**University of Computer Studies, Yangon**
**Faculty of Information Science**

**2019-2020 Academic Year**

**Diploma in Computer Science (D.C.Sc.)**

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| Subject Code | IS-106 | Subject Name | Software Engineering (Elective) |
| No of credit unit | 3 | Course Coordinator | Dr. Khine Khine Oo |
| Online Lecture Hour | 60 hours | Semester | Second |
| Practical Lecture Hour | 28.5 hours (19 Weeks) (1 period : 90 mins) | | |
| Tutorial Test hour | 4.5 hours | | |

## Course Description

This course provides students with theoretical knowledge and practical skills in the use of Software development approach in information technology applications. Over the years technology has been growing fast and changing our lives to make things easier and better for them. The world of computing demands software engineers not only to competent in software development but at the same time they have to fulfill the problems solving skills. This course deals with the problems that ever rising during the software development and students can learn how to tackle this with practically. This course aims to equip students with industry-relevant skills in computer science that are essential for entering the workforce as competent IT professionals.

## Course Objectives

- Understand the software engineering practice
- Undersand the Agility in software development
- Underatand the softwre engineering process,framework,models and modeling language
- Understand the role of project managemet, planning, monitoring,controlling and risk management
- Understand the software testing process and techniques
- Understand how the future trends of software engineering

## Learning Outcomes

At the end this module, the student will:

- Understand the modern software development methodology
- Know a project life cycle, and can skillfully map each stage in the cycle
- Identify the time needed to successfully complete a project, considering factors such as task dependencies and task lengths
- Gain the skills of modeling system
- Demonstrate critical thinking in problem solving
- Negotiate internal stakeholders with information regarding project costs by considering factors such as estimated cost, variances and profits

- Develop a project scope while considering factors such as customer requirements and internal/external goals
- Work effectively in teams.
- Perform a complete testing process, taking into account practical considerations
- Apply the skills that are the focus of this program to business scenarios

**Prerequisites**

None

**Major topic covered in the course**

(1) Software Engineering Practice
(2) Modeling Knowledge
(3) Managing Software Project
(4) Core Principles of Testing
(5) Advanced Software Engineering

**Text Book**

(1) Software Engineering, 10th edition, Ian Sommerville, Pearson Education Limited ,2016
(2) Software Engineering: A Practitioner's Approach, 9th Edition, Roger Pressman and Bruce Maxim, McGraw Hill Education, 2019.

**Reference Books**

(1) Software Engineering: A Practitioner's Approach, 8th Edition, Roger Pressman and Bruce Maxim, McGraw Hill Education, 2014.
(2) Software Engineering: A Practitioner's Approach, 7th Edition, Roger Pressman, McGraw Hill Education, 2010.
(3) Software Engineering, 9th edition, Ian Sommerville, Pearson Education Limited, 2011
(4) Introduction to Project Management, 2nd Edition, Kathy Schwalbe
(5) A Guide to the Project Management Body of Knowledge, 6th Edition,
(6) Software quality Assurance and Testing for Beginners, Nitin C Shah, 2019

**Main course website**

http://www.ucsy.edu.mm
Assignments will be posted here, as will the lecture materials.

**Assessment Plan for the Course**

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| Final Exam | - 50% |
| Tutorial | -10% |
| Quiz/ Discussion | - 10% |
| Project/Presentation | - 15% |
| Assignment/ Practical | - 10% |
| Class Participation | - 5% |

**Course Policy**

**Assigned Readings**: The student is expected to read assignments to prepare for scheduled discussions of the material.

**Attendance**: The student is expected to attend orientation classes, the exam meetings, and scheduled project presentations. Regular class and/or online participation should ensure that expectations are understood, and provide feedback to monitor and assess progress. The student is responsible for accessing the course website to obtain assignments and related materials.

**Participation**: The student is expected to take part in class or online discussions, implement and test software and program examples, and assist class members with technical issues.

**Lab projects**: It is expected that the student will begin each project when assigned or as topics are approved, then present system components by the scheduled progress reporting dates. The Lab project schedule and book format are going to be confirmed during the lecture course.

**Exams and Tutorial test**: The student is expected to complete each exam and tutorial test at the scheduled time. All exams and tutorial are based upon all learning objectives to be reached before the scheduled date. Final Exam date is declared at the time table of course schedule and the tutorial test schedule are going to be confirmed during the lecture course.

**Intellectual Honesty**: By departmental policy, the discovery of plagiarism (i.e. copying from another's exam paper or lab project) will result in a grade of "F" on that submission for an individual grade. A subsequent breach of this policy mandates a grade of "F" for the course.