

University of Macau
Faculty of Science and Technology
Department of Electrical and Computer Engineering

Part A: Course Outline

| | | | |
|---|---|----------------|--------|
| Course Title: | Internship II | | |
| Course Code: | ECEB 260 | Year of Study: | 2 or 3 |
| Course Mode: | Practice | | |
| Compulsory/Elective: | Elective | | |
| Course Prerequisites: | N/A | | |
| Prerequisite Knowledge | | | |
| Class/Laboratory Schedule: | About 12 week's relevant technical working experiences in engineering entity (Minimum of 150 hours). | | |
| Duration | One semester | Credit Units | 1.5 |
| Text Books and References: | N/A | | |
| Course Description: | Students participate to industrial training work in electrical and computer engineering companies, government departments or related entities. The total number of training hours should be no less than 150 hours. | | |
| Topics Covered | | | |
| Course Assessment: | Final Report: 100% Performance appraisal by intern supervisor and workbook are considered as supplemental references. | | |
| Course Objectives: | <ol style="list-style-type: none"> 1. To prepare students to know the actual engineering environment [a, c, e, k]; 2. To prepare students to collect and process the data, results and information in an engineering project [b, k]; 3. To prepare students to prepare an engineering report [b, l]. | | |
| Relationship to Program Objectives and Outcomes | <p>This course primarily contributes to ECE program outcomes that develop students' abilities to:</p> <ol style="list-style-type: none"> a. Ability to apply knowledge of mathematics, science and engineering. b. An ability to design and conduct experiments, as well as to analyze and interpret data. c. Ability to design a system, component or process to meet desired needs. e. Ability to identify, formulate and solve engineering problems. <p>This course secondarily contributes to ECE program outcomes that develop students' abilities to:</p> | | |

| | <p>k. Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.</p> <p>l. Ability to use the computer/IT tools relevant to the discipline along with an understanding of their processes and limitations.</p> | | | | | | | | | | | | |
|---|--|------------------|--------|------------------|---|---|--------|---|--|--------|---|--|---------|
| <p>Course Contents and Relationship to Program Criteria:</p> | <table border="1"> <thead> <tr> <th data-bbox="467 432 563 506">Week no.</th> <th data-bbox="563 432 1289 506">Topics</th> <th data-bbox="1289 432 1460 506">Program Criteria</th> </tr> </thead> <tbody> <tr> <td data-bbox="467 506 563 618">1</td> <td data-bbox="563 506 1289 618"> <p>Introduction to the Internship Arrangement Brief the students of the internship arrangement and issues to be concerned.</p> </td> <td data-bbox="1289 506 1460 618">BS, ES</td> </tr> <tr> <td data-bbox="467 618 563 714">8</td> <td data-bbox="563 618 1289 714"> <p>Internship Carry out the intern in the industrial entity</p> </td> <td data-bbox="1289 618 1460 714">BS, ES</td> </tr> <tr> <td data-bbox="467 714 563 808">3</td> <td data-bbox="563 714 1289 808"> <p>Reporting Prepare and submit the intern report</p> </td> <td data-bbox="1289 714 1460 808">BS, ES,</td> </tr> </tbody> </table> | Week no. | Topics | Program Criteria | 1 | <p>Introduction to the Internship Arrangement Brief the students of the internship arrangement and issues to be concerned.</p> | BS, ES | 8 | <p>Internship Carry out the intern in the industrial entity</p> | BS, ES | 3 | <p>Reporting Prepare and submit the intern report</p> | BS, ES, |
| Week no. | Topics | Program Criteria | | | | | | | | | | | |
| 1 | <p>Introduction to the Internship Arrangement Brief the students of the internship arrangement and issues to be concerned.</p> | BS, ES | | | | | | | | | | | |
| 8 | <p>Internship Carry out the intern in the industrial entity</p> | BS, ES | | | | | | | | | | | |
| 3 | <p>Reporting Prepare and submit the intern report</p> | BS, ES, | | | | | | | | | | | |
| <p>Contribution of Course to meet the professional component:</p> | <p>This course contributes primarily to the students' knowledge of actual engineering tasks. Students should be able to understand the fundamental practices in the actual engineering working environment.</p> | | | | | | | | | | | | |
| <p>Course Instructor(s):</p> | <p>Dr. CHOI Wai Wa, et al.</p> | | | | | | | | | | | | |
| <p>Prepared by:</p> | <p>Dr. CHOI Wai Wa</p> | | | | | | | | | | | | |

