



**FACULTY OF HEALTH SCIENCES AND SPORTS**  
**BACHELOR OF SCIENCE IN BIOMEDICAL TECHNOLOGY (MEDICAL LABORATORY TECHNOLOGY)**  
**LEARNING MODULE OUTLINE**

|                       |   |               |   |
|-----------------------|---|---------------|---|
| Academic Year         | 2025/2026   | Semester      | I   |
| Module Code           | BSTL4101  |               |   |
| Learning Module       | Thesis I (專題習作 I)   |               |   |
| Pre-requisite(s)      | Nil   |               |   |
| Medium of Instruction | English / Cantonese   |               |   |
| Credits               | 2   | Contact Hours | 30h                                       |
| Instructor            | <b>Meng Li Rong, Grace</b><br>Lei lun Fan, Miriam<br>Ye Qian Hong, Ivy<br>Lam Im Fong, Cristina | Email         | Irmeng@mpu.edu.mo<br>(Module coordinator) |
| Office                | Room M726<br>Meng Tak Building  | Office Phone  | 85993449                                  |

**MODULE DESCRIPTION**

This course requires students to have an in-depth understanding of a specific topic of medical laboratory science. The core issues of the topic will be identified first. Then the related factors will be investigated. Students will critically review relevant research reports and medical literature to get a thorough understanding of the core issues. Students will be required to submit a research proposal at the end of the course.

**MODULE INTENDED LEARNING OUTCOMES (ILOS)**

On completion of this learning module, students will be able to:

|     |  |
|-----|--|
| M1. | Skills in critical thinking;   |
| M2. | Sensitivity to contemporary issues in medical laboratory science;                                    |
| M3. | Skills of using available evidence in reviewing current practice in medical laboratory science;      |
| M4. | Skills of developing action plans for improving medical laboratory science;                          |
| M5. | Skills of writing proposals for research projects in an academic style and at the publishable level. |



These ILOs aims to enable students to attain the following Programme Intended Learning Outcomes (PILOs):

| PILOs  | M1 | M2 | M3 | M4 | M5 |
|--|----|----|----|----|----|
| P1. To demonstrate understanding of a range of subjects, fields, principles and approaches relevant to medical laboratory technology         | ✓  |    |    |    |    |
| P2. To demonstrate understanding of theories, analytical approaches and practices that underpin medical laboratory operations and management | ✓  |    |    |    |    |
| P3. To demonstrate understanding of major trends and issues related to medical laboratory technology   | ✓  | ✓  |    |    | ✓  |
| P4. To apply professional knowledge and skills to analyse, interpret and solve problems, challenges and risks in medical laboratory practice | ✓  | ✓  | ✓  | ✓  |    |
| P5. To critically appraise and interpret scientific and clinical literature and apply evidence-based practice                                | ✓  | ✓  | ✓  | ✓  | ✓  |
| P6. To acquire and apply research skills in medical laboratory technology  | ✓  |    | ✓  | ✓  |    |
| P7. To demonstrate effective communication and teamwork skills   | ✓  | ✓  | ✓  |    | ✓  |
| P8. To maintain professional and ethical standards in medical laboratory practice and research   | ✓  | ✓  | ✓  |    | ✓  |

#### MODULE SCHEDULE, COVERAGE AND STUDY LOAD

| Week | Content Coverage   | Contact Hours |
|------|--|---------------|
| 1-8  | <p><b>LEARNING ACTIVITIES WILL BE DONE IN GROUPS.</b></p> <p><b>1.IDENTIFICATION OF THE TOPIC AND CORE ISSUES</b></p> <p>1.1 OBSERVE THE PRACTICE IN THE ASSIGNED TOPIC. HAVE A FOCUS ON A CERTAIN ASPECT OF PRACTICE AND EXAMINE THE CURRENT PRACTICE IN TERMS OF THE VARIOUS STAGES OF THE PROCESS – ASSESSMENT, PLANNING, IMPLEMENTATION AND EVALUATION.</p> <p>1.2 PUT TOGETHER THE OBSERVATIONS AND IDENTIFY AN AREA OF CONCERN THAT MAY INVOLVE VARIOUS STAKEHOLDERS INCLUDING LABORATORY TECHNOLOGISTS, LABORATORY TECHNICIANS, OTHER HEALTHCARE PROFESSIONALS, SERVICE-USERS, THE MANAGEMENT, THE COMMUNITY, AND EVEN THE GOVERNMENT.</p> <p>1.3 FROM THE IDENTIFIED CONCERN, DEVELOP A TOPIC FOR IN-DEPTH EXPLORATION. THIS COULD BE A RESEARCH QUESTION, OR SIMPLY A TOPIC OF INTEREST.</p> <p>1.4 DISCUSS THE RELATED ISSUES AND IDENTIFY THE CORE ONES.</p> <p>1.5 LOOK FOR RELATED LITERATURE INCLUDING RESEARCH REPORTS FROM PROFESSIONAL JOURNALS, MASS MEDIA AND GOVERNMENT DOCUMENTS.</p> | 15            |



|      |   |    |
|------|---|----|
| 9-15 | <b>2.FORMULATION OF AN INITIAL PROJECT PLAN / PROPOSAL</b>  | 15 |
|      | 2.1 DEVELOP AN INITIAL VERSION OF EITHER A RESEARCH PROPOSAL OR AN ACTION PLAN FOR IMPROVING THE PRACTICE IN MEDICAL LABORATORY SCIENCE.<br><br>2.2 EXPLAIN THE INITIAL PROPOSAL. |    |

