults in various situations,
5. Demonstrate the awareness about the indications, selection of cases and execution of cardio- pulmonary resuscitation in emergencies and in the intensive care and high dependency units,
6. Choose cases for local / regional anaesthesia and demonstrate the ability to administer the same,
7. Discuss the implications and obtain informed consent for various procedures and to maintain the documents.

(b) **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for patients undergoing various surgeries, in patients with pain, in intensive care and in cardio respiratory emergencies. Integration with the preclinical department of Anatomy, para- clinical department of Pharmacology and horizontal integration with any/all surgical specialities is proposed.

#### ➤ **Third Professional (Part II)**

1. **General Medicine** – as mentioned above
2. **General Surgery** – as mentioned above
3. **Obstetrics & Gynaecology** – as mentioned above
4. **Pediatrics** – as mentioned above
5. **Orthopaedics** – as mentioned above

### **9. Assessment (Also refer Annexure-9 Assessment Module)**

#### **9.1. Eligibility to appear for Professional examinations**

9.1.1 The performance in essential components of training are to be assessed, based on:

##### *(a) Attendance*

- (i) Attendance requirements are 75% in theory and 80% in practical /clinical for eligibility to appear for the examinations in that subject. In subjects that are taught in more than one phase – the learner must have 75% attendance in theory and 80% in practical in each phase of instruction in

that subject.

(ii) If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the candidate must have 75% attendance in each subject and 80% attendance in each clinical posting.

(iii) Learners who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination.

- (b) Internal Assessment: Internal assessment shall be based on day-to-day assessment. It shall relate to different ways in which learners participate in learning process including assignments, preparation for seminar, clinical case presentation, preparation of clinical case for discussion, clinical case study/problem solving exercise, participation in project for health care in the community, proficiency in carrying out a practical or a skill in small research project, a written test etc.
1. Regular periodic examinations shall be conducted throughout the course. There shall be no less than three internal assessment examinations in each Preclinical / Para-clinical subject and no less than two examinations in each clinical subject in a professional year. An end of posting clinical assessment shall be conducted for each clinical posting in each professional year.
  2. Sumandeep Vidyapeeth deemed to be University has introduced Continuous Cumulative Evaluation System (CCES) (Day to Day evaluation) system and periodic examination in order to evaluate a student's performance, his progression in learning and determining eligibility to appear in university examination based on NMC (Erstwhile MCI) regulation. Keeping with the statutory council regulation and recommendation for Internal Eligibility marks, constituent institute of SVDU, devised the computation of internal marks as under: Weightage of CCES in internal exam is 40% in both theory and practical.
  3. When subjects are taught in more than one phase, the internal assessment must be done in each phase and must contribute proportionately to final assessment. For example, General Medicine must be assessed in second Professional, third Professional Part I and third Professional Part II, independently.
  4. Day to day records and log book (including required skill certifications) should be given importance in internal assessment. Internal assessment should be based on competencies and skills.
  5. The final internal assessment in a broad clinical specialty (e.g., Surgery and allied specialties etc.) shall comprise of marks from all the constituent specialties. The proportion of the marks for each constituent specialty shall be determined by the time of instruction allotted to each.
  6. Learners must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in a particular subject in order to be eligible for appearing at the final University examination of that subject. Internal assessment marks will reflect as separate head of passing at the summative examination.

7. The results of internal assessment should be displayed on the notice board within a 1-2 weeks of the test. Universities shall guide the colleges regarding formulating policies for remedial measures for students who are either not able to score qualifying marks or have missed on some assessments due to any reason.
8. Learners must have completed the required certifiable competencies for that phase of training and completed the log book appropriate for that phase of training to be eligible for appearing at the final university examination of that subject.

