AIN SHAMS UNIVERSITY – FACULTY OF ENGINEERING (ASU – FoE)

IN COLLABORATION WITH

SCHOOL OF ARCHITECTURE, COMPUTING AND ENGINEERING

BSc (Hons) in
Computer Engineering and Software Systems

Programme Handbook

Academic Year 2019-2020

CONTENTS

1 WELCOME AND INTRODUCTION

This handbook is intended for all students taking the BSc (Hons) Computer Engineering and Software Systems dual award from Ain Shams University and the University East London. You will find it a useful source of information at the start of your programme but you should also keep it for reference purposes throughout your time here. It is, however, not intended to provide all you need to know, so you should also read the Ain Shams University Handbook.

Ain Shams University – Faculty of Engineering is aiming to be one of the best colleges known for their leadership regionally and internationally in engineering education and scientific research through interdisciplinary and unique academic programmes that meet the needs of the community and contribute to sustainable development. It aims for preparation of distinguished graduates capable of keeping pace with global technological in various disciplines that meet the needs of local and regional markets, and can conduct scientific research. This is applied through the creation of appropriate conditions for faculty members and their assistants and students, and through providing educational programmes in advanced undergraduate studies, as well as establishing advisory centres and research labs which include sophisticated contribute to community service and to meet its needs.

Credit Hours Engineering Programmes at the Faculty of Engineering - Ain Shams University (ASU-CHEP) is one of the outstanding models for engineering education in Arab Republic of Egypt, as it seeks to provide high-quality of engineering education based on interdisciplinary programmes and the application of international standards of credit hours systems followed in the most prestigious universities in the world. Learning environment at ASU-CHEP focused on the graduation engineers equipped with skills, knowledge, and the ability to life-long learning.

Students enrolled onto dual award BSc(Hons) Computer Engineering and Software Systems programme means that, as well as being a student of Ain Shams University, you are also a student of the Department of Engineering and Computing in the University of East London (one of the leading modern Universities in the UK for Engineering and Computing) and both institutions work together to ensure the quality and standards of the programme on which you are registered.

We trust that you will enjoy studying with us and we warmly welcome you to the programme.

Sincerely

Prof. Dr. M. Ayman Ashour
(Dean of Faculty of Engineering - Ain Shams University)

Arish Siddiqui
(UEL Academic Link Tutor)

2 INTRODUCTION TO THE PROGRAMME

2.1 Programme duration and modes of study

The dual award BSc(Hons) Computer Engineering and Software Systems programme is a 4-year full-time course. The programme awards dual awards of Bachelor of Science Degree from both Ain Shams University and the University of East London.

The minimum allowed study duration is eight main semesters. The maximum allowed study duration is 10 main semesters (5 years).

2.2 Programme aims and objectives

The BSc(Hons) Computer Engineering and Software Systems (CESS) programme focuses extensively on software engineering with a strong emphasis on computer engineering. The CESS programme opens a whole world of career opportunities to its graduates in software product lines, mobile and pervasive computing, cloud computing, embedded systems, multimedia, data analytics, and much more. The CESS program will meet the increasing demand for this specialization to meet the market needs at the national, regional, and international levels.

2.3 Programme Intended learning outcomes (ILO's)

The graduates of the Computer Engineering and Software Systems programme should be able to:

- Apply systematic, disciplined, quantifiable approaches to the cost-effective development, operation and maintenance of software systems to the satisfaction of their beneficiaries.
- Build software solutions using different technologies, architectures, and life-cycle approaches in the context of different organizational structures, with demonstrated programming expertise.
- Foster the development, adoption, and sustained use of standards of excellence for computer and software engineering practices.
- Have a solid understanding of software development life cycles.
- Utilize the methodologies of hardware, software integration, and networking.
- Have hands-on experience of software analysis, modelling, design, and quality assurance of software systems.
- Evaluate software/hardware/networks engineering projects.
- Write secure computer programs on professional levels achieving acceptable quality measures in software development.
- Apply software engineering methodologies in the different phases of the software engineering life-cycle.

- Apply the concepts of cloud computing, high-performance computing, mobile computing, and pervasive computing concepts in the appropriate environments.
- Analyse big-data systems.
- Utilize big-data analytics in cloud computing environments to solve real-world problems.
- Use different security measures and forensics tools in computing and networking systems.
- Communicate effectively and think critically about a wide range of issues arising in the context of working constructively on software and computer engineering projects.

2.4 Programme Structure & Content

The programme structure can be seen in Table 2.1 (module codes are subject to change)

Module Code	Module Name	Component of Assessment	Percentage Weighting	Component of Assessment	Percentage Weighting	Assessment Method
		2013 Bylaws		2018 Bylaws		
EG7311 (CN3300) 30 Credits	Mathematics for Computing and Engineering	**PHM 113** Calculus for Engineering (3) - (3 Credits)	35%	**PHM 111** Probability and Statistics - (2 Credits)	30%	Portfolio of students' work includes a compilation of coursework of the 3 modules; each module includes samples of the following: • Biweekly Assignments • Quizzes • Midterm Exam • Final Exam
		PHM 115 Differential Equations and Partial Differential Equations - (3 Credits)	35%	**PHM 113** Differential Equations and Partial Differential Equations - (3 Credits)	35%	
		PHM 114 Statistics and Probability for Engineering - (3 Credits)	30%	**PHM 114** Numerical Analysis - (3 Credits)	35%	
EG7312 (CN3301) 30 Credits	Analog and Digital Circuits	**ECE 141** Electrical and Electronic Circuits -(3 Credits)	50%	**EPM 118** Electrical and Electronic Circuits -(3 Credits)	50%	Portfolio of students' work includes a compilation of coursework of the 2 modules; each module includes samples of the following: • Assignments • Lab evaluation • Quizzes • Midterm Exam • Final Exam
		CSE 115 Digital Design -(3 Credits)	50%	**CSE 111** Logic Design -(3 Credits)	50%	
EG7313 (CN3302) 30 Credits	Software Development 1	**CSE 125** Computer Programming (1) - (3 Credits)	25%	**CSE 131** Computer Programming - (3 Credits)	35%	Portfolio of students' work includes a compilation of

		CSE 126 Computer Programming (2) - (3 Credits)	25%	**CSE 231** Advanced Computer Programming - (3 Credits)	35%	coursework of the 4 modules; each module includes samples of the following: • Lab Reports and Assignments • Software Projects • Quizzes • Midterm Exam • Final Exam
		CSE 127 Data Structures and Algorithms - (3 Credits)	25%			
		CSE 128 Software Engineering (1) - (3 Credits)	25%	**CSE 334** Software Engineering - (3 Credits)	30%	
EG7314 (CN3303) 15 Credits	Engineering Materials	**MDP 132** Structures and Properties of Materials – (3 Credits)	100%	**EPM 211** Properties of Electrical Materials – (2 Credits)	100%	Portfolio of students' work includes samples of the following: • Assignments • Lab evaluation and exam • Quizzes • Midterm Exam • Final Exam
EG7315 (CN3304) 15 Credits	Computer Architecture	**CSE 116** Computer Architecture – (3 Credits)	100%	**CSE 112** Computer Organization and Architecture – (4 Credits)	100%	Portfolio of students' work includes samples of the following: • Assignments • Lab evaluation • Quizzes • Midterm Exam • Final Exam
EG7421 (CN4300) 30 Credits	Software Development 2	**CSE 221** Object-Oriented Analysis and Design - (3 Credits)	25%	**CSE 331** Data Structures and Algorithms - (3 Credits)	25%	Portfolio of students' work includes a compilation of coursework of the 4 modules; each module includes samples of the following: • Assignments • Software Projects • Quizzes • Midterm Exam • Final Exam
		CSE 222 Software Engineering (2) - (3 Credits)	25%	**CSE 232** Advanced Software Engineering - (3 Credits)	25%	
		CSE 224 Design and Analysis of Algorithms - (3 Credits)	25%	**CSE 332** Design and Analysis of Algorithms - (3 Credits)	25%	
		CSE 225 Software Testing, Validation and Verification - (3 Credits)	25%	**CSE 338** Software Testing, Validation and Verification - (3 Credits)	25%	
EG7422 (CN4301) 15 Credits	Database Systems	**CSE 227** Database Systems - (3 Credits)	100%	**CSE 333** Database Systems - (3 Credits)	100%	Portfolio of students' work includes samples of the following: • Software Projects and Assignments • Quizzes • Midterm Exam • Final Exam
EG7423 (CN4302) 30 Credits	Engineering Systems	**ECE 255** Signals and Systems - (3 Credits)	35%	**ECE 251** Signals and Systems Fundamentals - (4 Credits)	35%	Portfolio of students' work includes a compilation of coursework of the 3

