



**YENEP OYA**

(DEEMED TO BE UNIVERSITY)  
Recognized under Sec 3(A) of the UGC Act 1956  
Accredited by NAAC with 'A' Grade

**1.1.1. Curricula developed and implemented have relevance to the local, national, regional and global health care needs which are visible in Programme Outcomes (POs), and Course Outcomes (COs) offered by the University, as per the norms of the Regulatory Bodies.**

## **Outcome analysis of POs, COs**

Sl. No.	Content
1	Outcome Based Education (OBE) Framework-Process of Program and Course Outcome Attainment Analysis and Mapping
2	Outcome Attainment for the Programmes during 2016-2021
3	Link to Outcome Analysis for the programs

# 1. Outcome Based Education (OBE) Framework – Process of Program and Course Outcome Attainment Analysis and Mapping

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## OUTCOME-BASED EDUCATION

Yenepoya (Deemed to be University) has adopted Outcome Based Education (OBE) across all the programs. OBE empowers students to take more responsibility for their own learning. It also encourages greater student engagement with the curriculum and to student-centred approaches as the OBE framework is based on desired outcomes to be achieved by the students. This makes obvious the process of knowledge and skill attainment and not just the ultimate outcome.

### DEFINING THE COMPONENTS OF OBE

The constituent units, departments and centres have embodied the components of OBE by defining them under;

- Vision and Mission statement
- Program Educational Objectives (PEOs)
- Program Outcomes (POs)
- Program-specific Outcomes (PSOs)
- Course outcomes (COs)
- Course-specific learning outcomes (CSOs)/ Competencies
- Specific learning Objectives (SLOs)

**Program Educational Objectives** describe the professional accomplishments of the graduates to be attained within a few years of their graduation.

**Program Outcomes** are statements about the knowledge, skills, and attitudes (attributes) that a graduate should attain at the end of a program (Eg: MBBS, BDS, MD, MCh, BPT, BDS, BSc. Nursing, BAMS, BHMS, B.Com, etc.).

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These are the graduate attributes and are individually measurable outcomes which can be acquired in the specified program. They focus on performance-based outcomes. Using the framework, students will learn to integrate their knowledge and skills in a hands-on, experiential way in the following key areas;

- Comprehensive knowledge,
- Communication skills,
- Critical thinking,
- Problem solving skills,
- Self-directed learning,
- Analytical skills,
- Ethical awareness,
- Leadership qualities,
- Team work,
- Lifelong learning, etc.

**Program-specific outcomes** are specific statements about what the student should be able to do at the time of graduation concerning the cognitive, affective and psychomotor learning domains.

**Course outcomes** are statements describing the observable and measurable knowledge, skills, attitudes and attributes the student will learn by the end of course/subject such as Anatomy, Physiology, Biochemistry and so on.

**Course-specific learning outcomes are the Competencies** designed to be a measurable, observable, and specific statement indicating what the student must know and should be able to do at the end of a teaching-learning process.

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## MAPPING OF LEARNING OUTCOMES

Once the learning outcomes were defined, then mapping of these was done to measure their attainment.

- Course-specific outcomes/Competencies were mapped with the course outcomes as Substantial, Moderate, Slight and None. The attainment values used were Substantial -76 - 100%, Moderate-66 - 75%, Slight-51 - 65%, Nil-0 - 50%.
- Similarly, course outcomes are mapped with program outcomes using similar attainment values (Substantial, Moderate, Slight and None)

A variety of formative and summative assessment tools for were identified to measure the performance of students.

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## PROCESS OF OUTCOME ANALYSIS

# Program and Course Outcome Analysis

### Training of the teaching faculty on OBE Framework

Program Outcomes, Course Outcomes and Course Specific Outcomes/Competencies are listed.

