



**INTEGRAL UNIVERSITY, LUCKNOW**  
**INTEGRAL INSTITUTE OF ALLIED HEALTH SCIENCES & RESEARCH**  
**DEPARTMENT OF PARAMEDICAL SCIENCES**

**BACHELOR OF SCIENCE IN MEDICAL LABORATORY**  
**TECHNOLOGY**  
**(B.Sc.MLT)**

**SYLLABUS AND EVALUATION SCHEME**  
**YEAR/ SEMESTER**  
**I/I & I/II**  
**&**  
**PEOs-POs-PSOs**



**Integral University, Lucknow**  
**Department of Paramedical Sciences**  
**Study and Evaluation Scheme**

**Program: B.Sc.MLT**

**Semester-I**

| S. N.            | Course code | Course Title                     | Type of Paper | Period Per hr/week/sem |           |           | Evaluation Scheme |            |            |            | Sub. Total | Credit    | Total Credits |
|------------------|-------------|----------------------------------|---------------|------------------------|-----------|-----------|-------------------|------------|------------|------------|------------|-----------|---------------|
|                  |             |                                  |               | L                      | T         | P         | CT                | TA         | Total      | ESE        |            |           |               |
| <b>THEORIES</b>  |             |                                  |               |                        |           |           |                   |            |            |            |            |           |               |
| 1                | LT101       | Human Anatomy- I                 | Core          | 3                      | 1         | 0         | 40                | 20         | 60         | 40         | 100        | 3:1:0     | 4             |
| 2                | LT102       | Human Physiology-I               | Core          | 3                      | 1         | 0         | 40                | 20         | 60         | 40         | 100        | 3:1:0     | 4             |
| 3                | LT103       | Basic of Biochemistry            | Core          | 3                      | 1         | 0         | 40                | 20         | 60         | 40         | 100        | 3:1:0     | 4             |
| 4                | LT104       | Community Health Care Issues     | Core          | 3                      | 1         | 0         | 40                | 20         | 60         | 40         | 100        | 3:1:0     | 4             |
| 5                | LN101       | Basic Professional Communication | Core          | 2                      | 1         | 0         | 40                | 20         | 60         | 40         | 100        | 2:1:0     | 3             |
| 6                | CS103       | Introduction to Computers        | Core          | 2                      | 1         | 0         | 40                | 20         | 60         | 40         | 100        | 2:1:0     | 3             |
| <b>PRACTICAL</b> |             |                                  |               |                        |           |           |                   |            |            |            |            |           |               |
| 1                | LT105       | Human Anatomy- I Lab             | Core          | 0                      | 0         | 2         | 40                | 20         | 60         | 40         | 100        | 0:0:1     | 1             |
| 2                | LT106       | Human Physiology-I Lab           | Core          | 0                      | 0         | 2         | 40                | 20         | 60         | 40         | 100        | 0:0:1     | 1             |
| 3                | LT107       | Basic of Biochemistry-I Lab      | Core          | 0                      | 0         | 2         | 40                | 20         | 60         | 40         | 100        | 0:0:1     | 1             |
| <b>Total</b>     |             |                                  |               | <b>16</b>              | <b>06</b> | <b>06</b> | <b>360</b>        | <b>180</b> | <b>540</b> | <b>360</b> | <b>900</b> | <b>25</b> | <b>25</b>     |