		CSE 215 Electronic Design Automation - (3 Credits)	30%	**CSE 312** Electronic Design Automation - (2 Credits)	30%	modules; each module includes samples of the following: • Assignments • Lab Reports and Evaluation • Quizzes • Midterm Exam • Final Exam
		CSE 275 Control Engineering - (3 Credits)	35%	**CSE 371** Control Engineering- (3 Credits)	35%	
EG7424 (CN4303) 15 Credits	Thermodynamics	**MEP 112** Thermodynamics - (3 Credits)	100%	**CSE 472** Artificial Intelligence - (3 Credits)	100%	Portfolio of students' work includes samples of the following: • Activities/ Assignments • Quizzes • Midterm Exam • Final Exam
EG7425 (CN4304) 15 Credits	Operating Systems	**CSE 223** Operating Systems - (3 Credits)	100%	**CSE 335** Operating Systems - (3 Credits)	100%	Portfolio of students' work includes samples of the following: • Assignments and mini-projects • Quizzes • Midterm Exam • Final Exam
EG7426 (CN4305) 15 Credits	Design of Compilers	**CSE 226** Design of Compilers - (3 Credits)	100%	**CSE 439** Design of Compilers - (3 Credits)	100%	Portfolio of students' work includes samples of the following: • Assignments • Lab evaluation • Project • Quizzes • Midterm Exam • Final Exam
EG7531 (N.A.Y.*) 30 Credits	Embedded Systems	**CSE 316** Microcontrollers and Interfacing - (3 Credits)	50%	**CSE 211** Introduction to Embedded Systems - (3 Credits)	50%	Portfolio of students' work includes a compilation of coursework of the 2 modules; each module includes samples of the following: • Lab Reports and Assignments • Quizzes • Midterm Exam • Final Exam
		CSE 345 Real-time and Embedded Systems Design - (3 Credits)	50%	**CSE 411** Real-time and Embedded Systems Design - (3 Credits)	50%	
EG7532 (N.A.Y.*) 30 Credits	Software Engineering 1	**CSE 325** Agile Software Engineering - (3 Credits)	50%	**CSE 233** Agile Software Engineering - (2 Credits)	50%	Portfolio of students' work includes a compilation of coursework of the 3 modules; each module includes

		CSE 326 Software Formal Specifications - (3 Credits)	50%	**CSE 339** Software Formal Specifications - (2 Credits)	50%	samples of the following: • Software Projects and Assignments • Quizzes • Midterm Exam • Final Exam
EG7533 (N.A.Y.*) 30 Credits	Computer Networks and Distributed Systems	**CSE 335** Computer Networks - (3 Credits)	50%	**CSE 351** Computer Networks - (3 Credits)	50%	Portfolio of students' work includes a compilation of coursework of the 2 modules; each module includes samples of the following: • Lab Reports and Assignments • Software Projects • Quizzes • Midterm Exam • Final Exam
		CSE 336 Distributed Computing - (3 Credits)	50%	**CSE 354** Distributed Computing - (3 Credits)	50%	
EG7534 (N.A.Y.*) 15 Credits	Computer Vision	**CSE 365** Computer Vision - (3 Credits)	100%	CSE 374 Digital Image Processing – (2 Credits)	100%	Portfolio of students' work includes samples of the following: • Lab reports and Assignments • Quizzes • Midterm Exam • Final Exam
EG7535 (N.A.Y.*) 15 Credits	Internet Programming	**CSE 334** Internet Programming - (3 Credits)	100%	**CSE 341** Internet Programming - (3 Credits)	100%	Portfolio of students' work includes samples of the following: • Assignments and mini-projects • Quizzes • Midterm Exam • Final Exam
EG7641 (N.A.Y.*) 30 Credits	High-Performance and Mobile Computing	**CSE 415** High-Performance Computing - (3 Credits)	50%	**CSE 455** High-Performance Computing - (2 Credits)	50%	Portfolio of students' work includes a compilation of coursework of the 2 modules; each module includes samples of the following: • Assignments/ Group Project • Quizzes • Midterm Exam • Final Exam
		CSE 437 Mobile Computing - (3 Credits)	50%	**CSE 431** Mobile Computing - (3 Credits)	50%	
EG7642 (N.A.Y.*) 30 Credits	Software Engineering 2	**CSE 425** Software Design Patterns - (3 Credits)	35%	**CSE 336** Software Design Patterns - (2 Credits)	50	Portfolio of students' work includes a compilation of coursework of the 3 modules; each module includes samples of the following: • Software Projects and Assignments • Quizzes • Midterm Exam • Final Exam
		CSE 426 Software Maintenance and Evolution – (3 Credits)	35%	**CSE 441** Software Project Management - (2 Credits)	50%	
		CSE 427 Software Project Management - (2 Credits)	30%			

EG7643 (N.A.Y.*) 15 Credits	Computer and Network Security	**CSE 436** Computer and Network Security - (3 Credits)	100%	**CSE 451** Computer and Network Security - (3 Credits)	100%	Portfolio of students' work includes samples of the following: • Lab reports and Assignments • Software Projects • Quizzes • Midterm Exam • Final Exam
EG7644 (N.A.Y.*) 45 Credits	Graduation Project	**CSE 496** Graduation Project (1) - (3 Credits)	50%	**CSE 491** Computer & Systems Engineering Graduation Project (1) - (3 Credits)	50%	Portfolio of students' work 8000 word project report, intermediate deliverables and a 15 minute viva presentation
		CSE 497 Graduation Project (2) - (3 Credits)	50%	**CSE 492** Computer & Systems Engineering Graduation Project (2) - (3 Credits)	50%	

Table 2.1 BSc Computer Engineering and Software Systems Programme Structure

Modules are allocated credits, with each year consisting of 120 credits. Over the four years this will give a total of 480 credits.

The credits for a module indicates the time a student will need to spend on a module (either in classes or in self-study), with 10 student hours for each unit of credit. So a 30 credit module will map onto 300 student hours for example. 30 credit modules are delivered over two semesters, whereas 15 credit modules are delivered over one semester. The final Graduation Project is a 45 credit module that is delivered over two semesters.

All modules are core, which means that they must all be passed in order to gain the final BSc(Hons) Award.

[*] *The module's code will be updated latter according to the UEL partner Web Marks Entry (WME) system.*

3 KEY STAFF AND CONTACT DETAILS

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3.1 Circumstances in which student can access UEL directly

You will find that for most issues that arise during the course of your studies academic and administrative staff at your location of study will be able to help, and further details are provided in this handbook. If however you have concerns that lie outside the remit of these staff you can contact the UEL link person, in the first instance, who will be able to re-direct your enquiry as appropriate.

The UEL Academic Link Tutor is appointed to manage the relationship between the Programme Leader at ASU- FoE and UEL.

Please contact your local Student Support/Administrative Office if you have any queries, in the first instance. If you have been advised by your local office to contact UEL then please send an e-mail to the **UEL Academic Link Tutor** at ***a.siddiqui@uel.ac.uk***

4 PROGRAMME OPERATION AND REGISTRATION

4.1 Programme Delivery

At levels 3 and 4 there will be a reliance on traditional methods of delivery consisting of a lecture programme with tutorial support. In addition, other methods of delivery, such as Computer Underpinned Learning or research-based tasks, may be used; these styles are more student-centred and put more responsibility onto the students to achieve the intended learning outcomes.

Certain modules at levels 3 and 4 lend themselves to group working and assessment or operate in a mode where written examinations are inappropriate. The programme team is very experienced in group assessment via its successful workshop modules.

At levels 5 and 6, whilst certain modules are delivered by traditional methods, there is more reliance on student-centred learning. Several modules take the opportunity to introduce students to research methods and encourage investigation of current published work.

You will be allocated to a tutorial group for each module of study. You are required to attend the group for which you are registered and you may not attend an alternative group informally.

4.2 Assessment Regulations

The Module Handbooks each give detailed breakdowns of the weightings and volume of assignments. For a formal description of the assessment process you should refer to the Academic Framework Module Regulations at: ***www.uel.ac.uk/academicframework/***.