## **9.2 University Examination**

- 9.2.1 University examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary knowledge, minimal level of skills, ethical and professional values with clear concepts of the fundamentals which are necessary for him/her to function effectively and appropriately as a physician of first contact. Assessment shall be carried out on an objective basis to the extent possible.
- 9.2.2 Nature of questions will include different types such as structured essays (Long Answer Questions - LAQ), Short Answers Questions (SAQ) and objective type questions (e.g. Multiple Choice Questions - MCQ). Marks for each part should be indicated separately. MCQs shall be accorded a weightage of not more than 20% of the total theory marks. In subjects that have two papers, the learner must secure at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass.
- 9.2.3 Practical/clinical examinations will be conducted in the laboratories and /or hospital wards. The objective will be to assess proficiency and skills to conduct experiments, interpret data and form logical conclusion. Clinical cases kept in the examination must be common conditions that the learner may encounter as a physician of first contact in the community. Selection of rare syndromes and disorders as examination cases is to be discouraged. Emphasis should be on candidate's capability to elicit history, demonstrate physical signs, write a case record, analyze the case and develop a management plan.
- 9.2.4 Viva/oral examination should assess approach to patient management, emergencies, attitudinal, ethical and professional values. Candidate's skill in interpretation of common investigative data, X-rays, identification of specimens, ECG, etc. is to be also assessed.
- 9.2.5 There shall be one main examination in an academic year and a supplementary to be held not later than 90 days after the declaration of the results of the main examination.
- 9.2.6 A learner shall not be entitled to graduate after 10 years of his/her joining of the first part of the MBBS course.

9.2.7 University Examinations shall be held as under:

**9.2.7.1 First Professional**

- The first Professional examination shall be held at the end of first Professional training (1+12 months), in the subjects of Human Anatomy, Physiology and Biochemistry.
- A maximum number of four permissible attempts would be available to clear the first Professional University examination, whereby the first Professional course will have to be cleared within 4 years of admission to the said course. Partial attendance at any University examination shall be counted as an availed attempt.
- **Evidence-based Education System (EBES)**

Theory Paper – I	30 marks
Assignments	20 marks
<b>TOTAL</b>	<b>50 marks</b>

**Notes:-**

1. It is compulsory for a student to take the examination of EBES.
2. Paper shall be of one hour duration containing following uniform pattern in all the phases:

Question No	Type of question	Marks
1	Short notes (2 out of 3)	2x5= 10
2	Descriptive type/ application type/ Problem solving type question	1x5=5
3	Short answer question (5 out of 6)	5x2=10
4	MCQs (five MCQs)	5x1=5
<b>Total</b>		<b>30</b>

3. 20 marks will be assigned from assignment/project work done during the year.
4. Marking for assignments will be done as per Check list which will be preserved for one year in the department.
5. The grading pattern that will reflect in the marks statement derived from marks obtained from total 50 marks (20 internal + 30 university theory exam).

Marks obtained	Grade
41 to 50	A+
31 to 40	A
21 to 30	B+
11 to 20	B
1 to 10	C

**9.2.7.2 Second Professional**

- The second Professional examination shall be held at the end of second

professional training (11 months), in the subjects of Pathology, Microbiology, and Pharmacology.

➤ **Evidence-based Education System (EBES)**

Theory Paper – II	30 marks
Assignments	20 marks
<b>TOTAL</b>	<b>50 marks</b>

**9.2.7.3 Third Professional**

- Third Professional Part I shall be held at end of third Professional part 1 of training (12 months) in the subjects of Ophthalmology, Otorhinolaryngology, Community Medicine and Forensic Medicine and Toxicology.

➤ **Evidence-based Education System (EBES)**

Theory Paper – III	30 marks
Assignments	20 marks
<b>TOTAL</b>	<b>50 marks</b>

- Third Professional Part II - (Final Professional) examination shall be at the end of training (14 months including 2 months of electives) in the subjects of General Medicine, General Surgery, Obstetrics & Gynecology and Pediatrics. The discipline of Orthopedics, Anesthesiology, Dentistry and Radiodiagnosis will constitute 25% of the total theory marks incorporated as a separate section in paper II of General Surgery.

- The discipline of Psychiatry and Dermatology, Venereology and Leprosy (DVL), Respiratory Medicine including Tuberculosis will constitute 25% of the total theory marks in General Medicine incorporated as a separate section in paper II of General Medicine.

➤ **Evidence-based Education System (EBES)**

Theory Paper – IV	30 marks
Assignments	20 marks
<b>TOTAL</b>	<b>50 marks</b>

**9.2.7.4 Examination schedule is in Table 1.**

**9.2.7.5 Marks distribution is in Table 10.**

**Table 10 : Marks distribution for various subjects**

Phase of Course	Written-Theory – Total	Practicals/ Orals/ Clinicals	Pass Criteria
<b>First Professional</b>			<u>Internal Assessment:</u> 50% combined in theory and practical (not less than 40% in each) for eligibility
Human Anatomy - 2 papers	200	100	
Physiology - 2 papers	200	100	
Biochemistry - 2 papers	200	100	
<b>Second Professional</b>			