| S. N.            | Course code | Course Title                     | Type of Paper | Attributes    |                  |                   |                 |                              |             |                     | United Nation Sustainable Development Goal (SDGs) |
|------------------|-------------|----------------------------------|---------------|---------------|------------------|-------------------|-----------------|------------------------------|-------------|---------------------|---------------------------------------------------|
|                  |             |                                  |               | Employability | Entrepreneurship | Skill Development | Gender Equality | Environment & Sustainability | Human Value | Professional Ethics |                                                   |
| <b>THEORIES</b>  |             |                                  |               |               |                  |                   |                 |                              |             |                     |                                                   |
| 1                | LT101       | Human Anatomy- I                 | Core          | √             | √                | √                 |                 |                              | √           | √                   | 3,4                                               |
| 2                | LT102       | Human Physiology-I               | Core          | √             | √                | √                 | √               |                              | √           | √                   | 3,4                                               |
| 3                | LT103       | Basic of Biochemistry            | Core          | √             | √                | √                 | √               |                              | √           | √                   | 3,4                                               |
| 4                | LT104       | Community Health Care Issues     | Core          | √             | √                | √                 | √               |                              | √           | √                   | 3,4                                               |
| 5                | LN101       | Basic Professional Communication | Core          |               |                  | √                 |                 |                              |             |                     | 3,4,11                                            |
| 6                | CS103       | Introduction to Computers        | Core          | √             | √                | √                 | √               |                              | √           | √                   | 3,4                                               |
| <b>PRACTICAL</b> |             |                                  |               |               |                  |                   |                 |                              |             |                     |                                                   |
| 1                | LT105       | Human Anatomy- I Lab             | Core          | √             | √                | √                 | √               |                              | √           | √                   | 3,4                                               |
| 2                | LT106       | Human Physiology-I Lab           | Core          | √             | √                | √                 | √               |                              | √           | √                   | 3,4                                               |
| 3                | LT107       | Basic of Biochemistry-I Lab      | Core          | √             | √                | √                 | √               |                              | √           | √                   | 3,4                                               |

**L:** Lecture      **T:** Tutorials      **P:** Practical      **CT:** Class Test      **TA:** Teacher Assessment      **ESE:** End Semester Examination,  
**AE=** Ability enhancement, **DSE-** Discipline Specific Elective, **Sessional Total:** Class Test + Teacher Assessment      **Subject Total:** Sessional Total + End Semester Examination (ESE)



**Integral University, Lucknow**  
**Department of Paramedical Sciences**  
**Study and Evaluation Scheme**

**Program: B.Sc. MLT**

**Semester-II**

| S. N.            | Course code | Course Title                                                    | Type of Paper | Period Per hr/week/sem |           |           | Evaluation Scheme |            |            |            | Sub. Total  | Credit    | Total Credits |
|------------------|-------------|-----------------------------------------------------------------|---------------|------------------------|-----------|-----------|-------------------|------------|------------|------------|-------------|-----------|---------------|
|                  |             |                                                                 |               | L                      | T         | P         | CT                | TA         | Total      | ESE        |             |           |               |
| <b>THEORIES</b>  |             |                                                                 |               |                        |           |           |                   |            |            |            |             |           |               |
| 1                | LT108       | Human Anatomy-II                                                | Core          | 2                      | 1         | 0         | 40                | 20         | 60         | 40         | 100         | 2:1:0     | 3             |
| 2                | LT109       | Human Physiology-II                                             | Core          | 2                      | 1         | 0         | 40                | 20         | 60         | 40         | 100         | 2:1:0     | 3             |
| 3                | LT110       | Medical Biochemistry-I                                          | Core          | 3                      | 1         | 0         | 40                | 20         | 60         | 40         | 100         | 3:1:0     | 4             |
| 4                | LT111       | Introduction to Pathology, Hematology & Clinical Pathology      | Core          | 3                      | 1         | 0         | 40                | 20         | 60         | 40         | 100         | 3:1:0     | 4             |
| 5                | LT112       | Medical Law & Ethics                                            | Core          | 3                      | 1         | 0         | 40                | 20         | 60         | 40         | 100         | 3:1:0     | 4             |
| 6                | LN131       | Effective Communication and Media Studies in English            | Core          | 2                      | 1         | 0         | 40                | 20         | 60         | 40         | 100         | 2:1:0     | 3             |
| <b>PRACTICAL</b> |             |                                                                 |               |                        |           |           |                   |            |            |            |             |           |               |
| 1                | LT113       | Human Anatomy-II - Lab                                          | Core          | 0                      | 0         | 2         | 40                | 20         | 60         | 40         | 100         | 0:0:1     | 1             |
| 2                | LT114       | Human Physiology-II - Lab                                       | Core          | 0                      | 0         | 2         | 40                | 20         | 60         | 40         | 100         | 0:0:1     | 1             |
| 3                | LT115       | Medical Biochemistry-I - Lab                                    | Core          | 0                      | 0         | 2         | 40                | 20         | 60         | 40         | 100         | 0:0:1     | 1             |
| 4                | LT116       | Introduction to Pathology, Hematology & Clinical Pathology- Lab | Core          | 0                      | 0         | 2         | 40                | 20         | 60         | 40         | 100         | 0:0:1     | 1             |
| <b>Total</b>     |             |                                                                 |               | <b>15</b>              | <b>06</b> | <b>08</b> | <b>400</b>        | <b>200</b> | <b>600</b> | <b>400</b> | <b>1000</b> | <b>25</b> | <b>25</b>     |