Assessment Boards

Assessment Boards control and consider all assessments undertaken by students. The Board comprises a Chair, all those substantially involved as tutors and/or examiners and the external examiner(s). For more detailed information about the terms of reference of Assessment Boards within the Academic Framework Modular Regulations, please see details at ***www.uel.ac.uk/academicframework/***

Examinations and other assessments undergo a rigorous quality assurance process as follows:

- Module lecturers write the questions and produce solutions with marking schemes.
- Another lecturer checks the assessment questions, solutions and marking scheme.
- Copies of the assessment questions, solutions and marking scheme are sent, via the University of East London, to one of the External Examiners for checking and approval.
- Following the examinations, student answers are marked by the module

lecturers.
- A sample of students' marked work is reviewed for accuracy by another lecturer.
- Marked samples of student submissions are sent to the University of East London for review.
- External Examiners visit the University of East London and check the students' work and the lecturers' marking.
- The results are considered at assessment boards at the University of East London.

4.3 Programme Organisation

The organisation and administration of the programme will be carried out by a team consisting of the ASU Programme Leader, UEL Academic Link person and Administrators. With the exception of the UEL Academic Link person, it is these people who are responsible for day-to-day running of the programme.

The two groups of people you are most likely to meet regularly are:

The **Programme Leader** is responsible for ensuring that:

- a variety of assessment tasks and types are employed and mapped across the programme
- learning outcomes, and associated assessment tasks and criteria are monitored to ensure they:
  - Meet the published aims of the programme
  - Are in keeping with qualifications descriptors and subject benchmark statements
  - Reflect increasing levels of demand, complexity and depth of study.

The **Module Leaders** are responsible for ensuring that all assessment tasks are:

- Appropriately designed to offer formative and summative opportunities
- Mapped to learning outcomes and enable students to demonstrate achievement of these
- Devised at the same time, together with reassessment tasks (coursework, examinations etc)
- Efficient in terms of student and staff time
- Accompanied by a set of assessment criteria, task guidelines, submission dates and information regarding return of work, clearly published to students
- Clearly worded and presented, within designated timeframes
- Followed by appropriate feedback, within designated timeframes.

External Examiners

External Examiners are responsible for providing an independent check that proper standards are being maintained and are allocated to modules. They review each piece of assessment before it is available to students, will review samples of work each semester, and view student feedback and results.

4.4 Study Timings and Registration

The academic year comprises two semesters:

 First main semester (Fall): Begins early September and lasts for 15 weeks.
 Second main semester (Spring): Begins early February and lasts for 15 weeks.

There is also an optional **summer semester** before the academic year, which begins late June and lasts for 7 weeks.

- New students' enrolment in the programmes starts two weeks before the starting of the Fall semester, after fulfilling all the programmes requirements and paying the enrolment fees, as recommend by the Programs Administration Council and set by the Council of the Faculty of Engineering.
- Registration for any semester takes place within two weeks before the starting day of the semester. Registration is not final until the full tuition fees of the semester are paid.
- Registration in the Summer semester is optional.
- The student must register 60 credits per semester. Registration is not final until the student pays the educational service fees for the semester.
- The student may register in the Summer semester in a maximum of two modules, unless it results in graduating the student conditional the approval of the academic advisor.

- The programme academic regulations are available at ***https://eng.asu.edu.eg/BylawsAndRegulations***
- The Local Attendance and Engagement policy is available at ***https://eng.asu.edu.eg/uploads/uploadcenter/asu_594_file.pdf***
- UEL University's academic regulations are available at ***https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations***

It is essential that you log in to UEL's web based student record system, **UEL Direct**, and enrol with UEL using the UEL student number that you have be given prior to attending any lectures.

Once you have gained admission to the programme you must login to the UEL direct page using your student username which will be your UEL ID number and password and complete the on-line enrolment. ASU – FoE will assist and ensure that you complete your online enrolment task promptly. UEL Direct is available at ***https://www.uel.ac.uk/students***

For general enquiries concerning enrolment, you must contact your local Student Support/Administrative Office for guidance in the first instance and then if you are advised to contact UEL, please send an e-mail to the UEL Academic Partnerships Office at ***apo@uel.ac.uk***.

5 TEACHING, LEARNING AND ASSESSMENT

5.1 Details of local teaching and learning approaches

- The programme is a credit system leading to the Bachelor of Science Degree (Honours) after completing 480 credits. Student evaluation is based not only on final exam, but also on midterm exams, quizzes, assignments, course projects, presentations, papers, essays, in/out of class participation and many other innovative activities.
- Course instructors in the programme are carefully selected from the distinct full-time world-class faculty members of the Faculty of Engineering at Ain Shams University.
- With the majority of modules being delivered over the whole year there is excellent scope for formative Assessment to stretch and extend the students. Thus, a key feature of the courses is the emphasis on formative feedback and guidance to enable students to develop full understanding of the topics of study, prior to assessment taking place.
- Assessment for these programmes takes the form of examinations, course works, presentations and time constrained assessments.
- Each module syllabus should contain: course objectives, textbook, outline, material, assessments, grading policy and outcome. Outline should contain sections covered every week with reference to chapters/sections in the textbook. The instructor should give the nodule syllabus to the students in the first class. The syllabus serves as a contract between the instructor and the students.

5.2 Details of assessment arrangements

a) Passing Modules

The student must achieve a minimum of 40% in a module in order to pass a module.

b) Incomplete Modules

If a student does not pass the module, another set of assessments (resits) are conducted after the semester's final exams 9during the resit period). The marks of the resit are capped at 40% unless extenuation is granted (see section 13).

c) Modules opportunities

A module resit is considered a second opportunity. If a student fails at the second opportunity they will be given a maximum of two further opportunities (opportunity three and opportunity four).

The third opportunity requires full attendance of the module in the next academic year. The fourth opportunity will be a further resit. In each case the final mark is capped at 40% unless extenuation is granted (see section 13).

d) Repeating a year

If a student fails to achieve 90 or more credits within an academic year they may, at the discretion of the Exam Board, be asked to either leave the course or repeat the whole academic year (with mark uncapped). A student will only be allowed to repeat an academic year once at most during their studies.

5.3 Degree Classification

Where a student is eligible for an Honours degree by passing a valid combination of modules to comprise an award and has gained a minimum of 240 UEL credits at level 5 or level 6 on the current enrolment for the programme, including a minimum of 120 UEL credits at level 6, the award classification is determined by calculating:

The arithmetic mean of the best 90 credits at level 6	x	0.8	+	The arithmetic mean of the next best 90 credits at levels 5 and/or 6	x	0.2

and applying the mark obtained as a percentage, with all decimals points rounded up to the nearest whole number, to the following classification

70% - 100%	First Class Honours
60% - 69%	Second Class Honours, First Division
50% - 59%	Second Class Honours, Second Division
40% - 49%	Third Class Honours
0% - 39%	Not passed

For full details of the University degree classification refer to ***http://www.uel.ac.uk/wwwmedia/internal/qa/committees/documents/Academic-Framework---Assessment-Regulations---with-changes-approved-for-Transition-Group.doc***

e) Grades equivalency

The points of each credit hour are computed as follows:

Ain Shams University			**University of East London**
Percentage of total mark at ASU	**Grade**	**Points for GPA**	**Percentage equivalent at UEL**
97% and higher	A+	4.0	95% and higher
93% to less than 97%	A	4.0	82% to less than 95%
89% to less than 93%	A-	3.7	70% to less than 82%
84% to less than 89%	B+	3.3	66% to less than 70%
80% to less than 84%	B	3.0	63% to less than 66%
76% to less than 80%	B-	2.7	60% to less than 63%

73% to less than 76%	C+	2.3	56% to less than 60%
70% to less than 73%	C	2.0	53% to less than 56%
67% to less than 70%	C-	1.7	50% to less than 53%
64% to less than 67%	D+	1.3	45% to less than 50%
60% to less than 64%	D	1.0	40% to less than 45%
Less than 60%	F	0.0	Less than 40%

5.4 References to student policies

ASU-FoE available at:
https://eng.asu.edu.eg/uploads/uploadcenter/asu_594_file.pdf
UEL available at:
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies

Also detailed in Appendix B which provides full information on referencing and the avoidance of plagiarism.

The electronic version of "Cite Them Right: *the essential referencing guide"* 9th edition, can be accessed whilst on or off campus, via UEL Direct. The book can only be read online and no part of it can be printed nor downloaded.

