

# School of Allied and Public Health Sciences and Technology

## Course Structure

### Undergraduate Programs:

Bachelor of Science (B. Sc.)

### Postgraduate Programs:

Master of Science (M. Sc.), Master of Public Health (MPH), Master of Physiotherapy (MPT)

| Sl. No. | Courses (Bachelor of Science)                               |
|---------|-------------------------------------------------------------|
| 1.      | B.Sc. Cardiovascular Technology (Cath Lab)                  |
| 2.      | B.Sc. Cardio Perfusion Technology (Perfusionist)            |
| 3.      | B.Sc. Cardiology Technology (ECG, 2 D Echo, TMT and Holter) |
| 4.      | B.Sc. Neuroscience Technology                               |
| 5.      | B.Sc. Dialysis Technology                                   |
| 6.      | B.Sc. Respiratory/Pulmonology Technology                    |
| 7.      | B.Sc. Anaesthesia and OT Technology                         |
| 8.      | B.Sc. Emergency Medicine and Critical Care Technology       |
| 9.      | B.Sc. Surgical Laparoscopic Technology                      |
| 10.     | B.Sc. Surgical Robotic Technology                           |
| 11.     | B.Sc. Orthopedic Technology                                 |
| 12.     | B.Sc. Radiology and Imaging Technology                      |
| 13.     | B.Sc. Medical Lab Technology                                |
| 14.     | B.Sc. Radiation Therapy Technology                          |

|         |                                                             |
|---------|-------------------------------------------------------------|
| 15.     | B.Sc. Physician Assistant                                   |
| 16.     | B.Sc. Surgical Assistant                                    |
| 17.     | B.Sc. Medical Equipment Technology                          |
| 18.     | B.Sc. Molecular Medicine and Stem Cell Technology           |
| 19.     | Bachelor of Physiotherapy (BPT)                             |
| 20.     | B.Sc. Public Health                                         |
|         |                                                             |
| Sl. No. | <b>Courses (Master of Science)</b>                          |
| 1.      | M.Sc. Cardiovascular Technology (Cath Lab)                  |
| 2.      | M.Sc. Cardiology Technology (ECG, 2 D Echo, TMT and Holter) |
| 3.      | M.Sc. Echo Cardiography Technology (2D Echo)                |
| 4.      | M.Sc. Emergency Medicine and Critical Care Technology       |
| 5.      | M.Sc. Physician Assistant                                   |
| 6.      | Master of Physiotherapy (MPT) – Neuro                       |
| 7.      | Master of Physiotherapy (MPT) – Ortho                       |
| 8.      | M.Sc. Medical lab Technology                                |
| 9.      | M.Sc. Molecular Medicine and Stem Cell Technology           |
| 10.     | M.Sc. Public Health                                         |

**Curricular structure for First year First Semester Undergraduate (B. Sc.) Courses**  
**(Excluding Bachelor of Public Health and B.Sc. Molecular Medicine)**

| S. No | SUBJECT                          | L         | T        | P         | C         | Max. Marks |            |            |
|-------|----------------------------------|-----------|----------|-----------|-----------|------------|------------|------------|
|       |                                  |           |          |           |           | INT        | EXT        | TOTAL      |
| 1     | Human Anatomy - I                | 4         | -        | -         | 4         | 30         | 70         | 100        |
| 2     | Human Physiology - I             | 4         | -        | -         | 4         | 30         | 70         | 100        |
| 3     | Medical Bio-chemistry- I         | 4         | -        | -         | 4         | 30         | 70         | 100        |
| 4     | Sociology                        | 2         | -        | -         | 2         | 30         | 70         | 100        |
| 5     | English and Communication Skills | 2         | -        | -         | 2         | 30         | 70         | 100        |
| 6     | Basics of Computers              | 1         | -        | 2         | 2         | 30         | 70         | 100        |
| 7     | Human Anatomy - I Practical      | -         | -        | 4         | 2         | 30         | 70         | 100        |
| 8     | Human Physiology - I Practical   | -         | -        | 4         | 2         | 30         | 70         | 100        |
| 9     | Environmental Awareness          | 2         | -        | -         | 2         | 100        | -          | 100        |
|       | <b>TOTAL</b>                     | <b>19</b> | <b>-</b> | <b>10</b> | <b>24</b> | <b>340</b> | <b>560</b> | <b>900</b> |