| S. N.            | Course code | Course Title                                                   | Type of Paper | Attributes    |                  |                   |                 |                              |             | United Nation Sustainable Development Goal (SDGs) |                     |
|------------------|-------------|----------------------------------------------------------------|---------------|---------------|------------------|-------------------|-----------------|------------------------------|-------------|---------------------------------------------------|---------------------|
|                  |             |                                                                |               | Employability | Entrepreneurship | Skill Development | Gender Equality | Environment & Sustainability | Human Value |                                                   | Professional Ethics |
| <b>THEORIES</b>  |             |                                                                |               |               |                  |                   |                 |                              |             |                                                   |                     |
| 1                | LT108       | Human Anatomy-II                                               | Core          | √             | √                | √                 | √               |                              | √           | √                                                 | 3,4                 |
| 2                | LT109       | Human Physiology-II                                            | Core          | √             | √                | √                 | √               |                              | √           | √                                                 | 3,4                 |
| 3                | LT110       | Medical Biochemistry-I                                         | Core          | √             | √                | √                 | √               |                              | √           | √                                                 | 3,4                 |
| 4                | LT111       | Introduction to Pathology, Hematology & Clinical Pathology     | Core          | √             | √                | √                 | √               |                              | √           | √                                                 | 3,4                 |
| 5                | LT112       | Medical Law & Ethics                                           | Core          |               |                  |                   |                 | √                            |             |                                                   | 3,4                 |
| 6                | LN131       | Effective Communication and Media Studies in English           | Core          |               |                  | √                 |                 |                              |             |                                                   | 3,4, 11             |
| <b>PRACTICAL</b> |             |                                                                |               |               |                  |                   |                 |                              |             |                                                   |                     |
| 1                | LT113       | Human Anatomy-II - Lab                                         | Core          | √             | √                | √                 | √               |                              | √           | √                                                 | 3,4                 |
| 2                | LT114       | Human Physiology-II - Lab                                      | Core          | √             | √                | √                 | √               |                              | √           | √                                                 | 3,4                 |
| 3                | LT115       | Medical Biochemistry-I - Lab                                   | Core          | √             | √                | √                 | √               |                              | √           | √                                                 | 3,4                 |
| 4                | LT116       | Introduction to Pathology, Hematology & Clinical Pathology-Lab | Core          | √             | √                | √                 | √               |                              | √           | √                                                 | 3,4                 |

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**BACHELOR OF SCIENCE IN MEDICAL LABORATORY  
TECHNOLOGY  
(B.Sc.MLT)**



**Program Educational Outcomes  
(PEOs)**

## Program Educational Outcomes (PEOs)

The PEOs are broad statements that describe the career and professional accomplishments that the program is preparing its graduates to achieve in few years subsequent to receiving the degree. The PEO's of the B.Sc. MLT program are as follows and the graduates of the Integral University forensic science program will be expected to:

|              |                                                                                                                                                                                                            |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PEO1:</b> | Upgrade knowledge and skills in a changing healthcare scenario. Communicate with other members of healthcare team, customers and patients in an effective manner.                                          |
| <b>PEO2:</b> | Should be able to extrapolate data acquired. Perform routine clinical laboratory testing.                                                                                                                  |
| <b>PEO3:</b> | Make specimen-oriented decisions on predetermined criteria including working knowledge of critical values. Process information and ensure quality control as appropriate to routine laboratory procedures. |
| <b>PEO4:</b> | Train students in routine laboratory procedure. Should know the logical interpretation of clinical lab investigations.                                                                                     |
| <b>PEO5:</b> | Should be able to working on automated machine. Every individual to address problem solving and judgement in efficient manner.                                                                             |

