

# **B. VOC**

## **In**

# **MEDICAL LAB TECHNOLOGY**

## **(UGC)**

### **Program Learning Outcomes:**

- PLO1: Perform routine clinical laboratory procedures within acceptable quality control parameters in Hematology, Biochemistry, Immunohematology, and Microbiology under the general supervision of a Clinical Laboratory Scientist or Pathologist.
- PLO2: Demonstrate technical skills, social behavior, and professional awareness incumbent upon a laboratory technician
- PLO3: Apply systematized problem solving techniques to identify and correct procedural errors, identify instrument malfunctions and seek proper supervisory assistance, and verify the accuracy of laboratory results obtained.
- PLO4: Operate and maintain laboratory equipment, utilizing appropriate quality control and safety procedures.
- PLO5: Recognize and participate in activities which will provide current knowledge and upgrading of skills in laboratory medicine.
- PLO6: Demonstrate a strong understanding of human anatomy, physiology, biochemistry, and microbiology.
- PLO7: Master a wide range of laboratory techniques, including sample collection, preparation, and analysis.
- PLO8: Acquire knowledge of various clinical pathology tests, such as hematology, clinical chemistry, and immunology.
- PLO9: Develop proficiency in microbiological techniques, including culture, staining, and identification of microorganisms and gain knowledge of blood group systems, blood component therapy, and transfusion reactions.

**TOTAL DURATION OF COURSE: 3 Years**

- ✓ After completion of Year - 1 Diploma is awarded.
- ✓ After completion of Year - 2 Advance Diploma is awarded.
- ✓ After completion of Year - 3 B. VOC Degree is awarded.

**Maulana Abul Kalam Azad University of Technology, West Bengal**  
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**B.Voc. in Medical Lab Technology (UGC)**  
**(Effective for Academic Session 2024-2025)**  
**Year - 1 - Diploma (SEMESTER - I)**  
**Corresponding NSQF Level 5**

| Course                                                  | Component | Theory / Practical /<br>Sessional | Internal (Theory/Skill) | External (Theory/Skill) | Internal (Practical) | External (Practical /<br>Sessional) | Credit |   |   |
|---------------------------------------------------------|-----------|-----------------------------------|-------------------------|-------------------------|----------------------|-------------------------------------|--------|---|---|
|                                                         |           |                                   |                         |                         |                      |                                     | L      | T | P |
| UGEN - 101<br>ENGLISH LANGUAGE AND COMMUNICATIVE SKILLS | Generic   | Theory                            | 30                      | 70                      | -                    | -                                   | 3      | 1 | - |
| UMLTV – 101<br>MICROBIOLOGY - I                         | Skill     | Theory                            | 30                      | 70                      | -                    | -                                   | 3      | 1 | - |
| UMLTV – 102<br>FUNDAMENTALS OF ANATOMY & PHYSIOLOGY     | Skill     | Theory                            | 30                      | 70                      | -                    | -                                   | 3      | 1 | - |
| UMLTV – 191<br>MICROBIOLOGY LAB - I                     | Skill     | Practical                         | -                       | -                       | 40                   | 60                                  | -      | - | 3 |
| UMLTV - 192<br>FUNDAMENTALS OF ANATOMY & PHYSIOLOGY LAB | Skill     | Practical                         | -                       | -                       | 40                   | 60                                  | -      | - | 3 |
| UGEN – 181<br>ENGLISH LANGUAGE LAB                      | Generic   | Sessional                         | -                       | -                       | -                    | 100                                 | -      | - | 2 |
| UGEN – 182<br>COMPUTER FUNDAMENTALS & IT                | Generic   | Sessional                         | -                       | -                       | -                    | 100                                 | -      | - | 4 |
| UMLTV - 181<br>LABORATORY SCIENCE & HUMAN BODY          | Skill     | Sessional                         | -                       | -                       | -                    | 100                                 | -      | - | 4 |