**Bachelor of Public Health**

| S. No | SUBJECT                                | L         | T        | P        | C         | Max. Marks |            |             |
|-------|----------------------------------------|-----------|----------|----------|-----------|------------|------------|-------------|
|       |                                        |           |          |          |           | INT        | EXT        | TOTAL       |
| 1     | Introduction to Public Health          | 2         | -        | -        | 2         | 30         | 70         | 100         |
| 2     | Human Anatomy - I                      | 2         | -        | -        | 2         | 30         | 70         | 100         |
| 3     | Human Physiology - I                   | 2         | -        | -        | 2         | 30         | 70         | 100         |
| 4     | Medical Biochemistry - I               | 2         | -        | -        | 2         | 30         | 70         | 100         |
| 5     | Principles of Epidemiology             | 2         | -        | -        | 2         | 30         | 70         | 100         |
| 6     | Principles of Epidemiology - Practical | -         | -        | 2        | 1         | 30         | 70         | 100         |
| 7     | Human Anatomy - I Practical            | -         | -        | 2        | 1         | 30         | 70         | 100         |
| 8     | Human Physiology - I Practical         | -         | -        | 2        | 1         | 30         | 70         | 100         |
| 9     | Sociology                              | 2         | -        | -        | 2         | 30         | 70         | 100         |
| 10    | English and Communication Skills       | 2         | -        | -        | 2         | 30         | 70         | 100         |
| 11    | Environment Awareness                  | 2         | -        | -        | 2         | 30         | 70         | 100         |
| 12    | Basics of Computers                    | 1         | -        | 2        | 2         | 100        | -          | 100         |
|       | <b>TOTAL</b>                           | <b>17</b> | <b>-</b> | <b>8</b> | <b>21</b> | <b>430</b> | <b>770</b> | <b>1200</b> |

**Bachelor of Science (B.Sc.) Molecular Medicine and Stem Cell Technology**

| S.NO         | SUBJECT                   | L         | T        | P         | C         | Max. Marks |            |            |
|--------------|---------------------------|-----------|----------|-----------|-----------|------------|------------|------------|
|              |                           |           |          |           |           | INT        | EXT        | TOTAL      |
| 1            | English                   | 3         | -        | -         | 3         | 30         | 70         | 100        |
| 2            | Basic Chemistry           | 2         | -        | -         | 2         | 30         | 70         | 100        |
| 3            | Biochemistry              | 3         | -        | -         | 3         | 30         | 70         | 100        |
| 4            | Cell Biology and Genetics | 4         | -        | -         | 4         | 30         | 70         | 100        |
| 5            | Basics of Computers       | 2         | -        | -         | 2         | 30         | 70         | 100        |
| 6            | Basic Chemistry Lab       | -         | -        | 4         | 2         | 30         | 70         | 100        |
| 7            | Biochemistry Lab          | -         | -        | 4         | 2         | 30         | 70         | 100        |
| 8            | Cell Biology Lab          | -         | -        | 4         | 2         | 30         | 70         | 100        |
| 9            | Environmental Awareness   | 2         | -        | -         | 2         | 100        | -          | 100        |
| <b>TOTAL</b> |                           | <b>16</b> | <b>-</b> | <b>12</b> | <b>22</b> | <b>340</b> | <b>560</b> | <b>900</b> |

## **Curricular structure for First year First Semester Postgraduate (MSc) Courses**

### **Course Structure M.Sc. Cardiovascular Technology (Cath Lab)**

| S.NO | SUBJECT                                                       | L         | T        | P         | C         | Max. Marks |            |            |
|------|---------------------------------------------------------------|-----------|----------|-----------|-----------|------------|------------|------------|
|      |                                                               |           |          |           |           | INT        | EXT        | TOTAL      |
| 1    | Research Methodology and Biostatistics                        | 4         | -        | -         | 4         | 40         | 60         | 100        |
| 2    | Cardiac Anatomy, Physiology and Pathology of Cardiac diseases | 3         | -        | -         | 3         | 40         | 60         | 100        |
| 3    | Introduction to Cath Lab & Interventional Cardiology          | 3         | -        | 2         | 4         | 40         | 60         | 100        |
| 4    | Basics of Medical and Surgical Treatments of Cardiac Diseases | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 5    | Diagnostic Cardiovascular Imaging                             | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 6    | Clinical Postings I (Cath Lab/Cardiac ICU)                    | -         | -        | 12        | 6         | 40         | 60         | 100        |
|      | <b>TOTAL</b>                                                  | <b>14</b> | <b>-</b> | <b>12</b> | <b>21</b> | <b>240</b> | <b>360</b> | <b>600</b> |