Reference to Appendix E containing information on Academic Misconduct and Plagiarism. Assessment and Feedback Policy available at:
https://eng.asu.edu.eg/uploads/uploadcenter/asu_594_file.pdf

Assessment and feedback are fundamental parts of your learning experience. The UEL Assessment and Feedback Policy seeks to:

- actively promote student success and academic achievement;
- provide clear, accurate, accessible information and guidelines to all staff and students on assessment and feedback;
- maximise the potential for consistency and fairness in assessment;
- locate assessment and feedback as an integral part of learning and teaching processes.

Every component of assessment that contributes to an award, at all levels, is subject to internal and External Examiner moderation. This ensures the maintenance of standards both internally and in comparison, with similar programmes delivered at other higher education institutions. The UEL Assessment and Feedback Policy outlines the process for the various stages of the marking process and is available at ***https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Assessment-and-Feedback-Policy***

The UEL Skills Curriculum has been designed to ensure that you are taught, have the opportunity to practice, and are assessed in three skillsets: Learning Skills,

Professional Skills and Research Skills. These Skills are developed within your programme of study. Further information is available at:
https://www.uel.ac.uk/discover/governance/policies-regulations-corporate-documents/student-policies/skills-curriculum

The UEL Skills Portal has been designed to act as a single gateway to a whole range of skills support that will help you progress through your studies. From tips on academic writing, using IT, to guidance on time management and exam revision - all of the resources in the UEL Skills Portal have been designed to support your learning and achievement, refer to
https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Skillzone.aspx

As a student you will be taught how to write correctly referenced essays using UEL's standard Harvard referencing system from Cite Them Right**.** Cite them Right is the standard Harvard referencing style at UEL for all Schools apart from the School of Psychology which uses the APA system. This book will teach you all you need to know about Harvard referencing, plagiarism and collusion. The electronic version of "Cite Them Right: *the essential referencing guide"* 9th edition, can be accessed whilst on or off campus, via UEL Direct. The book can only be read online and no part of it can be printed nor downloaded.

Further information is available at Appendix E and the weblinks below

> *Harvard referencing*
> ***https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Harvard-Referencing-.aspx***
>
> *Academic Integrity*
> ***https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Academic-integrity.aspx***

5.5 Assessment Criteria

A student's performance will be marked and graded according to pre-specified and clear assessment criteria. These will normally be presented in one document combining marking and grading criteria. Further details can be found in section 2.3 of the Assessment and Feedback Policy and can be found at:
www.uel.ac.uk/qa/policies/assessmentpolicy/

As your degree progresses, you will be assessed in a number of different ways. In addition to examinations, you will have a range of coursework assessments such as reports or presentations, for which you will be given clear guidance by the module leader including how you will be assessed for that piece of work.

The section below gives you a general guideline of what we are looking for at different levels of the programme.

Level 3

- You can present basic information.
- You can follow guidelines to use that information to solve simple problems.

Work of a better standard usually reflects an approach where
- You have produced some work without guidance.
- Your work is presented clearly.

Level 4
- You can present factual information.
- With some help, you can analyse and evaluate the information presented and draw some conclusions.
- You can follow guidelines in creating solutions to straightforward problems.

Work of a better standard usually reflects an approach where
- You have required little guidance in producing your work.
- You have shown initiative where appropriate.
- You meet your obligations to others
- You have fully appreciated the complexity of a task and managed your time and resources accordingly.
- Your work is presented with care and forethought.

Level 5
- Your work displays a detailed knowledge of the topic. You are aware of other contexts that can be applied to this knowledge.
- With some guidance you can analyse data and situations in a range of different contexts.
- You can take information gathered or the ideas of others and re-format it to your own purpose.
- You can select appropriate evaluation techniques. You can use these to evaluate your own findings.

Work of a better standard usually reflects an approach where
- You have required minimal assistance if any assistance.
- You have been particularly creative in devising and implementing you chosen solution
- You have identified the key elements of problems and chosen the appropriate strategies to resolve them.
- You have communicated your work in a clear and concise manner.

Level 6
- Your work displays a comprehensive and detailed knowledge of the topic with areas of specialisation showing depth of understanding.
- You are aware of current developments.
- Without guidance you can analyse data and situations in a range of different contexts.
- You can develop creative and innovative solutions with little guidance.
- You can review evidence critically and use your findings to support

conclusions and recommendations.

Work of a better standard usually reflects an approach where

- You have not required any assistance
- You have proved you can manage your own learning and make full use of a wide range of resources.
- You have been confident in your ability to solve problems.
- You have communicated your work in a thoroughly professional and coherent manner.

6 MODULE SPECIFICATIONS

Module Title: Mathematics for Computing and Engineering	**Module Code:** EG7311 /CN3300 **Level: 3** **Credit:** 30 **ECTS credit: 15**	**Module Leader**: Dr. Makram Roshdy
Pre-requisite: None	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: ASU		

Main Aim(s) of the Module:

- To provide students with an understanding of foundational mathematics material required for computer science and engineering.
- To prepare students for the more advanced mathematics they will encounter on their degree.

Main Topics of Study:

- Vectors and Geometry of Space.
- Functions of several variables and Partial derivatives.
- Applications of partial derivatives.
- Double integrals over rectangular regions.
- Double integrals over general regions.
- Applications of double integrals.
- Triple integrals.
- Triple integrals in cylindrical and spherical coordinates.
- Applications of triple integrals.
- Line and surface integrals.
- Vector calculus.
- Surface Integrals.
- Green's theorems.
- Stokes' theorem.
- The divergence theorem.
- Basic Concepts of Probability.
- Rules of Probability: Conditional Probability and Bay's Theorem.
- Discrete and continuous random variables and its distributions
- Organization data, Frequency Distributions, Cumulative frequency distribution and graphs
- Measures of central tendency and measures of dispersion.
- Coefficient of variation and coefficient of skewness.
- Introduction to calcification of differential equations, first order equations
- Higher order differential equations: homogenous
- Cauchy-Euler equations
- Laplace transform
- Fourier series
- Partial differential equations

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Explain the difference between different types of number and number bases and describe how numbers are represented in computing and engineering systems.

2. Identify the ways in which mathematical logic and set theory underpins the principles of computing and engineering.

Thinking skills

3. Utilise mathematical, statistical and logical methods to solve problems
4. Interpret and analyse data.

Subject-based practical skills

5. Use the knowledge of multiple integrals and statistics to solve practical engineering problems.
6. Apply the addition rules for probability to solve some engineering practical problems.
7. Use mathematical models for solve differential equations and partial differential equations

Skills for life and work (general skills)

8. Operate effectively in a team.
9. Develop the skills which are related to creative thinking, problem solver in different fields.
10. Use the internet to find up to date problems and concepts related to the probability and statistics.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

"Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work."

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on Participation • 20% on Biweekly Assignments • 10% on quizzes • 25% on a midterm exam (140 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- James Stewart, “Calculus”, Cengage Learning publisher, 8th edition, 2015.
- Dennis D. Wackerly, William Mendenhaii III, Richard L. Scheaffer, “Mathematical Statistics with Applications”, Thomson - Brooks/Cole publisher, 7th edition, 2008.

Recommended

- Erwin Kreyszig, “Advanced Engineering Mathematics”, Wiley International Edition, 10th edition, 2011.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 200 hours	

	Lectures/ Tutorials/ Practicals
2.Student Learning Time: 100 hours	 Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	300 hours

Module Title: Circuit Design	**Module Code:** EG7312 /CN3301 **Level:** 3 **Credit:** 30 **ECTS credit: 15**	**Module Leader**: Dr. Mohamed Taher

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

Main Aim(s) of the Module:

- To provide the fundamental skills necessary to analyse and design electrical circuits
- To demonstrate the power of computers in applications of electronics.