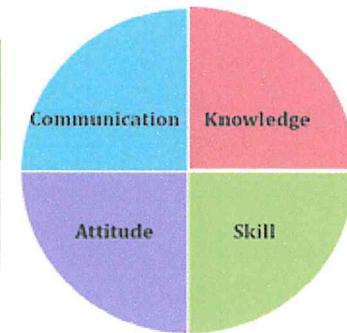
Mapping of Program Outcomes to Course Outcomes to Course Specific Outcomes/Competencies

For all the courses and programs

Teaching-Learning in all domains

Assessment methods planned as per competency/outcome based

Student performance mapped with the outcomes expected across the courses and the programs

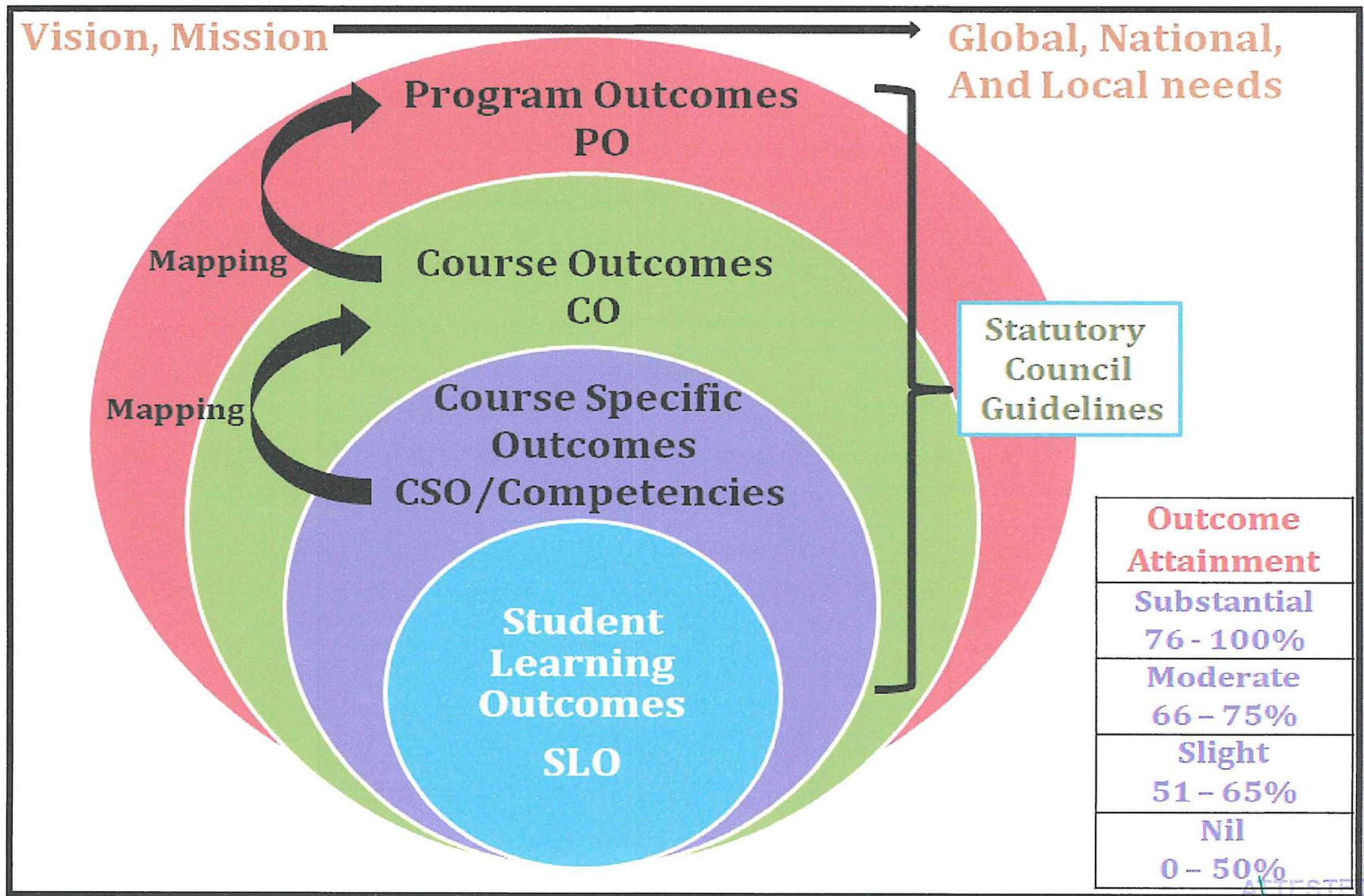


Program and Course Outcome attainments are calculated for all the courses and programs

Remedial measures to strengthen the teaching learning and evaluation process

Feedback, its analysis and appropriate actions accordingly

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## Outcome Based Education Framework- Outcomes and Mapping

Yenepoya (Deemed to be University, Mangalore)