### **Course Structure M.Sc. Cardiology Technology (ECG, 2 D Echo, TMT and Holter)**

| S.NO | SUBJECT                                                       | L         | T        | P         | C         | Max. Marks |            |            |
|------|---------------------------------------------------------------|-----------|----------|-----------|-----------|------------|------------|------------|
|      |                                                               |           |          |           |           | INT        | EXT        | TOTAL      |
| 1    | Research Methodology and Biostatistics                        | 4         | -        | -         | 4         | 40         | 60         | 100        |
| 2    | Cardiac Anatomy, Physiology and Pathology of Cardiac Diseases | 3         | -        | -         | 3         | 40         | 60         | 100        |
| 3    | Fundamentals of Echocardiography                              | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 4    | Basics of Medical and Surgical Treatments of Cardiac Diseases | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 5    | Diagnostic Cardiovascular Imaging                             | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 6    | Basics of Echocardiography - Practical                        | -         | -        | 4         | 2         | 40         | 60         | 100        |
| 7    | Clinical Postings – I (ECG/2D Echo/ Cardiac ICU)              | -         | -        | 16        | 8         | 40         | 60         | 100        |
|      | <b>TOTAL</b>                                                  | <b>13</b> | <b>-</b> | <b>20</b> | <b>23</b> | <b>280</b> | <b>420</b> | <b>700</b> |

**Course Structure M.Sc. Echo Cardiography Technology (2D Echo)**

| S.NO | SUBJECT                                                       | L         | T        | P         | C         | Max. Marks |            |            |
|------|---------------------------------------------------------------|-----------|----------|-----------|-----------|------------|------------|------------|
|      |                                                               |           |          |           |           | INT        | EXT        | TOTAL      |
| 1    | Research Methodology and Biostatistics                        | 4         | -        | -         | 4         | 40         | 60         | 100        |
| 2    | Cardiac Anatomy, Physiology and Pathology of Cardiac Diseases | 3         | -        | -         | 3         | 40         | 60         | 100        |
| 3    | Fundamentals of Echocardiography                              | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 4    | Basics of Medical and Surgical Treatments of Cardiac Diseases | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 5    | Diagnostic Cardiovascular Imaging                             | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 6    | Basics of Echocardiography Practical                          | -         | -        | 4         | 2         | 40         | 60         | 100        |
| 7    | Clinical Postings - I                                         | -         | -        | 16        | 8         | 40         | 60         | 100        |
|      | <b>TOTAL</b>                                                  | <b>13</b> | <b>-</b> | <b>20</b> | <b>23</b> | <b>280</b> | <b>420</b> | <b>700</b> |

**Course Structure M.Sc. Emergency Medicine and Critical Care Technology**

| S.NO | SUBJECT                                     | L         | T        | P         | C         | Max. Marks |            |            |
|------|---------------------------------------------|-----------|----------|-----------|-----------|------------|------------|------------|
|      |                                             |           |          |           |           | INT        | EXT        | TOTAL      |
| 1    | Principle of critical care                  | 4         | -        | -         | 4         | 40         | 60         | 100        |
| 2    | Pharmacology in Emergency Care              | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 3    | Basics of Emergency Medicine                | 4         | -        | -         | 4         | 40         | 60         | 100        |
| 4    | Physiology related to critical care         | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 5    | Basic Life Support (BLS) and ALS Techniques | -         | -        | 2         | 1         | 40         | 60         | 100        |
| 6    | Emergency Medicine & Critical care - I      | -         | -        | 4         | 2         | 40         | 60         | 100        |
| 7    | Research Methodology and Biostatistics      | 4         | -        | -         | 4         | 40         | 60         | 100        |
| 8    | Clinical Posting 1                          | -         | -        | 16        | 8         | 40         | 60         | 100        |
|      | <b>TOTAL</b>                                | <b>16</b> | <b>-</b> | <b>22</b> | <b>27</b> | <b>320</b> | <b>480</b> | <b>800</b> |

### Course Structure M.Sc. Physician Assistant

| S.NO | SUBJECT                                | L         | T        | P         | C         | Max. Marks |            |            |
|------|----------------------------------------|-----------|----------|-----------|-----------|------------|------------|------------|
|      |                                        |           |          |           |           | INT        | EXT        | TOTAL      |
| 1    | Human Anatomy                          | 3         | -        | -         | 3         | 40         | 60         | 100        |
| 2    | Human Physiology                       | 3         | -        | -         | 3         | 40         | 60         | 100        |
| 3    | Clinical Assessment Techniques         | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 4    | Pharmacology for Physician Assistants  | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 5    | Medical Ethics and Law                 | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 6    | Research Methodology and Biostatistics | 2         | -        | -         | 2         | 40         | 60         | 100        |
| 7    | Clinical Posting 1                     | -         | -        | 16        | 8         | 40         | 60         | 100        |
|      | <b>TOTAL</b>                           | <b>14</b> | <b>-</b> | <b>16</b> | <b>22</b> | <b>280</b> | <b>420</b> | <b>700</b> |

