COURSE SPECIFICATION

Course Aim and Title	BSc Software Engineering
Intermediate Awards Available	BSc, DipHE, CertHE, University Certificate
Teaching Institution(s)	Ain Shams University, Cairo, Egypt
Alternative Teaching Institutions (for local arrangements see final section of this specification)	N/A
UEL Academic School	Architecture, Computing and Engineering
UCAS Code	N/A
Professional Body Accreditation	N/A
Relevant QAA Benchmark Statements	Computing
Additional Versions of this Course	N/A
Date Specification Last Updated	July 2020

Course Aims and Learning Outcomes

This course is designed to give you the opportunity to:

- Prepare students who are perfectly equipped to deal with the rapidly changing environment of software engineering by teaching them not just how to deploy cutting edge tools and techniques, but how to build the next generation of software tools.
- Introduce a well-integrated balance of theoretical understanding and practical experience to students.
- Emphasize code development as an engineering science and facilitate the project understanding and skills necessary to participate in systematic analysis and software development with an emphasis on design quality, technical evaluation and team working.

What you will learn:

Knowledge

- Understand the current and underlying technologies that support computer processing and inter-computer communication and clarify the importance of product and process quality in the software development process.

- Show mastery of software engineering knowledge and skills of the professional standards necessary to begin practice as a software engineer.
- Describe how the phases of the lifecycle can be managed using different models and understand the properties of good software and how these relate to different types of software.
- Demonstrate understanding of appropriate theories, models, and techniques that provide a basis for problem identification and software analysis, design, development, implementation, verification, documentation and components-based software.

Thinking skills

- Evaluate the performance of software systems.
- Measure and interpret the appropriateness of a computer system for its current deployment and future evolution based on scientific criteria.
- Analyze problems from written descriptions and derive requirements specifications from an understanding of problems (analysis, synthesis).
- Make decisions on appropriate solutions for problems in software design and development.
- Analyze risks and economical aspects in the management of software projects.

Subject-Based Practical skills

- Design appropriate solutions in many application domains using software engineering approaches that integrate ethical, social, legal, and economic concerns.
- Use software tools to collect, interpret data and develop UML system models.
- Deploy the appropriate equipment and tools used for the construction, maintenance, and documentation of desktop and web-based applications.
- Use tools to automate software development phases and the related programming languages, tools, design methodologies, and database systems.

Skills for life and work (general skills)

- Collaborate effectively in a multidisciplinary team.
- Work in stressful environment and within constraints.
- Prepare technical reports to a professional standard.
- Reveal communication skills, public speaking and presentation skills, and delegation, writing skills, oral delivery, and effectively using various media for a variety of audiences.
- Demonstrate critical thinking, analytical thinking and the ability to solve problems.

Learning and Teaching

Knowledge is developed through

- Attending lectures / guest presentations
- Knowledge-based activities with feedback
- Online discussions and activities
- Guided reading
- Preparation for examinations and timed controlled assignments

Thinking skills are developed through

- Reflective activities with feedback
- Tutorial activities and discussions
- Online discussions and activities
- Preparation of coursework assignments

Practical skills are developed through

- IT activities with feedback
- Research skills-based activities with feedback
- Seminar preparation and presentations
- Applying technical regulations to given scenarios
- Application to real life and simulated case studies

Skills for life and work (general skills) are developed through

- Planning activities with feedback
- Project and teamwork
- Holding seminars and presentations
- Using specialized ICT and software

Assessment

The assessment methods to achieve the different learning outcomes are as follows:

Knowledge is assessed by

- Project work
- Coursework
- Reports
- Examinations
- Individual oral presentations

Thinking skills are assessed by

- Project work
- Coursework
- Time controlled assessments
- Individual oral presentations

Practical skills are assessed by

- Project work
- Practical reports
- Portfolio completion
- Timed controlled assessments

Skills for life and work (general skills) are assessed by

- Project work
- Group work
- Coursework

Students with disabilities and/or particular learning needs should discuss assessments with the course leader to ensure they are able to fully engage with all assessments within the course.

Work or Study Placements

We encourage full time students to seek work experience during their academic course, especially during the summer vacations period.

Course Structure

The course follows the British system: One academic year covers 120 credits.
All courses are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to one of 5 levels:

3   Equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree course.

4   Equivalent in standard to the first year of a full-time undergraduate degree course.

5   Equivalent in standard to the second year of a full-time undergraduate degree course.

6   Equivalent in standard to the third year of a full-time undergraduate degree course.

7   Equivalent in standard to a Masters degree.

Courses are made up of modules that are each credit weighted.

The course structure of this course:

Level	Module Code	Module Title	Credit Weighting	Core/Option	Available by Distance Learning? Y/N
4	CN4108	Fundamentals of Programming	20	Core	N
4	CN4109	Mathematics for Computer Scientists	20	Core	N
4	CN4110	Digital Design and Computer Architecture	20	Core	N
4	CN4111	Software Engineering and Communication Skills	20	Core	N
4	CN4112	Database Systems and Reports	20	Core	N
4	CN4113	Statistical Data Mining	20	Core	N
5	CN5124	AI for Safety Critical Systems	20	Core	N
5	CN5123	Software Requirements Engineering	20	Core	N
5	CN5125	Algorithms and Design Patterns	20	Core	N
5	CN5126	Computer Networks and Operating Systems	20	Core	N
5	CN5127	Computer Graphics and Software Metrics	20	Core	N
5	CN5128	Real-Time Web Engineering	20	Core	N

6	CN6124	Agile Software Development and Maintenance	20	Core	N
6	CN6125	Software Testing and Management	20	Core	N
6	CN6126	Advanced Analytics and Interface Design	20	Core	N
6	CN6127	Software Development Models	20	Core	N
6	CN6128	Project	40	Core	N

Additional details about the course module structure:

A core module for a course is a module which a student must have passed (i.e. been awarded credit) in order to achieve the relevant named award. An optional module for a course is a module selected from a range of modules available on the course.

The overall credit-rating of this course is 360 credits. If for some reason you are unable to achieve this credit you may be entitled to an intermediate award, the level of the award will depend on the amount of credit you have accumulated.

Course Specific Regulations

N/A

Typical Duration

This is a full-time study course. The expected duration of this course is three (3) full-time / 6 Terms

A student cannot normally continue study on a course after 4 years of study in full time mode unless exceptional circumstances apply and extenuation has been granted.

Further Information

More information about this course is available on:

•The ASU-CHP web site (http://chp-cis.asu.edu.eg/)
•The course handbook
•Module study guides
•For further information, contact the CHP via email: CHP@cis.asu.edu.eg

All faculty of Computer and Information Sciences, Ain Shams University courses are subject to thorough course approval procedures and quality check by the National Authority for Quality Assurance and Accreditation in Education (NAQAAE) before we allow them to commence. We also constantly monitor, review and enhance our courses by listening to student and employer views and the views of external examiners and advisors.

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Alternative Locations of Delivery

N/A