### Sample descriptions, Outcomes and Mappings:

Vision and Mission – Yenepoya Medical College	
<b>Vision</b>	“To be one of the premier medical institutions in the country based on our education, scientific investigation and health care delivery.”
<b>Mission</b>	<b>Patient Care:</b> Strive to provide outstanding clinical care, which is comprehensive and affordable and delivered compassionately, appropriately, responsibly and efficiently. The patient care provided will be done in a manner that supports and advances education and research.
	<b>Education:</b> The College will strive to produce outstanding medical teachers, physicians and scientists. This will be done by providing quality education to the students, residents, postgraduate and post doctoral trainees, practicing physicians and the public that integrates the latest research advances with the best clinical practice.
	<b>Research:</b> To advance knowledge about health and behavior and to make discoveries leading to improved prevention and treatment of clinical disorders, including education of Care givers and the delivery of health services.

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## Program Outcomes (POs)- MBBS

PO	Description
<b>PO 1</b>	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.
<b>PO 2</b>	Be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.
<b>PO 3</b>	Appreciate rationale for different therapeutic modalities; be familiar with the administration of the "essential drugs" and their common side effects.
<b>PO 4</b>	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.
<b>PO 5</b>	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.
<b>PO 6</b>	Be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following: (i) Family Welfare and Maternal and Child Health (MCH); (ii) Sanitation and water supply; (iii) Prevention and control of communicable and non-communicable diseases; (iv) Immunization; (v) Health Education; (vi) Indian Public Health Standards (IPHS) at various level of service delivery; (vii) Bio-medical waste disposal; and (viii) Organizational and or institutional arrangements.
<b>PO 7</b>	Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling.
<b>PO 8</b>	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.
<b>PO 9</b>	Be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
<b>PO 10</b>	Be competent to work in a variety of health care settings.
<b>PO 11</b>	Have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

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### PHYSIOLOGY- Course Outcomes (COs)

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

### Course Specific Outcome (CSOs) / Competencies- MBBS Physiology

Name of Competency	Description
PY1.1	Describe the structure and functions of a mammalian cell
PY1.2	Describe and discuss the principles of homeostasis
PY1.3	Describe intercellular communication
PY1.4	Describe apoptosis – programmed cell death
PY1.5	Describe and discuss transport mechanisms across cell membranes
PY1.6	Describe the fluid compartments of the body, its ionic composition & measurements
PY1.7	Describe the concept of pH & Buffer systems in the body
PY1.8	Describe and discuss the molecular basis of resting membrane potential and action potential in excitable tissue
PY1.9	Demonstrate the ability to describe and discuss the methods used to demonstrate the functions of the cells and its products, its communications and their applications in Clinical care and research.

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*(Handwritten Signature)*

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<b>CSO/COMPETENCIES (CSO)-Course Outcomes (COs) Mappings-MBBS-PHYSIOLOGY</b>				
<b>Mapping Values used</b>	<b>None</b>	<b>Slight</b>	<b>Moderate</b>	<b>Substantial</b>
	<b>Course Outcomes (COs)</b>			
<b>CSO/COMPETENCIES (CSO)</b>	<b>CO 1</b>	<b>CO 2</b>	<b>CO 3</b>	<b>CO 4</b>
PY1.1	Substantial	Substantial	Moderate	Substantial
PY1.2	Substantial	Substantial	Substantial	Substantial
PY1.3	Moderate	Substantial	Moderate	Slight
PY1.4	Moderate	Moderate	Substantial	Slight
PY1.5	Substantial	Substantial	Slight	Slight
PY1.6	Substantial	Substantial	Slight	Slight
PY1.7	Substantial	Substantial	Slight	Substantial
PY1.8	Substantial	Substantial	None	Moderate
PY1.9	Slight	Slight	Slight	Slight