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**Year - 1 - Diploma (SEMESTER - II)**  
**Corresponding NSQF Level 5**

| Course                                                                     | Component | Theory / Practical / Sessional | Internal (Theory/Skill) | External (Theory/Skill) | Internal (Practical) | External (Practical / Sessional) | Credit |   |   |
|----------------------------------------------------------------------------|-----------|--------------------------------|-------------------------|-------------------------|----------------------|----------------------------------|--------|---|---|
|                                                                            |           |                                |                         |                         |                      |                                  | L      | T | P |
| UMLTV - 201<br>ADVANCED LABORATORY SCIENCE TECHNIQUES & TESTING PROCESS    | Skill     | Theory                         | 30                      | 70                      | -                    | -                                | 3      | 1 | - |
| UMLTV - 202<br>MICROBIOLOGY - II                                           | Skill     | Theory                         | 30                      | 70                      | -                    | -                                | 3      | 1 | - |
| UMLTV - 203<br>BIOCHEMISTRY - I                                            | Skill     | Theory                         | 30                      | 70                      | -                    | -                                | 3      | 1 | - |
| UMLTV - 291<br>ADVANCED LABORATORY SCIENCE TECHNIQUES & TESTING PROCESSLAB | Skill     | Practical                      | -                       | -                       | 40                   | 60                               | -      | - | 2 |
| UMLTV - 292<br>MICROBIOLOGY LAB - II                                       | Skill     | Practical                      | -                       | -                       | 40                   | 60                               | -      | - | 2 |
| UMLTV - 293<br>BIOCHEMISTRY LAB - I                                        | Skill     | Practical                      | -                       | -                       | 40                   | 60                               | -      | - | 2 |
| UGEN - 281<br>SOFT SKILL & PERSONALITY DEVELOPMENT                         | Generic   | Sessional                      | -                       | -                       | -                    | 100                              | -      | - | 4 |
| UGEN - 282<br>BUSINESS ANALYSIS: ENVIRONMENT, SALES & MARKETING            | Generic   | Sessional                      | -                       | -                       | -                    | 100                              | -      | - | 4 |
| UMLTV - 281<br>ON JOB TRAINING                                             | Skill     | Sessional                      | -                       | -                       | -                    | 100                              | -      | - | 6 |

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**Year - 2 - Advanced Diploma (SEMESTER - III)**

**Corresponding NSQF Level 6**

| Course                                       | Component | Theory / Practical / Sessional | Internal (Theory/Skill) | External (Theory/Skill) | Internal (Practical) | External (Practical / Sessional) | Credit |   |   |
|----------------------------------------------|-----------|--------------------------------|-------------------------|-------------------------|----------------------|----------------------------------|--------|---|---|
|                                              |           |                                |                         |                         |                      |                                  | L      | T | P |
| UMLTV – 301<br>MICROBIOLOGY - III            | Skill     | Theory                         | 30                      | 70                      | -                    | -                                | 3      | 1 | - |
| UMLTV – 302<br>PATHOLOGY - I                 | Skill     | Theory                         | 30                      | 70                      | -                    | -                                | 3      | 1 | - |
| UMLTV – 303<br>HEMATOLOGY - I                | Skill     | Theory                         | 30                      | 70                      | -                    | -                                | 3      | 1 | - |
| UMLTV - 391<br>MICROBIOLOGY LAB – III        | Skill     | Practical                      | -                       | -                       | 40                   | 60                               | -      | - | 2 |
| UMLTV - 392<br>PATHOLOGY LAB – I             | Skill     | Practical                      | -                       | -                       | 40                   | 60                               | -      | - | 2 |
| UMLTV - 393<br>HEMATOLOGY LAB – I            | Skill     | Practical                      | -                       | -                       | 40                   | 60                               | -      | - | 4 |
| UGEN - 381<br>VALUE EDUCATION & HUMAN RIGHTS | Generic   | Sessional                      | -                       | -                       | -                    | 100                              | -      | - | 4 |
| UGEN - 382<br>BASIC ACCOUNTING               | Generic   | Sessional                      | -                       | -                       | -                    | 100                              | -      | - | 4 |

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**Year - 2 - Advanced Diploma (SEMESTER - IV)**