Main Topics of Study:

- Logic Gates
- Combinational Logic Design
- Combinational Logic Circuits
- Arithmetic Functions for Circuit Design
- Semiconductor Physics
- Sequential Circuits
- Register Transfers
- Circuit Theorems
- Operational Amplifiers
- Diode Applications
- Bipolar Junction Transistor
- MOSFET

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

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1. Define the different types of logic gates and logic functions
2. Explain the concept of combinational and sequential logic circuits
3. Define the basic concepts of semiconductor physics
4. Identify the different applications of diodes

Thinking skills

5. Simplify logic circuits using Boolean algebra and Karnaugh maps
6. Analyse and design combinational and sequential logic circuits.
7. Explain and Measure different outputs from amplifier circuits

Subject-based practical skills

8. Design the digital computer components

Skills for life and work (general skills)

9. Work and communicate effectively in team.
10. Develop skills related to creative thinking and problem solving.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in

the form of both formative and summative work.		
Assessment methods which enable students to demonstrate the learning outcomes for the module: **Portfolio** Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on lab evaluation and assignments • 10% on quizzes • 25% on a midterm exam (140 hours of student effort)	**Weighting:** 100%	**Learning Outcomes demonstrated** 1-10

Reading and resources for the module:

Core

- M. Morris Mano, "Digital Design", Pearson Education, 6th Edition, 2017.
- Alexander, Charles K., and Matthew N. O. Sadiku. "Fundamentals of Electric Circuits", New York, NY: McGraw-hill Education, 6th Edition, 2016.
- Robert L Boylestad, Louis Nashelsky, "Electronic Devices and Circuit Theory", Pearson, 11th Edition, 2012.
- Lecture handouts

Recommended

- V. K. Mehta, Rohit Mehta, "Principles of Electronics", S Chand & Co Ltd, 7th edition, 2005.
- Adel S. Sedra, and Kenneth C. Smith. "Microelectronic Circuits", Oxford University Press, 7th Edition, 2017.
- Periodicals, Web sites, … etc

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 200 hours	Lectures/ Tutorials/ Practicals
2.Student Learning Time: 100 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	300 hours

Module Title: Software Development 1	**Module Code:** EG7313 /CN3302 **Level: 3** **Credit:** 30 **ECTS credit: 15**	**Module Leader**: Dr. Mahmoud Khalil

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

Main Aim(s) of the Module:

- To demonstrate the understanding of object-oriented programming and its underlying concepts.
- To demonstrate the understanding of various algorithms, data structures and data modelling techniques.
- To provide the fundamental skills of Information systems modelling and design using various Software Engineering techniques.

Main Topics of Study:

- Software Development Life Cycle
- UML
- Data Flow Diagrams
- System Analysis and Design Methodologies
- Case Tools
- Programming Languages and controls
- Object-oriented Concepts and Design
- Data Structures and Algorithms
- GUI and Data representation
- Data access and control management.
- Project Management

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Understand various programming concepts and different data structures.
2. Describe various A/D methodologies, methods and tools used for the modelling, design and development of information systems.
3. Explain the concepts and principles of object-oriented technology.
4. Explain data structures, algorithms and computer systems.

Thinking skills

5. Analyse and compare different methods used in system modeling.
6. Solve different engineering problems with alternative solutions using different algorithms

Subject-based practical skills

7. Design and write object-oriented programs to solve engineering problems.
8. Use a variety of diagram types from a CASE tool as part of the overall design process.

Skills for life and work (general skills)

9. Work and communicate effectively in team.
10. Develop skills related to creative thinking and problem solving.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 10% on lab reports and assignments • 10% on software projects • 10% on quizzes • 25% on a midterm exam (140 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- D. S. Malik, "C++ Programming: From Problem Analysis to Program Design", 8th Edition, Cengage Learning, 2017.
- Stuart Reges, Marty Stepp, "Building Java Programs", Pearson, 4th Edition, 2016.
- Mark Allen Weiss, "Data Structure and Algorithm Analysis in C++", Pearson, 4th Edition, 2013.
- Ian Sommerville, "Software Engineering", Pearson, 10th Edition, 2015.

Recommended

- Cay Horstmann, "Core Java", Prentice Hall, 11th Edition, 2018.
- R. S. Pressman, "Software Engineering: A Practitioner's Approach", McGraw Hill, 8th Edition, 2014.
- S. R. Schach, "Object-Oriented and Classical Software Engineering", McGraw Hill, 8th Edition, 2010.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 200 hours	Lectures/ Tutorials/ Practicals
2.Student Learning Time: 100 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	300 hours

Module Title: Engineering Materials	**Module Code:** EG7314 /CN3303 **Level: 3** **Credit:** 15 **ECTS credit: 7.5**	**Module Leader**: Dr. Ramadan Elgamsy

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

Main Aim(s) of the Module:

- To provide the fundamental skills necessary to distinguish between different classes of materials.
- To outline the origin of mechanical, electrical, thermal, optical and magnetic properties and explain how they are related to their structure.

Main Topics of Study:

- Classification of materials
- Atomic structure and bonding in solids
- Metallic' Structure
- Types and application of Metals
- Ceramics' structure
- Types and application of ceramics
- Structure of Polymers
- Types and application of polymers
- Imperfection in Metals
- Imperfection in Ceramics
- Mechanical properties

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Distinguish between different classes of materials (metals, ceramics, polymers), associate terms with the appropriate structure;
2. Define different types of structure: crystalline and amorphous;
3. Describe the intimate link between material structure, and properties;

Thinking skills

4. Solve simple calculations to determine crystal parameters;
5. Predict some properties that are related to the structure;
6. Outline the origin of mechanical, electrical, thermal, optical and magnetic properties and explain how they are related to their structure.

Subject-based practical skills

7. Categorize practically different materials & different polymers.
8. Differentiate between conductivity of different materials.

Skills for life and work (general skills)

9. Write a technical report and presentation using digital libraries;
10. Show ethical manners in referencing and facility protection.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on lab evaluation and assignments • 10% on quizzes • 25% on a midterm exam (70 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- William D. Callister, David G. Rethwisch, "Fundamentals of Materials Science and Engineering", John Wiley and Sons, 5th edition, Inc, 2015.

Recommended

- James F. Shackelford, "Introduction to Materials Science for Engineers", Prentice-Hall, 8th Edition, 2014.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/ Tutorials/Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	150 hours

Module Title: Computer Architecture	**Module Code:** EG7315/ CN3304 **Level: 3** **Credit:** 15 **ECTS credit: 7.5**	**Module Leader**: Dr. Mohamed Taher

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None

Locations of delivery: ASU

Main Aim(s) of the Module:

- To provide the fundamental skills necessary to describe the structure and behaviour of digital computers at several levels of abstraction.
- To identify a pipeline datapath for a computer and identify pipelining hazards, interrupts and ways to deal with them.

Main Topics of Study:

- The MIPS instruction set and assembly programming
- MIPS single-cycle implementation
- MIPS pipelined implementation
- Pipelining hazards
- Exceptions and interrupts
- Superscalar architectures
- Caching
- Virtual Memory

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Explain the MIPS instruction set architecture
2. Explain how computers execute programs
3. Illustrate how a data-path with or without pipelining is designed.
4. Infer the effect of the memory hierarchy on the performance

Thinking skills

5. Write MIPS assembly programs
6. Translate C programs to assembly and assembly programs to machine code

Subject-based practical skills

7. Design a processor's data path

Skills for life and work (general skills)

8. Refer to relevant literature search for information and engage in life-long self-learning discipline.
9. Develop problem solving and creative thinking
10. Work and communicate effectively in team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	Weighting:	Learning Outcomes demonstrated
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on lab evaluation and assignments • 10% on quizzes • 25% on a midterm exam (70 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- D. A. Patterson and J. L. Hennessy, "Computer Organization and Design: The Hardware/Software Interface", Elsevier, 5th Edition, 2016.
- Lecture handouts

Recommended

- Periodicals, Web sites, … etc

Indicative Teaching and Learning Time (10 hrs per credit):	Activity
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/ Tutorials/Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	150 hours

Module Title: Software Development 2	**Module Code:** EG7421 /CN4300 **Level: 4** **Credit: 30** **ECTS credit: 15**	**Module Leader**: Prof. Dr. Hoda Korashy Mohamed
Pre-requisite: CA3101 Software Development 1		**Pre-cursor:** None
Co-requisite: None		**Excluded combinations:** None
Location of delivery: Ain Shams University Campus		

Main aim(s) of the module:

By the end of this module, the student will be able to:

- Differentiate between structured and object-oriented paradigms.
- Design, implement and test software systems based on object-oriented architecture.
- Develop and analyse a variety of software algorithms.

