**Introduction**

Software Engineering is the application of a systematic, disciplined, quantifiable approach to the design, development, operation, and maintenance of software, and the study of these approaches; that is, the application of engineering to software.

The course will be delivered pedagogically to students by combining concepts, latest information, feasible methods and scientific ways. In doing so, students will learn the essence of software engineering, including the related fields of programming language, mathematics, systems analysis, software design and quality management. Related knowledge will be imparted professionally to students through basic theory, practical projects, and industrial training to enhance students’ analytical, programming and software design skills. Besides, the course will train students to express themselves clearly and communicative. Concurrently, students are taught to appreciate technology scientifically. By the end of this course, self-study and self-improvement are enhanced as well. We have faith our graduates are innovative and able to compete internationally in current challenging world toward successful careers.

**Programme Objectives (POs)**

The objectives of the programme are:

**PEO 1**

To produce graduates who can utilize state-of-the-art knowledge, suitable methodologies and scientific approaches in requirements analysis, design, evaluation, implementation, maintenance and evolution of high quality software systems.

**PEO2**

To produce graduates who are capable of undertaking analysis, research and development in the field of software engineering and software-related technology.

**PEO3**

To produce graduates who are able to demonstrate consistent professional ethics with high integrity.

**PEO4**

To produce graduates who have knowledge of managerial and problem-solving skills for independent and lifelong learning.

**PEO 3**

To develop the employability skills, knowledge of technopreneurship and managerial skills of the graduates in future employment.

**Program Learning Outcomes (PLOs)**

Our programme learning outcomes are listed as follows:

1. Graduates are able to apply the knowledge and skills they gained in explaining software concepts, analyzing software problems and designing useful software.
2. They are doers who can put programming and analytical skills into practice. Besides that, they are practical person who are always willing to listen, interact and communicate with people.
3. Graduates are responsible to the works assigned to them. They are able to work, cooperate and communicate in groups or teams: team work spirit is highly emphasized.
4. Graduates have good moral responsibility to carry out their duties as software engineers and to work ethically in their workplace and even in society.
5. Graduates are communicative and present their ideas to others in a clear and concise manner. They are able to show their leadership to lead juniors in software development projects or even in management level.
6. Graduates able to think out of the boxes and keep abreast of current development of ICT. They are also able to carry out research work independently or in groups.
7. Graduates are able to use different ways to continue their further study, carry out research and analyze on ICT problems, and accumulate the information and knowledge for their career development.
8. Graduates are trained on the basic programming skills, system analysis process, software engineering, information technology principle and practice studies. The studies thus provide the understanding and platform for graduates to further their interests into entrepreneurship, management and design skills.

**Entry Requirements**

* Matriculation or foundation programmes: At least a CGPA of 2.0 and a credit in SPM Additional Mathematics
* STPM: Full passes in 2 subjects with at least CGPAs of 2.0 and a credit in SPM Additional Mathematics
* UEC: At least 5Bs include Additional Mathematics
* A-level: At least 2Cs in 2 related subjects include SPM Additional Mathematics
* Diploma in Computer Science/Information Technology/Technology System/Software Engineering or other equivalents with at least a CGPA of 2.5 and a credit in Additional Mathematics at SPM Level
* Diploma in other fields: at least a CGPA of 2.5 and a credit in SPM Additional Mathematics
* Candidates with CGPAs between 2.0 and 2.5 are subjected to internal assessment of Southern UC
* Other recognized equivalent qualifications

**Core Subjects**

Java Programming I, Java Programming II, Discrete Mathematics, Quantitative Methods, Introduction to Information Technology, Data Structure and Algorithm, Database Systems, Information Security and Assurance, Software Engineering, Computer Organization and Architecture, Human Computer Interaction, Object-Oriented Programming, Software Testing, Introduction to Networks and Communication Systems, Operating System , Software Design, Software Evolution and Maintenance, Software Process, Social and Professional Issues, Project Management, Software Quality, Object-Oriented System Modelling and Analysis, Web Development, Final Year Project I, Final Year Project II, Industrial Training.

**Course Duration**

3 years full-time course (Total credits required: 123 credits)