Pharmacology - 2 Papers	200	100	for appearing for University Examinations
Pathology - 2 papers	200	100	
Microbiology - 2 papers	200	100	
<b>Third Professional Part – I</b>			<u>University Examination</u> Mandatory 50% marks separately in theory and practical (practical = practical/ clinical + viva)
Forensic Medicine & Toxicology - 1 paper	100	100	
Ophthalmology – 1 paper	100	100	
Otorhinolaryngology – 1 paper	100	100	
Community Medicine - 2 papers	200	100	
<b>Third Professional Part – II</b>			
General Medicine - 2 papers	200	200	
General Surgery - 2 papers	200	200	
Pediatrics – 1 paper	100	100	
Obstetrics & Gynaecology - 2 papers	200	200	

**Note:** At least one question in each paper of the clinical specialties should test knowledge - competencies acquired during the professional development programme (AETCOM module); Skills competencies acquired during the Professional Development programme (AETCOM module) must be tested during clinical, practical and viva.

**In subjects that have two papers, the learner must secure** at least 40% marks in each of the papers with minimum 50% of marks in aggregate (both papers together) to pass in the said subject.

- **Criteria for passing in a subject:** A candidate shall obtain 50% marks in University conducted examination separately in Theory and Practical (practical includes: practical/ clinical and viva voce) in order to be declared as passed in that subject.

### 9.3 Appointment of Examiners

9.3.1 Person appointed as an examiner in the particular subject must have at least four years of total teaching experience as assistant professor after obtaining postgraduate degree in the subject in a college affiliated to a recognized/approved/permitted medical college.

9.3.2 For the Practical/ Clinical examinations, there shall be at least four examiners for 100 learners, out of whom not less than 50% must be external examiners. Of the four examiners, the senior-most internal examiner will act as the Chairman and coordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained. Where candidates appearing are more than 100, two additional examiners (one external & one internal) for every additional 50 or part there of candidates appearing, be appointed.

9.3.3 In case of non-availability of medical teachers, approved teachers without a medical degree (engaged in the teaching of MBBS students as whole-time



teachers in a recognized medical college), may be appointed examiners in their concerned subjects provided they possess requisite doctorate qualifications and four years teaching experience (as assistant professors) of MBBS students. Provided further that the 50% of the examiners (Internal & External) are from the medical qualification stream.

9.3.4 External examiners may not be from the same University.

9.3.5 The internal examiner in a subject shall not accept external examinership for a college from which external examiner is appointed in his/her subject.

9.3.6 A University having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college.

9.3.7 External examiners shall rotate at an interval of 2 years.

9.3.8 There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall moderate the questions.

9.3.9 All eligible examiners with requisite qualifications and experience can be appointed internal examiners by rotation in their subjects.

9.3.10 All theory paper assessment should be done as central assessment program (CAP) of concerned university.

9.3.11 Internal examiners should be appointed from same institution for unitary examination in same institution. For pooled examinations at one centre approved internal examiners from same university may be appointed.

9.3.12 The grace marks up to a maximum of five marks may be awarded at the discretion of the University to a learner for clearing the examination as a whole but not for clearing a subject resulting in exemption.

## **10. INTERNSHIP**

Internship is a phase of training wherein a graduate will acquire the skills and competencies for practice of medical and health care under supervision so that he/she can be certified for independent medical practice as an Indian Medical Graduate. In order to make trained work force available, it may be considered as a phase of training wherein the graduate is expected to conduct actual practice under the supervision of a trained doctor. The learning methods and modalities have to be done during the MBBS course itself with larger number of hands on session and practice on simulators.

### **10.1 Goal:**

The goal of the internship programme is to train medical students to fulfill their roles as doctors of first contact in the community.

10.2 Objectives: At the end of the internship period, the medical graduate will possess all competencies required of an Indian Medical Graduate, namely:

- Independently provide preventive, promotive, curative and palliative care with compassion,
- Function as leader and member of the health care team and health system,

- Communicate effectively with patients, families, colleagues and the community,
- Be certified in diagnostic and therapeutic skills in different disciplines of medicine taught in the undergraduate programme,
- Be a lifelong learner committed to continuous improvement of skills and knowledge,
- Be a professional committed to excellence and is ethical, responsive and accountable to patients, community and profession.