Main topics of study:

- Object-Oriented Analysis and Design
- Classes and Objects
- Inheritance
- Interfaces and Abstract Classes
- Software Engineering Concepts
- Design Models
- User interface design
- Software cost estimation techniques
- Design and Analysis of Algorithms
- Search algorithms
- Sort algorithms
- Algorithm optimisation
- Recursion
- Software Testing, Validation and Verification
- White-box and black-box testing
- Testing frameworks such as JUnit
- CASE tools

Learning Outcomes for the module

At the end of this module, students will be able to:

Knowledge

1. Explain the object-oriented approach to software development
2. Describe a range of software engineering methodologies
3. Describe a number of testing methodologies

Thinking skills

4. Analyse and compare different methods used in object-oriented analysis
5. Use a variety of diagram types from a CASE tool as part of the overall design process
6. Distinguish the different types of algorithm paradigms and evaluate when an algorithmic design situation calls for it

Subject-based practical skills

7. Develop practical projects using object-oriented analysis, design and implementation
8. Program in the major computer programming paradigms
9. Use computer testing aided design tools like JUnit

Skills for life and work (general skills)

10. Solve complex problems using a variety of methodologies

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on software projects and assignments 10% on quizzes • 25% on a midterm exam (140 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- Ian Sommerville, “Software Engineering”, Pearson, 10th Edition, 2015.
- S. R. Schach, “Object-Oriented and Classical Software Engineering”, McGraw Hill, 8th Edition, 2010.

Recommended

- R. S. Pressman, “Software Engineering: A Practitioner's Approach”, McGraw Hill, 8th Edition, 2014.
- Grady Booch, Robert A. Maksimchuk, Michael W. Engle, Bobbi J. Young, and Jim Conallen, Kelli A. Houston, “Object-Oriented Analysis and Design with applications”, Grady Booch, Addison-Wesley Professional, 3rd Edition, 2007.

Indicative learning and teaching time (10 hrs per credit):	**Activity**

1.Student/Tutor interaction, some of which may be online: 200 hours	Lectures/ Tutorials/ Practical
2.Student Learning Time: 100 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	300 Hours

Module Title: Database Systems	**Module Code:** EG7422 /CN4301 **Level: 4** **Credit:** 15 **ECTS credit: 7.5**	**Module Leader**: Prof. Dr. Hoda Korashy Mohamed

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

Main Aim(s) of the Module:

- To provide an understanding of methods of data organisation and retrieval.
- To provide students with the concepts for understanding information systems and the skills for modelling data and functions.
- To develop students' knowledge of the fundamental principles of Database Management Systems.
- To provide students with the skills to design, implement and manage databases.

Main Topics of Study:

- Architecture for a database system.
- Relational model: Domain, relations, and relational integrity.
- SQL.
- The relational database language standard: data definition language, data manipulation language, aggregate functions, views, database modification, database management system and examples such as Oracle and Access.
- Database design theory and methodology
- Entity/Relationship model (ERM) and enhanced Entity/Relationship model (EERM).
- Normalization for relational database.

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Explain the principles of database systems
2. Explain the concepts of ER diagrams
3. Explain the techniques used to create and manipulate data in database systems and outline different design techniques for database systems

Thinking skills

4. Define the engineering problems that is solved by database systems.
5. Derive different solution alternatives for the engineering problems.
6. Analyse and compare different methods used in design data.

Subject-based practical skills

7. Use SQL language to process data
8. Develop practical training for different database systems.

Skills for life and work (general skills)

9. Work and communicate effectively in a team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals.
10. Refer to relevant literature search for information and engage in life-long self-learning

discipline.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on software projects and assignments • 10% on quizzes • 25% on a midterm exam (70 hours of student effort)	100%	1-10

Reading and resources for the module:

- Ramez Elmasri, Shamkant B. Navathe, "Fundamentals of Database Systems", Pearson, 7th Edition, 2017.

Recommended

- Avi Silberschatz, **"**Database System Concepts", McGraw-Hill, 6th Edition, 2010.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/ Tutorials/Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	150 hours

Module Title: Engineering Systems	**Module Code:** EG7423 /CN4302 **Level:** 4 **Credit:** 30 **ECTS credit: 15**	**Module Leader**: Prof. Dr. Mostafa Gomaa

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None

Locations of delivery: ASU

Main Aim(s) of the Module:

- To design application specific digital integrated circuits
- To look at the building blocks of digital communication systems
- To analyse a design a variety of control systems

Main Topics of Study:

- Sequential Design
- CAD Systems
- VHDL
- Routing
- Simulations
- Functional Verification
- Analysisof control systems using a variety of techniques
- Stability in control systems
- Design a PID controller using synthesis methods
- Signal Classifications
- Modulation Principals
- Fourier Transform
- Z- Transform
- Matlab

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Describe basic integrated circuit subsystems and process flows
2. Understand Basic hardware description language HDL (VHDL/Verilog)
3. Explain basic continuous control system concepts
4. Explain time periodic signals properties and their analysis using Fourier series

Thinking skills

5. Compile a synthesizable HDL code
6. Solve differential equations that describe control systems
7. Express band width requirements based on signal analysis

Subject-based practical skills

8. Build a simple chip from specifications down to layout using CAD tools.
9. Practice Matlab as a simulation tool.

Skills for life and work (general skills)

10. Work and communicate effectively in team.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 10% on lab reports and evaluation • 10% on Assignments • 10% on quizzes • 25% on a midterm exam (140 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- Rodger E. Ziemer, William H Tranter and D. R. Fanninm, "Signals and Systems: Continuous and Discrete", Pearson. 4th Edition, 1998.
- K. Ogata , "Modern Control Engineering", Pearson, 5th Edition, 2009.
- Luciano Lavagno, Igor L. Markov, Grant Martin, Louis K. Scheffer, "Electronic Design Automation for IC Implementation, Circuit Design, and Process Technology", CRC Press, 2006.

Recommended

- Farid Golnaraghi and Benjamin C. Kuo , "Automatic Control Systems", McGraw-Hill, 10th Edition, 2017.
- Alan V. Oppenheim, Alan S. Willsky, with S. Hamid Nawab, "Signals and Systems", , Pearson, 2nd Edition, 1996.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 200 hours	Lectures/ Tutorials/ Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.

Total hours (1 and 2):	300 hours

Module Title: Artificial Intelligence	**Module Code:** EG7424 /CN4303 **Level: 4** **Credit:** 15 **ECTS credit: 7.5**	**Module Leader**: Dr. Mahmoud Khalil

Pre-requisite: Computer Programming Probability and Statistics	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None

Locations of delivery: ASU

Main Aim(s) of the Module:

- Create intelligent solutions to concrete computational problems.
- Understand different searching techniques to real-world problems.
- Understand the role of game playing strategies in artificial intelligence.
- Use intelligent techniques in expert systems and intelligent agents
- Explain basic knowledge representation, problem solving, and learning methods used in artificial intelligence.

Main Topics of Study:

- Introduction to Artificial Intelligence
- Problem Solving: Informed & Optimal Search
- Adversarial Search
- Evolutionary Computing
- Propositional Logic
- First-Order Logic
- Knowledge Representation
- Machine Learning
- Artificial Neural Networks

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. State fundamental concepts of search techniques.
2. Outline and classify various search techniques (optimal, non-optimal, uninformed, informed)
3. State adversarial search techniques used for game playing.

Thinking skills

4. Use artificial intelligence techniques.
5. Design intelligent computer-based systems.
6. Prepare appropriate abstract representations and formulate

Subject-based practical skills

7. Use SWI-Prolog interpreter to build and query a knowledge base and develop simple AI applications.
8. Implement some search and game playing algorithms.

Skills for life and work (general skills)

9. Refer to relevant literature search for information and engage in life-long self-learning discipline.
10. Work and communicate effectively in a team by effective collaboration and task management.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on activities/assignments • 10% on quizzes • 25% on a midterm exam (70 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- Stuart Russell, "Artificial Intelligence: A Modern Approach", Pearson, 3rd Edition, 2015.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/Tutorials/Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	150 hours

Module Title: Operating Systems	**Module Code:** EG7425 /CN4304 **Level: 4** **Credit:** 15 **ECTS credit: 7.5**	**Module Leader**: Dr. Gamal Ebrahim
Pre-requisite: Computer Architecture	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: ASU		

Main Aim(s) of the Module:

- Understand basic operating systems concepts, process management, memory management, file management and deadlocks.
- Analyze, compare and implement different algorithms used in an Operating System.
- Compare different Operating Systems such as windows, UNIX, LINUX.
- Share ideas and work in a team effectively and independently.

Main Topics of Study:

- Computer-system structures
- Operating- system structures
- Process management, Processes
- CPU Scheduling
- Process Synchronization
- Deadlocks
- Memory management
- Virtual memory

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

11. Describe the function and design of Operating System components: Process management, Memory Management, File System and deadlocks.
12. Identify different algorithms used in an Operating System
13. Describe the role of cache and virtual memory.