### TEACHING AND LEARNING ACTIVITIES

In this learning module, students will work towards attaining the ILOs through the following teaching and learning activities:

| Teaching and Learning Activities                                     | M1 | M2 | M3 | M4 | M5 |
|--|----|----|----|----|----|
| T1. Understand the frontiers and developments of laboratory medicine | ✓  | ✓  | ✓  | ✓  |    |
| T2. Acquire skills in the design of research proposals               | ✓  | ✓  | ✓  | ✓  |    |
| T3. Master the writing and presentation skills of research proposals |    |    |    |    | ✓  |
| (Add rows where necessary)   |    |    |    |    |    |

### ATTENDANCE

Attendance requirements are governed by the Academic Regulations Governing Bachelor's Degree Programmes of the Macao Polytechnic University. Students who do not meet the attendance requirements for the learning module shall be awarded an 'F' grade.

### ASSESSMENT

In this learning module, students are required to complete the following assessment activities:

| Assessment Activities   | Weighting (%) | ILOs to be Assessed |
|---|---------------|---------------------|
| A1. Research proposal (graded by group teacher)                     | 60%           | M1-M5               |
| A2. Proposal presentation (graded by proposal evaluation committee) | 40%           | M1-M5               |

This learning module is graded on a 100-point scale, with 100 being the highest possible score and 50 being the passing score.

Any students scoring less than 35% of the total mark in the final examination will be given an "F" grade for the module even if the overall grade is 50% or higher.

There is no make-up exam for this module.



The assessment will be conducted following the University's Assessment Strategy (see [www.mpu.edu.mo/teaching\\_learning/en/assessment\\_strategy.php](http://www.mpu.edu.mo/teaching_learning/en/assessment_strategy.php)). Passing this learning module indicates that students will have attained the ILOs of this learning module and thus acquired its credits.

### MARKING SCHEME

| Assessment Activities                                      | Assessment Criteria   | Mark Ranges |                    |              |               |                                    |
|--|---|-------------|--------------------|--------------|---------------|------------------------------------|
|  |   | 88-100      | 73-87              | 58-72        | 50-57         | <50                                |
| A1 Research question description and theoretical framework | Targets are specific and reasonable<br>Research significance<br>Clear theoretical framework   | Excellent   | Good/<br>Very Good | Satisfactory | Marginal Pass | Fail; not reaching marginal levels |
| A2 Research Method and Plan                                | Sampling is reasonable and feasible<br>Research design and technical considerations<br>The research plan is reasonable and perfect<br>Thorough risk assessment, safe and feasible research<br>The budget and procurement plan are reasonable and feasible | Excellent   | Good/<br>Very Good | Satisfactory | Marginal Pass | Fail; not reaching marginal levels |
| A3 Defense performance                                     | Express clearly and clearly<br>Essential and complete<br>Clearly organized<br>Effective use of audio-visual equipment<br>Can answer questions   | Excellent   | Good/<br>Very Good | Satisfactory | Marginal Pass | Fail; not reaching marginal levels |



|  |   |  |  |  |  |  |
|--|---|--|--|--|--|--|
|  | The whole group cooperates well   |  |  |  |  |  |
|  | Whether to participate in the discussion of the defense of other groups |  |  |  |  |  |

### REQUIRED READINGS

As advised by group teachers.

### REFERENCES

As advised by group teachers.

### STUDENT FEEDBACK

At the end of every semester, students are invited to provide feedback on the learning module and the teaching arrangement through questionnaires. Your feedback is valuable for instructors to enhance the module and its delivery for future students. The instructor and programme coordinators will consider all feedback and respond with actions formally in the annual programme review.

### ACADEMIC INTEGRITY

The Macao Polytechnic University requires students to have full commitment to academic integrity when engaging in research and academic activities. Violations of academic integrity, which include but are not limited to plagiarism, collusion, fabrication or falsification, repeated use of assignments and cheating in examinations, are considered as serious academic offenses and may lead to disciplinary actions. Students should read the relevant regulations and guidelines in the Student Handbook which is distributed upon the admission into the University, a copy of which can also be found at [www.mpu.edu.mo/student\\_handbook/](http://www.mpu.edu.mo/student_handbook/).