**Corresponding NSQF Level 6**

| Course                               | Component | Theory / Practical /<br>Sessional | Internal (Theory/Skill) | External (Theory/Skill) | Internal (Practical) | External (Practical /<br>Sessional) | Credit |   |   |
|--------------------------------------|-----------|-----------------------------------|-------------------------|-------------------------|----------------------|-------------------------------------|--------|---|---|
|                                      |           |                                   |                         |                         |                      |                                     | L      | T | P |
| UMLTV - 401<br>BIOCHEMISTRY - II     | Skill     | Theory                            | 30                      | 70                      | -                    | -                                   | 3      | 1 | - |
| UMLTV - 402<br>PATHOLOGY - II        | Skill     | Theory                            | 30                      | 70                      | -                    | -                                   | 3      | 1 | - |
| UMLTV - 403<br>HEMATOLOGY - II       | Skill     | Theory                            | 30                      | 70                      | -                    | -                                   | 3      | 1 | - |
| UMLTV - 491<br>BIOCHEMISTRY LAB – II | Skill     | Practical                         | -                       | -                       | 40                   | 60                                  | -      | - | 2 |
| UMLTV - 492<br>PATHOLOGY LAB – II    | Skill     | Practical                         | -                       | -                       | 40                   | 60                                  | -      | - | 2 |
| UMLTV - 493<br>HEMATOLOGY LAB – II   | Skill     | Practical                         | -                       | -                       | 40                   | 60                                  | -      | - | 2 |
| UGEN - 481<br>ENVIRONMENTAL STUDIES  | Generic   | Sessional                         | -                       | -                       | -                    | 100                                 | -      | - | 4 |
| UGEN - 482<br>QUALITY MANAGEMENT     | Generic   | Sessional                         | -                       | -                       | -                    | 100                                 | -      | - | 4 |
| UMLTV – 481<br>ON JOB TRAINING       | Skill     | Sessional                         | -                       | -                       | -                    | 100                                 | -      | - | 6 |

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**Year - 3 - Degree (SEMESTER - V)**  
**Corresponding NSQF Level 7**

| Course                                        | Component | Theory / Practical /<br>Sessional | Internal (Theory/Skill) | External (Theory/Skill) | Internal (Practical) | External (Practical /<br>Sessional) | Credit |   |   |
|-----------------------------------------------|-----------|-----------------------------------|-------------------------|-------------------------|----------------------|-------------------------------------|--------|---|---|
|                                               |           |                                   |                         |                         |                      |                                     | L      | T | P |
| UMLTV - 501<br>MICROBIOLOGY - IV              | Skill     | Theory                            | 30                      | 70                      | -                    | -                                   | 3      | 1 | - |
| UMLTV - 502<br>PATHOLOGY - III                | Skill     | Theory                            | 30                      | 70                      | -                    | -                                   | 3      | 1 | - |
| UMLTV - 503<br>HEMATOLOGY - III               | Skill     | Theory                            | 30                      | 70                      | -                    | -                                   | 3      | 1 | - |
| UMLTV - 591<br>MICROBIOLOGY LAB – IV          | Skill     | Practical                         | -                       | -                       | 40                   | 60                                  | -      | - | 4 |
| UMLTV - 592<br>PATHOLOGY LAB – III            | Skill     | Practical                         | -                       | -                       | 40                   | 60                                  | -      | - | 3 |
| UMLTV - 593<br>HEMATOLOGY LAB – III           | Skill     | Practical                         | -                       | -                       | 40                   | 60                                  | -      | - | 3 |
| UGEN - 581<br>INDIAN ECONOMY & SOCIAL CHANGES | Generic   | Sessional                         | -                       | -                       | -                    | 100                                 | -      | - | 4 |
| UGEN - 582<br>RESEARCH METHODOLOGY            | Generic   | Sessional                         | -                       | -                       | -                    | 100                                 | -      | - | 4 |

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**Year - 3 - Degree (SEMESTER - VI)**  
**Corresponding NSQF Level 7**

| Course                                                 | Component | Theory / Practical /<br>Sessional | Internal (Theory) | External (Theory) | Internal (Practical) | External (Practical /<br>Sessional) | Credit |   |    |
|--------------------------------------------------------|-----------|-----------------------------------|-------------------|-------------------|----------------------|-------------------------------------|--------|---|----|
|                                                        |           |                                   |                   |                   |                      |                                     | L      | T | P  |
| UGEN - 681<br>GENERAL HUMAN PSYCHOLOGY & HR MANAGEMENT | Generic   | Sessional                         | -                 | -                 | -                    | 100                                 | -      | - | 4  |
| UGEN - 682<br>ENTREPRENEURSHIP DEVELOPMENT PROGRAMME   | Generic   | Sessional                         | -                 | -                 | -                    | 100                                 | -      | - | 4  |
| UMLTV – 681<br>INDUSTRIAL TRAINING                     | Skill     | Sessional                         | -                 | -                 | -                    | 100                                 | -      | - | 14 |
| UMLTV - 691<br>MAJOR PROJECT                           | Skill     | Practical                         | -                 | -                 | 40                   | 60                                  | -      | - | 8  |