Thinking skills

14. Analyze different problems that may arise during Inter Process Communication (IPC).
15. Compare the common algorithms used for both preemptive and non-preemptive scheduling of tasks in operating systems, such as priority, performance comparison.
16. Compare the types of processor scheduling such as short-term, medium-term and long-term scheduling.
17. Summarize the principles of virtual memory as applied to paging, and segmentation.
18. Summarize the various approaches to solve the problem of mutual exclusion in an operating system.

Subject-based practical skills

19. Implement some algorithms used in Operating Systems.

Skills for life and work (general skills)

20. Work and communicate effectively in a team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on assignments and mini projects • 10% on quizzes • 25% on a midterm exam (70 hours of student effort)	100 %	1-10

Reading and resources for the module:

Core

- Silberschatz, P. Galvin, and G. Gagne, "Operating Systems Concepts", Wiley, 9th Edition, 2012.

Recommended

- Andrew S. Tanenbaum and Herbert Bos, "Modern Operating Systems", Pearson. 4th Edition, 2014.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/ Tutorials/ Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	150 hours

Module Title: Design of Compilers	**Module Code:** EG7426 /CN4305 **Level: 4** **Credit:** 15 **ECTS credit: 7.5**	**Module Leader**: Dr. Mohamed Taher

Pre-requisite:	None	**Pre-cursor:**	None
Co-requisite:	None	**Excluded Combination:**	None
Locations of delivery:	ASU		

Main Aim(s) of the Module:

- Understand the theory behind different components of a compiler, the programming techniques used to put the theory in practice, and the interfaces used to modularize the compiler.
- Understand the concepts of parsing and semantic analysis and their importance in compiler design.
- Understand and develop first three stages of a simple compiler using the C programming language.

Main Topics of Study:

- Lexical Analysis
- Context free grammar
- Recursive descent parser
- Top-down parser
- Bottom-up parser
- Semantic Analysis

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Explain the several phases of the compiler.
2. Explain how to define a regular expression that generates a target language.
3. Explain how to apply parsing techniques for a source language
4. Explain how to apply semantic analysis to the context-free grammar.

Thinking skills

5. Use regular expression and finite automata to design new language.
6. Analyze written program syntactically and semantically.
7. Create a grammar for a tiny language.

Subject-based practical skills

8. Write compiler stages using C++ Programs.
9. Use the ready-made software to create and languages' parsers.

Skills for life and work (general skills)

10. Work and communicate effectively in a team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 10% on lab evaluation and assignments • 10% on software projects • 10% on quizzes • 25% on a midterm exam (70 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- Kenneth C. Louden, "Compiler Construction: Principles and Practice", Cengage Learning, 1997.
- Lecture handouts

Recommended

- Periodicals, Web sites, … etc

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/ Tutorials/Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	150 hours

Module Title: Embedded Systems	**Module Code:** EG7531 /N.A.Y. **Level:** 5 **Credit:** 30 **ECTS credit: 15**	**Module Leader**: Prof. Dr. Sherif Hammad

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

Main Aim(s) of the Module:

- To provide understanding of Microprocessors, microcontrollers, Memory, Controllers and I/O operations.
- To demonstrate the understanding of Embedded systems, it's architecture and design methodologies, its development and building process.
- To program and debug in embedded C for a typical microcontroller while using industrial IDE.
- To demonstrate the understanding of real-time operating systems functionalities and design requirements

Learning Outcomes for the Module

At the end of this module, students will be able to:

1. Build assembly language on an industrial scale microcontroller architecture
2. Program in C applications for different peripherals e.g. GPIOs, ADC, I2C, and UART applications using registers level and Driver Libraries
3. Use different modes of Timers in embedded small applications
4. Manage peripherals operations using polling and interrupts
5. Write and debug startup files
6. Differentiate between embedded functional and non-functional requirements e.g. ROM, RAM, Time, Power, … etc.
7. Follow MISRA rules and resolve its warnings in developing embedded applications
8. Develop RTOS embedded multitasking applications
9. Communicate between tasks using queues.
10. Manage embedded resources by different methods e.g. semaphores, critical sections, … etc

Thinking skills
ILOs: 2-3-8

Subject-based practical skills
ILOs: 1-2-3-4-5-6-8-9-10

Skills for life and work (general skills)
ILOs: 6-7

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/videos. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on lab reports and assignments • 10% on quizzes	100%	1-10

• 25% on a midterm exam (140 hours of student effort)		

Reading and resources for the module:
Core

- Muhammad Ali Mazidi, Sarmad Naimi, Sepehr Naimi, Janice Mazidi, “ARM Assembly Language_ Programming and Architecture”, MicroDigitalEd, 2nd Edition, 2016.
- Jonathan W Valvano, ”Embedded Systems: Introduction to Arm® Cortex™-M Microcontrollers”, CreateSpace Independent Publishing Platform, 5th Edition, 2012.
- Richard Barry” Using the FreeRTOS Real Time Kernel - A Practical Guide - Cortex-M3 Edition”, 2010.
- TivaWare™ Peripheral Driver Library; User Guide

Recommended

- Ying Bai, “Practical Microcontroller Engineering with ARM Technology”, Wiley, 2016.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 200 hours	Lectures/ Tutorials/ Practical
2.Student Learning Time: 100 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	300 hours

Module Title: Software Engineering 1	**Module Code:** EG7532 /N.A.Y. **Level:** 5 **Credit:** 30 **ECTS credit: 15**	**Module Leader**: Prof. Dr. Hoda Korashy Mohamed
Pre-requisite: None	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: ASU		

Main Aim(s) of the Module:

- Recognize the different types of development
- Perform practical development and project management activities
- Know when to specify the application requirements in formal form.
- Differentiate between the different formal methods and when to use each of them.

Main Topics of Study:

- Agile
- SCRUM
- SPRINTS
- BURNDOWN charts
- XP
- Usability engineering and UI
- UX with agile
- Propositional logic
- First order logic, resolution, translation from natural language to FOL
- OCL
- Writing class models
- Z formal specification
- B formal methods
- Temporal Logic
- Model Checking, SMV
- Petri-nets

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Identify the different development processes and the differences between them
2. Describe the different stages of agile and XP development
3. Explain the different formal specification levels and their uses
4. Outline the problems and risks of informal requirements

Thinking skills

5. Analyse software engineering specification problems
6. Solve different engineering problems with alternative solutions

Subject-based practical skills

7. Design applications through agile /scrum development

8. Design formal specification Using USE tool and nuSMV tool
9. Manage computer systems resources

Skills for life and work (general skills)

10. Work and communicate effectively in a team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on software projects and assignments • 10% on quizzes • 25% on a midterm exam (140 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- O. Hazzan, Y. Dubinsky, “Agile Software Engineering”, Springer, 2008.

Recommended

- “Agile Software Engineering with Visual Studio” , S. Guckenheimer, N. Loje, 2012
- J. Shore, S. Warden, “The Art of Agile Development”, O'Reilly Media, 2008

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 200 hours	Lectures/ Tutorials/Practicals
2.Student Learning Time: 100 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	300 hours

Module Title: Computer Networks and Distributed Systems	**Module Code:** EG7533 /N.A.Y. **Level:** 5 **Credit:** 30 **ECTS credit: 15**	**Module Leader**: Prof. Dr. Ayman Bahaa-Eldin

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

Main Aim(s) of the Module:

- To apply a top-down approach to present the different network layers starting from the application layer and ending with the physical layer
- To build a distributed system and to understand the different methodologies and technologies used in distributed computing

Main Topics of Study:

- Network performance, rate and switching
- Protocols Architecture: ISO/OSI, TCP/IP
- Multi-access channels, Ethernet, and Switching
- Routing in intra and Internet
- Network Operational Security
- Client Server Architecture and P2P
- Socket Programming
- Message-oriented middleware systems
- Distributed processes
- Distributed file systems
- Fault tolerance
- Web services
- Introduction to Cloud and Grid Computing

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Outline the basic concepts of the ISO/OSI reference model and the TCP/IP protocol stack
2. Explain the use of socket programming in networking applications
3. Describe the different models of distributed computing
4. Recognize the differences between computational and communication overheads

Thinking skills

5. Evaluate network performance
6. Evaluate availability and security of distributed computing resources
7. Design a distributed computing model to solve a complex problem

Subject-based practical skills

8. Design and Implement a distributed computing model
9. Configure a working environment for distributed computing

Skills for life and work (general skills)

10. Work and communicate effectively in a team

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 10% on lab reports and assignments • 10% on software projects • 10% on quizzes • 25% on a midterm exam (140 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- Kuross, James F., and Keith W. Ross. ""Computer Networking: A Top-Down Approach Featuring the Internet", Pearson, 7th Edition, 2017.
- Dollimore, Jean, Tim Kindberg, and George Coulouris. "Distributed systems: concepts and design" Massachusetts" Pearson, 5th Edition, 2011.