### 10.3 Time Distribution

Community Medicine (Residential posting)	2 months
General Medicine including 15 days of Psychiatry	2 months
General Surgery including 15 days Anaesthesia	2 months
Obstetrics & Gynaecology including Family Welfare Planning	2 months
Pediatrics	1 month
Orthopaedics including PM & R	1 month
Otorhinolaryngology	15 days
Ophthalmology	15 days
Casualty	15 days
Elective posting (1x15 days)	15 days

Subjects for Elective posting will be as follows:

1. Dermatology, Venereology & Leprosy
2. Respiratory Medicine
3. Radio diagnosis
4. Forensic Medicine & Toxicology
5. Blood Bank
6. Psychiatry

**Note:** Structure internship with assessment at the end in the college.

### 10.4 Other details:

- All parts of the internship shall be done as far as possible in the parent institution & allied hospitals or centers duly approved by the Sumandeep Vidyapeeth.
- Every candidate will be required, after passing the final MBBS examination, to undergo compulsory rotating internship to the satisfaction of the college authorities and university concerned for a period of 12 months so as to be eligible for the award of the degree of Bachelor of Medicine and Bachelor of Surgery (MBBS) and full registration.
- The University shall issue a provisional MBBS pass certificate on passing the final examination.
- The State Medical Council will grant provisional registration to the candidate on production of the provisional MBBS passing certificate. The provisional registration will be valid for a period of one year. In the event of shortage or unsatisfactory work, the period of provisional registration and the compulsory rotating internship may be suitably extended by the appropriate authorities.
- The intern shall be entrusted with clinical responsibilities under direct supervision of Senior Medical Officer. They shall not be working independently.
- Interns will not issue a medical certificate or a death certificate or a medico-legal document under their signature.

- Leave & Posting : Maximum 12 casual leave will be allowed per year. Posting will be done before starting of internship. No change will be entertained except in special situation where Authority finds it necessary for institutional circumstances.
- In recognition of the importance of hands-on experience, full responsibility for patient care and skill acquisition, internship should be increasingly scheduled to utilize clinical facilities available in District Hospital, Taluka Hospital, Community Health Centre and Primary Health Centre, in addition to Teaching Hospital. A critical element of internship will be the acquisition of specific experiences and skill as listed in major areas: provided that where an intern is posted to District/Sub Divisional Hospital for training, there shall be a committee consisting of representatives of the college/University, the State Government and the District administration, who shall regulate the training of such trainee. Provided further that, for such trainee a certificate of satisfactory completion of training shall be obtained from the relevant administrative authorities which shall be countersigned by the Principal/Dean of College.
- *All Interns shall undergo Basic Life Support (BLS) course during the internship program from the Academic year 2017-18, compulsorily (Board of Studies letter no.: SBKSMIRC/Dean/1777(A)/2017, dated 28/11/2017 and Vide Notification of Board of Management Resolution Ref: No. SV/8813/2017-18 dated 06/04/2018)*

#### 10.5 Assessment of Internship:

- The intern shall maintain a record of work in a log book, which is to be verified and certified by the medical officer under whom he/she works. Apart from scrutiny of the record of work, assessment and evaluation of training shall be undertaken by an objective approach using situation tests in knowledge, skills and attitude during and at the end of the training.
- Based on the record of work and objective assessment at the end of each posting, the Dean/Principal shall issue cumulative certificate of satisfactory completion of training at the end of internship, following which the University shall award the MBBS degree or declare him eligible for it.
- Satisfactory completion shall be determined on the basis of the following.
  - a. Proficiency of knowledge required for each case Score 0 to 5
  - b. The competency in skills expected to manage each case:
    - I. Competency of self performance
    - II. Of having assisted in procedures
    - III. Of having observed procedures Score 0 to 5
  - c. Responsibility, punctuality, work up of case, involvement in treatment, follow-up reports Score 0 to 5
  - d. Capacity to work in a team (behavior with colleagues, nursing staff and relationship with paramedics). Score 0 to 5
  - e. Initiative, participation in discussions, research aptitude Score 0 to 5

#### Explanation:

0-poor  
 1-fair  
 2-below average  
 3-average  
 4-above average  
 5-excellent

- A score of less than 3 in any of the above items will mean unsatisfactory completion of internship.
- Full registration shall only be given by the State Medical Council/Medical Council of India on the award of the MBBS degree by the University or its declaration that the candidate is eligible for it.

***Please refer to the Annexure-10 Internship Logbook/ Record book***

**Please note:**

- Latest editions of text-books and reference books should be used and consulted for each subject.
- Broad guidelines, as laid down by Medical Council of India, are provided for framing curricula. Each department should work out the detailed curriculum using these guidelines and implement the same. The curriculum should be revised and updated from time to time based on need and recommendations of MCI.