**BACHELOR OF SCIENCE IN MEDICAL LABORATORY  
TECHNOLOGY  
(B.Sc.MLT)**



**PROGRAMME OUTCOMES  
(POs)**

**PROGRAMME OUTCOMES (POs) POs and its Attributes: -**

- Program Outcomes (POs) are attributes of the graduates of the Programme that are THE Medical laboratory Technologist Programme is to prepare students to deals with all the clinical laboratory investigations on clinical samples for laboratory diagnosis of various diseases. Blood, tissue and body fluids are analyzed and examined for various types of foreign organisms and abnormalities. This information is then used by the medical team to make decisions regarding a patient's medical care. 85% of all medical decisions are based on the results of clinical laboratory investigation reports. The graduates of Medical laboratory Technologist Programme of the Integral University will be expected to:

|               |                                                                                                                                                                                                                                             |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>PO-1:</b>  | Collection and receiving of specimens (infectious samples i.e. blood, urine, stool, sputum, pus, semen, tissues and body fluids) for various biochemical, pathological, microbiological, haematological and blood bank investigations, etc. |
| <b>PO-2:</b>  | To perform and validate various investigations for the purpose of differential diagnosis.                                                                                                                                                   |
| <b>PO-3:</b>  | Calibration and standardization of glassware 's and other laboratory equipment.                                                                                                                                                             |
| <b>PO-4:</b>  | Standardization and selection of test analytical procedures.                                                                                                                                                                                |
| <b>PO-5:</b>  | Maintenance of supplies of laboratory reagents / diagnostic kits.                                                                                                                                                                           |
| <b>PO-6:</b>  | Evaluation of reagents and diagnostic kit for diagnostic suitability.                                                                                                                                                                       |
| <b>PO-7:</b>  | Maintenance of quality control for reliability of laboratory reports.                                                                                                                                                                       |
| <b>PO-8:</b>  | Preparation of chemical and biological reagents.                                                                                                                                                                                            |
| <b>PO-9:</b>  | Supervision, organization of work and personnel management.                                                                                                                                                                                 |
| <b>PO-10:</b> | Maintenance of records and preparation.                                                                                                                                                                                                     |
| <b>PO-11:</b> | Then they analyze the results and relay them to physicians.                                                                                                                                                                                 |
| <b>PO-12:</b> | With increasing automation and the use of computer technology, the work of Technologists has become less hands-on and more analytical.                                                                                                      |

**BACHELOR OF SCIENCE IN MEDICAL LABORATORY  
TECHNOLOGY  
(B.Sc.MLT)**



**Program Specific Outcomes  
(PSOs)**



**BACHELOR OF SCIENCE IN MEDICAL LABORATORY TECHNOLOGY  
(B.Sc.MLT)  
PROGRAMME SPECIFIC OUTCOME (PSOs)**

Program Specific Objectives (PSOs) are specific statements that describe the professional career accomplishment that the program is designed. The PSO's of the B. Sc. MLT program are as follows:

|              |                                                                                                                                        |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>PSO1:</b> | Students will be able to know about the Clinical samples collection handling, preservation & processing.                               |
| <b>PSO2:</b> | The student able to perform and validate various investigations for the purpose of differential diagnosis.                             |
| <b>PSO3:</b> | Maintenance of quality control for reliability of laboratory reports                                                                   |
| <b>PSO4:</b> | Supervision, organization of work and personnel management.                                                                            |
| <b>PSO5:</b> | With increasing automation and the use of computer technology, the work of Technologists has become less hands-on and more analytical. |