<b>Course Outcomes (COs)-Programme Outcomes (POs) Mappings-MBBS-PHYSIOLOGY</b>											
<b>CO</b>	<b>Program Outcomes (POs) MBBS PHYSIOLOGY</b>										
	<b>P01</b>	<b>P02</b>	<b>P03</b>	<b>P04</b>	<b>P05</b>	<b>P06</b>	<b>P07</b>	<b>P08</b>	<b>P09</b>	<b>P010</b>	<b>P011</b>
<b>CO1</b>	Substantial	Substantial	Moderate	None	Substantial	Moderate	Slight	Moderate	Slight	Slight	None
<b>CO2</b>	Substantial	Substantial	Moderate	None	Substantial	Moderate	Slight	Moderate	Slight	Slight	None
<b>CO3</b>	Substantial	Substantial	Substantial	Moderate	Substantial	Substantial	Moderate	Moderate	Moderate	Moderate	Slight
<b>CO4</b>	Substantial	Substantial	Substantial	Substantial	Substantial	Substantial	Substantial	Substantial	Substantial	Substantial	Moderate

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## 2. Outcome Attainment for the Programmes

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## Outcome Attainment for the Programmes

S. No.	Program outcome	2015 Batch		
		Substantial	Moderate	Slight
		76 - 100%	66 - 75%	51 - 65%
1.	Bachelor of Physiotherapy	4	26	61
2.	B.Sc. Anaesthesia and OT Technology	2	23	59
3.	B.Sc. Medical Imaging Technology	2	7	69
4.	B.Sc. Medical Laboratory Technology	25	37	16
5.	B.Sc. Perfusion Technology	4	20	75
6.	B.Sc. Renal Dialysis Technology	9	43	47
7.	B.Sc. Respiratory Care Technology	4	34	30
8.	Post Basic B.Sc. Nursing	2	8	51
9.	Bachelor of Medicine and Bachelor of Surgery (MBBS)	18	34	39
10.	Bachelor of Dental Surgery (BDS)	8	30	52
11.	M.Sc. Medical Anatomy	0	100	0
12.	M.Sc. Community Health Nursing	71	29	0
13.	M.Sc. Medical Surgical Nursing	29	43	29
14.	M.Sc. OBG Nursing	29	43	29
15.	M.Sc. Paediatric Nursing	100	0	0
16.	M.Sc. Psychiatric Nursing	67	33	0
17.	MPT Neuro	0	17	67
18.	MPT Ortho	6	44	50
19.	Post Doctoral Fellowship in Cleft Orthodontics	0	0	100
		<b>20</b>	<b>30</b>	<b>41</b>

Average of PO Attainment for 2015 Batch students - 91%

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S. No.	Program outcome	2016 Batch		
		Substantial	Moderate	Slight
		76 - 100%	66 - 75%	51 - 65%
1.	Bachelor in Hospital Administration	25	42	19
2.	Bachelor of Physiotherapy	7	24	34
3.	BSc - Anaesthesia and OT Technology	2	30	55
4.	BSc - Medical Imaging Technology	7	22	31
5.	BSc - Medical Laboratory Technology	40	27	11
6.	Bachelor of Science in Nursing	2	32	43
7.	BSc - Perfusion Technology	8	23	36
8.	BSc - Renal Dialysis Technology	2	37	57
9.	BSc - Respiratory Care Technology	4	34	30
10.	Post Basic B.Sc. Nursing	10	40	39
11.	Bachelor of Medicine and Bachelor of Surgery (MBBS)	18	38	39
12.	BSc - Cardiovascular Technology	22	33	27
13.	Bachelor of Dental Surgery	16	45	35
14.	M.Sc. Medical Surgical Nursing	57	40	3
15.	Medical OBG Nursing	57	40	3
16.	MPT Neuro	13	46	42
17.	MPT Ortho	3	23	57
18.	MPT Paediatric	17	50	33
19.	Master of Social Work	8	88	4
		<b>17</b>	<b>38</b>	<b>31</b>

Average of PO Attainment for 2016 Batch students -86%

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Program outcome	2017 Batch		
	Substantial	Moderate	Slight
	76 - 100%	66 - 75%	51 - 65%
Bachelor in Hospital Administration	16	16	27
BSc - Anaesthesia and OT Technology	3	30	45
BSc - Medical Imaging Technology	2	34	36
BSc - Medical Laboratory Technology	60	19	8
BSc – Perfusion Technology	25	20	44
BSc - Renal Dialysis Technology	6	58	32
BSc - Respiratory Care Technology	18	39	34
Post Basic B.Sc. Nursing	19	45	33
Post Doctoral Fellowship in Urology	0	0	100
BSc - Cardiovascular Technology	9	26	30
BSc – Optometry	17	28	41
BSc. Hospitality Science	21	21	29
Bachelor of Commerce	33	24	24
B. Com (Professionals)	33	24	24
M.Sc. Medical Pharmacology	0	50	50
M.Sc. Community Health Nursing	63	38	0
M.Sc. Medical Surgical Nursing	43	43	14
M.Sc. Medical OBG Nursing	57	29	14
M.Sc. Paediatric Nursing	100	0	0
M.Sc. Psychiatric Nursing	25	50	25
Master of Hospital Administration	7	25	51
MPT Cardio Pulmonary	0	50	50
MPT Neuro	8	42	21
MPT Ortho	6	25	69