Part B: General Course Information and Policies

Instructor: Dr. Choi Wai Wa

Office: E11-3036

Office Hour: Mon.- Wed 3:00-6:00 p.m. or by appointment

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e-mail: welsyc@umac.mo

Programme Educational Objectives

1. **Problem Solving:** Graduates have the ability to think in a critical and evaluative manner and to consider a broad perspective, in order to solve technical and nontechnical problems.
2. **Leadership and Communication:** Graduates will provide effective leadership, act in an ethical manner and possess the abilities to communicate well and to work successfully within diverse groups.
3. **Market Acceptance:** Graduates will have successful careers in the academic environment, industrial and government organizations.
4. **Technical Competence:** Graduates will be technically competent and have a thorough grounding in the fundamentals of math and science in electrical and electronics engineering and experience in engineering design. They will be able to use modern engineering techniques, skills, and tools to fulfill societal needs.

Scale: 1 (Highest) to 4 (Lowest)

| | Problem Solving | Leadership and Communication | Market Acceptance | Technical Competence |
|---------------|------------------------|-------------------------------------|--------------------------|-----------------------------|
| Internship II | 1 | 4 | 2 | 2 |

Remarks:

- Objective for “Problem Solving” can be achieved by completion of the course/intern in industrial entity.
- Objective for “Leadership and Communication” can be achieved by course/intern and report writing. However, leadership training is not given by this course.
- Objective for “Market Acceptance” can be achieved by completion of the course/intern that the technical tasks are assigned by the industries.
- Objective for “Technical Competence” can be achieved by applying fundamentals engineering knowledge and science of electrical and computer engineering in the actual engineering working environment.

Program Criteria Policy:

Course VS Program Criteria

Scale: 1 (Highest) to 4 (Lowest)

| Course | PS | DIC | BS | CS | ES | DE | LA | CV | DM |
|---------------|----|-----|----|----|----|----|----|----|----|
| Internship II | | | 3 | | 2 | | | | |

Terms:

Probability and Statistics (PS), Differential and Integral Calculus (DIC), Basic Science (BS), Computer Science (CS), Engineering Science (ES), Differential Equation (DE), Linear Algebra (LA), Complex Variables (CV), Discrete Mathematics (DM)

Relationship of Course to Programme Outcomes:

Course VS Course Outcomes

| | Program Outcomes | | | | | | | | | | | | |
|-----------------------|------------------|---|----|---|---|---|---|---|---|---|---|---|---|
| | a | b | c | d | e | f | g | h | i | j | k | l | |
| ECEB260 Internship II | T | P | TP | | P | | | | | | | P | P |

***T – TEACH; P – PRACTICE; M – MEASURED**

The outcomes of electrical and computer engineering program are:

- Ability to apply knowledge of mathematics, science and engineering.
- Ability to design and conduct experiments.
- Ability to design a system, component or process to meet desired needs.
- Ability to function on multidisciplinary teams.
- Ability to identify, formulate and solve engineering problems.
- Understanding of professional and ethical responsibility.
- Ability to communicate effectively.
- Broad education necessary to understand the impact of engineering solutions in global and societal context.
- Recognition of the need for and an ability to engage in life-long learning.
- Knowledge of contemporary issues.
- Ability to use the techniques, skills and modern engineering tools necessary for engineering practice.
- Ability to use the computer/IT tools relevant to the discipline along with an understanding of their processes and limitations.

Curriculum Detail

ECEB 260 Internship II

| Timetabled work in hours per week | | | No of teaching weeks | Total hours | No /Duration of exam papers | Max marks available from: | |
|-----------------------------------|-------|----------|----------------------|-------------|-----------------------------|---------------------------|--------|
| Lecturer | Tutor | Practice | | | | Exams | Course |
| | | 40 | 8 | 320 | N/A | | |

Term: 7th

| Hours | | | Percentage content of | | | |
|---------|---------|-------|--------------------------------|----------------------|-----------------------|------------------|
| Lecture | Lab/tut | Other | Mathematics and Basic Sciences | Engineering Subjects | Complementary Studies | Computer Studies |
| 0 | 0/0 | 320 | 40 | 50 | 0 | 10 |

Design Elements

Please use an "X" to indicate the presence of the specific elements in the course/module/subject.

| Design Content in Course Work | Design Project(s) | Design Content in Laboratories |
|-------------------------------|-------------------|--------------------------------|
| | | |

Course Assessment Policy:

- Only "Pass" or "Fail" will be graded to the students for this course.
- The assessment is mainly based on the completion of the internship work during the intern period and evaluation of the submitted report.
- Performance Appraisal by Internship Supervisor from intern partner and workbook are considered as supplemental reference.