### Course Structure Master of Physiotherapy (MPT) – Neuro

| S.NO | SUBJECT                                                                                                     | L        | T        | P         | C         | Max. Marks |            |            |
|------|-------------------------------------------------------------------------------------------------------------|----------|----------|-----------|-----------|------------|------------|------------|
|      |                                                                                                             |          |          |           |           | INT        | EXT        | TOTAL      |
| 1    | Laws, Ethics, Administration Educational Methodology (LEM)                                                  | 2        | -        | -         | 2         | 20         | 80         | 100        |
| 2    | Research methodology and biostatistics, EBP (RMB)                                                           | 3        | -        | -         | 3         | 20         | 80         | 100        |
| 3    | Biomechanics & Therapeutics (BCT)                                                                           | 2        | -        | -         | 2         | 20         | 80         | 100        |
| 4    | Physical & Functional Diagnosis in the speciality. Speciality paper-1                                       | 2        | -        | -         | 2         | 20         | 80         | 100        |
| 5    | Skills acquisition and refinement (SAR-I) (Teaching Assignment, Seminars, journal club & Case Studies etc.) | -        | -        | 6         | 3         | 100        | -          | 100        |
| 6    | Physical & Functional Diagnosis in the speciality. Speciality paper-1 (Practical )                          | -        | -        | 2         | 1         | 20         | 80         | 100        |
| 7    | Clinical training (CT-I)                                                                                    | -        | -        | 16        | 8         | 20         | 80         | 100        |
| 8    | Dissertation (DSS-I)                                                                                        | -        | -        | 6         | 3         | 100        | -          | 100        |
|      | <b>TOTAL</b>                                                                                                | <b>9</b> | <b>-</b> | <b>30</b> | <b>24</b> | <b>320</b> | <b>480</b> | <b>800</b> |

**Course Structure Master of Physiotherapy (MPT) – Ortho**

| S.NO | SUBJECT                                                                                                     | L        | T        | P         | C         | Max. Marks |            |            |
|------|-------------------------------------------------------------------------------------------------------------|----------|----------|-----------|-----------|------------|------------|------------|
|      |                                                                                                             |          |          |           |           | INT        | EXT        | TOTAL      |
| 1    | Laws, Ethics, Administration Educational Methodology (LEM)                                                  | 2        | -        | -         | 2         | 20         | 80         | 100        |
| 2    | Research methodology and biostatistics, EBP (RMB)                                                           | 3        | -        | -         | 3         | 20         | 80         | 100        |
| 3    | Biomechanics & Therapeutics (BCT)                                                                           | 2        | -        | -         | 2         | 20         | 80         | 100        |
| 4    | Physical & Functional Diagnosis in the speciality. Speciality paper-1                                       | 2        | -        | -         | 2         | 20         | 80         | 100        |
| 5    | Skills acquisition and refinement (SAR-I) (Teaching Assignment, Seminars, journal club & Case Studies etc.) | -        | -        | 6         | 3         | 100        | -          | 100        |
| 6    | Physical & Functional Diagnosis in the speciality. Speciality paper-1 (Practical )                          | -        | -        | 2         | 1         | 20         | 80         | 100        |
| 7    | Clinical training (CT-I)                                                                                    | -        | -        | 16        | 8         | 20         | 80         | 100        |
| 8    | Dissertation (DSS-I)                                                                                        | -        | -        | 6         | 3         | 100        | -          | 100        |
|      | <b>TOTAL</b>                                                                                                | <b>9</b> | <b>-</b> | <b>30</b> | <b>24</b> | <b>320</b> | <b>480</b> | <b>800</b> |