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Master of Social Work	23	54	23
M.Sc. Medical Microbiology	0	0	0
	23	30	32

Average of PO Attainment for 2017 Batch students- 85%

S. No.	Program outcome	2018 Batch		
		Substantial	Moderate	Slight
		76 - 100%	66 - 75%	51 - 65%
1.	Post Basic B.Sc. Nursing	17	46	34
2.	Post Doctoral Fellowship in Surgical Oncology	0	50	50
3.	PG Diploma in Forensic Anthropology and Odontology	89	0	11
4.	M.Sc Bioscience	44	25	17
5.	Diploma in Pharmacy	65	23	11
6.	M.Sc. Medical Surgical Nursing	75	0	25
7.	M.Sc. OBG Nursing	50	25	25
8.	M.Sc. Paediatric Nursing	0	50	25
9.	M.Sc. Psychiatric Nursing	25	25	50
10.	Master of Hospital Administration	5	33	37
11.	MPT Cardio	30	64	6
12.	MPT Neuro	27	73	0
13.	MPT Ortho	13	17	58
14.	Master of Social Work	21	45	25
		33	34	27

Average of PO Attainment for 2018 Batch students- 93%

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### 3. Link to Outcome Analysis for the programs

  
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Sl. No.	Program Name	Link
1.	Bachelor Dental Surgery (BDS)	Link
2.	Master of Dental Surgery (MDS-9 Programmes)	Link
3.	PDF in Cleft Orthodontics	Link
4.	PDF in Cleft and Craniofacial Surgery	Link
5.	Bachelor of Medicine and Bachelor of Surgery (MBBS)	Link
6.	MD, MS (20 Programmes)	Link
7.	Bachelor of Hospital Administration (BHA)	Link
8.	Masters in Hospital Administration (MHA)	Link
9.	B.Sc. Anaesthesia & OT Technology	Link
10.	B.Sc. Renal Dialysis Technology	Link
11.	B.Sc. Medical Imaging Technology	Link
12.	B.Sc. Perfusion Technology	Link

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13.	B.Sc. Respiratory Care Technology	Link
14.	B.Sc. Medical Laboratory Technology	Link
15.	M.Ch. Urology	Link
16.	M.Sc. Medical Anatomy	Link
17.	M.Sc. Medical Biochemistry	Link
18.	M.Sc. Medical Physiology	Link
19.	M.Sc. Medical Pharmacology	Link
20.	M.Sc. Medical Microbiology	Link
21.	PDF in Surgical Oncology	Link
22.	PDF in Urology	Link
23.	PG Diploma in Bioethics and Medical Ethics	Link
24.	PG Diploma in Forensic Anthropology and Odontology	Link
25.	B.Sc. Cardiovascular Technology	Link

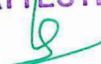
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26.	B.Sc. Optometry Technology	Link
27.	B.Sc. Nursing	Link
28.	Post Basic B.Sc. Nursing	Link
29.	M.Sc. Nursing	Link
30.	Bachelor of Physiotherapy (BPT)	Link
31.	Master of Physiotherapy (MPT)	Link
32.	Master of Social Work (MSW)	Link
33.	M.Sc. Bioscience	Link
34.	PG Diploma in Multiomics Technology	Link
35.	Diploma in Pharmacy (D. Pharm.)	Link
36.	Bachelor of Commerce (B.Com.)	Link
37.	B.Sc. Hospitality Science	Link
38.	Bachelor of Computer Applications (BCA)	Link

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39.	Bachelor of Pharmacy (B. Pharm.)	Link
40.	Bachelor of Business Administrations (BBA)	Link
41.	Bachelor of Commerce (B.Com) Honours	Link
42.	B. Sc Honours Forensic Science	Link
43.	Master of Science in Biostatistics	Link

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