**Course Structure M.Sc. Medical Lab Technology**

| S.NO | SUBJECT                                | L         | T        | P        | C         | Max. Marks |            |            |
|------|----------------------------------------|-----------|----------|----------|-----------|------------|------------|------------|
|      |                                        |           |          |          |           | INT        | EXT        | TOTAL      |
| 1    | Research Methodology and Biostatistics | 3         | -        | -        | 3         | 40         | 60         | 100        |
| 2    | Immunology                             | 2         | -        | -        | 2         | 40         | 60         | 100        |
| 3    | General & Nutritional Biochemistry     | 3         | -        | 2        | 4         | 40         | 60         | 100        |
| 4    | General Microbiology                   | 2         | -        | -        | 2         | 40         | 60         | 100        |
| 5    | Haematology                            | 2         | -        | -        | 2         | 40         | 60         | 100        |
| 6    | General Pathology                      | 2         | -        | -        | 2         | 40         | 60         | 100        |
| 7    | QC in Clinical Lab                     | 2         | -        | -        | 2         | 40         | 60         | 100        |
| 8    | Clinical Postings - I                  | -         | -        | 6        | 3         | 100        | -          | 100        |
|      | <b>TOTAL</b>                           | <b>16</b> | <b>-</b> | <b>8</b> | <b>20</b> | <b>380</b> | <b>420</b> | <b>800</b> |

**Course Structure M.Sc. Molecular Medicine and Stem Cell Technology**

| S.NO | SUBJECT                                                   | L         | T        | P        | C         | Max. Marks |            |            |
|------|-----------------------------------------------------------|-----------|----------|----------|-----------|------------|------------|------------|
|      |                                                           |           |          |          |           | INT        | EXT        | TOTAL      |
| 1    | Research Methodology, Biostatistics and Systematic Review | 3         | -        | -        | 3         | 40         | 60         | 100        |
| 2    | Medical Biochemistry                                      | 3         | -        | 2        | 4         | 40         | 60         | 100        |
| 3    | Cell Biology                                              | 4         | -        | -        | 4         | 40         | 60         | 100        |
| 4    | Human Physiology                                          | 3         | -        | -        | 3         | 40         | 60         | 100        |
| 5    | Fundamentals of Molecular Biology                         | 2         | -        | -        | 2         | 40         | 60         | 100        |
| 6    | Model systems for Biomedical Research                     | 2         | -        | -        | 2         | 40         | 60         | 100        |
| 7    | Mammalian Cell Culture Lab                                | -         | -        | 2        | 1         | 40         | 60         | 100        |
| 8    | Experimental Animal Lab                                   | -         | -        | 2        | 1         | 40         | 60         | 100        |
| 9    | Stress Management                                         | 1         | -        | -        | 1         | 100        | -          | 100        |
|      | <b>TOTAL</b>                                              | <b>18</b> | <b>-</b> | <b>6</b> | <b>21</b> | <b>420</b> | <b>480</b> | <b>900</b> |

### Course Structure Master of Public Health

| S.NO | SUBJECT                                   | L         | T        | P         | C         | Max. Marks |            |             |
|------|-------------------------------------------|-----------|----------|-----------|-----------|------------|------------|-------------|
|      |                                           |           |          |           |           | INT        | EXT        | TOTAL       |
| 1    | Foundations of Public Health              | 2         | -        | -         | 2         | 40         | 60         | 100         |
| 2    | Principles of Epidemiology                | 2         | -        | 2         | 3         | 40         | 60         | 100         |
| 3    | Basics of Biostatistics                   | 2         | -        | 2         | 3         | 40         | 60         | 100         |
| 4    | Social Determinants of Health             | 2         | -        | -         | 2         | 40         | 60         | 100         |
| 5    | Health Systems and Policy                 | 2         | -        | -         | 2         | 40         | 60         | 100         |
| 6    | Research Methodology in Public Health     | 2         | -        | 2         | 3         | 40         | 60         | 100         |
| 7    | Public Health Anthropology                | 1         | -        | -         | 1         | 40         | 60         | 100         |
| 8    | Population Cohort in Communities          | -         | -        | 2         | 1         | 40         | 60         | 100         |
| 9    | Public Health Communications              | 1         | -        | -         | 1         | 40         | 60         | 100         |
| 10   | Community-Based Health Surveys            | -         | -        | 2         | 1         | 40         | 60         | 100         |
| 11   | Industrial Exposure                       | -         | -        | 2         | 1         | 40         | 60         | 100         |
| 12   | Basics of Parasitology and Vector Biology | 1         | -        | -         | 1         | 40         | 60         | 100         |
| 13   | Case Studies Discussions                  | -         | -        | 2         | 1         | 40         | 60         | 100         |
|      | <b>TOTAL</b>                              | <b>15</b> | <b>0</b> | <b>14</b> | <b>22</b> | <b>520</b> | <b>780</b> | <b>1300</b> |