Recommended

- A. Tanenbaum and D. Wetherall , "Computer Networks", Pearson, 5th Edition, 2010.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 200 hours	Lectures/ Tutorials/ Practicals
2.Student Learning Time: 100 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	300 hours

Module Title: Computer Vision	**Module Code:** EG7534 /N.A.Y. **Level: 5** **Credit:** 15 **ECTS credit: 7.5**	**Module Leader**: Dr. Seif Eldawlatly

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

Main Aim(s) of the Module:

- Demonstrate knowledge and understanding of the concepts of image processing and computer vision.
- Learn different solution designs and methods of image processing and computer vision problems.
- Apply methods from related fields (linear algebra, signal processing, mathematics and statistics) in the computer vision process.
- Apply the knowledge and practice for designing and implementing real applications.

Main Topics of Study:

- Image Formation
- Pixels and Histogram
- Spatial Filtering
- Segmentation
- Morphology
- Frequency Domain
- Feature Detection
- Feature Description
- Matching and Fitting
- Multiple Views
- Machine Learning
- Object Recognition

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Demonstrate the basic definitions and aspects of computer vision concepts, primary steps, and advanced methods.
2. Demonstrate the foundations of digital signal processing in image transformation, enhancement, restoration, segmentation, feature extraction, and classification, and define the needed concepts from related sciences.
3. Define and be aware of the central role of computer vision in solving problems in several real life environments and applications.

Thinking skills

4. Design, analyze, and verify methods and algorithms for image acquisition, enhancement, restoration, segmentation, description, and classification.
5. Solve related mathematical and statistical problems based on the acquired knowledge.

Subject-based practical skills

6. Design efficient data structures and algorithms/solutions for different computer vision and image analysis problems that are optimized with respect to available resources.
7. Apply theoretical concepts and practical techniques from related fields (mathematics, statistics, signal processing …) to produce the required solution.

Skills for life and work (general skills)

8. Communicate ideas and solutions effectively by oral, written and visual means.
9. Work effectively as an individual and in teams, either as a leader or a member.
10. Refer to relevant literature search for information and engage in life-long self-learning discipline.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on lab reports and assignments • 10% on quizzes • 25% on a midterm exam (70 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- Richard Szeliski, “Computer Vision Algorithms and Applications”, Springer, 2010.

Recommended

- Gonzalez and Woods, “Digital Image Processing”, Pearson, 4th edition, 2017.
- Forsyth and Ponce, “Computer Vision a Modern Approach”, Pearson, 2nd Edition, 2011.
- Scott Krig, “Computer Vision Metrics”, Springer, 2016.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/Tutorials/Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	150 hours

Module Title: Internet Programming	**Module Code:** EG7535 /N.A.Y. **Level: 5** **Credit:** 15 **ECTS credit: 7.5**	**Module Leader**: Dr. Gamal Ebrahim
Pre-requisite: Computer Programming (2)	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: ASU		

Main Aim(s) of the Module:

- Design and develop a Web page using HTML and CSS
- Understand asynchronous client/server communication.
- Understand the creation of PHP applications

Main Topics of Study:

- HTML
- CSS
- Javascript
- DOM
- JQuery
- AJAX
- PHP

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Identify the structure of a web page and its basic elements.
2. Classify the server side and client side communication.
3. Recognize document tree structure.

Thinking skills

4. Style web pages using CSS.
5. Deal with all web page elements using DOM.

Subject-based practical skills

6. Learn client side scripts using Javascript and JQuery.
7. Establish asynchronous client-server communication using AJAX.
8. Learn server side script using PHP.

Skills for life and work (general skills)

9. Apply knowledge to create different purpose websites.
10. Write client/server side script to handle various user inputs as well as dynamic pages.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**

Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on assignments and mini projects • 10% on quizzes • 25% on a midterm exam (70 hours of student effort)	100%	1- 10

Reading and resources for the module:

Core

- P. Scobey and P. Lingras, "Web Programming and Internet Technologies: An E-Commerce Approach", Jones & Bartlett Learning, 2nd Edition, 2016.

Recommended

- J. Dean, "Web Programming with HTML5, CSS, and JavaScript, Jones & Bartlett Learning", Jones & Bartlett Learning, 2018.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/ Tutorials/Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	150 hours

Module Title: High-Performance and Mobile Computing	**Module Code:** EG7641 /N.A.Y. **Level:** 6 **Credit:** 30 **ECTS credit: 15**	**Module Leader**: Prof. Dr. Ahmed Hassan

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

Main Aim(s) of the Module:

- To demonstrate the understanding of Mobile computing and mobile communication infrastructure.
- To design and develop mobile application using various methodologies.
- To demonstrate the understanding of parallelising techniques in Scientific Computing.
- To evaluate the mobile application design and implementation
- To Design and implement parallel programs using high-level programming.
- To develop and execute parallel programs on high performance computing.
- To evaluate the mobile application design and implementation from both the empirical and theoretical points of view

Main Topics of Study:

- Mobile computing.
- Mobile communication technologies and infrastructure.
- Mobile computing architecture.
- Networking and Protocols
- Mobile application development lifecycle.
- Mobile application development SDKs.
- Cloud computing.
- Location based services.
- Mobile Databases.
- High-performance computing.
- Parallelising and Parallel Programming
- GPUs
- Designing GPU based systems.

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Identify the development challenges in mobile applications and platforms. Describe the design process and Select the suitable communication channel in mobile environment.
2. Describe different levels of abstraction in HPC modeling and of different parallel programming models.

Thinking skills

3. Analyse and compare the advantages and disadvantages of the different mobile computing technologies
4. Evaluate the resource allocation and utilisation in the different mobile environments.
5. Analyse and assess the performance of HPC programs.

Subject-based practical skills

6. Design and develop a mobile application.

7. Design and develop parallel programs to solve practical problems.
8. Evaluate the suitability of different HPC solutions to standard problems.

Skills for life and work (general skills)

9. Work and communicate effectively in team.
10. Develop skills related to creative thinking and problem solving.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on assignments/ group project • 10% on quizzes • 25% on a midterm exam (140 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- David B. Kirk, and Wen-mei W. Hwu, "Programming Massively Parallel Processors: A Hands-on Approach", Morgan Kaufmann, 3rd Edition, 2016.
- Asoke K. Talukdar, "Mobile Computing", McGraw-Hill, 2nd Edition, 2010.

Recommended

- P. Pacheco, "An Introduction to Parallel Programming", Morgan Kaufmann, 2011.
- M. J. Quinn, "Parallel Programming in C with MPI and OpenMP", McGraw Hill, 2003.
- J. Sanders and E. Kandrot, "CUDA by Example: An Introduction to General-Purpose GPU Programming", Addison-Wesley, 2010.
- Jochen H. Schiller, "Mobile Communications", Pearson, 2nd Edition, 2003

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 200 hours	Lectures/ Tutorials/ Practicals
2.Student Learning Time: 100 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	300 hours

Module Title: Software Engineering 2	**Module Code:** EG7642 /N.A.Y. **Level: 6** **Credit:** 30 **ECTS credit: 15**	**Module Leader**: Prof. Dr. Hoda Korashy Mohamed
Pre-requisite: CA5102 Software Engineering 1	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: ASU		

Main Aim(s) of the Module:

- Use the language of patterns to find and to record solutions to recurring problems of system architecture
- Analyze and compare different techniques for design patterns.
- Identify Software Maintenance and Evolution
- Understand the specific features of Software project management

Main Topics of Study:

- Software patterns
- Software maintenance and evolution
- Reverse engineering
- Software refactoring
- Project management
- Risk management and Risk analysis
- Human resource management
- Time management

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Describe the processes of software design patterns.
2. Identify overall process of Software Planning, Monitoring and Control.
3. Describe the different aspects of project management methodologies and software projects life cycles.

Thinking skills

4. Analyze and compare different methods used in software design patterns.
5. Design and implement change and maintenance operations on existing software.
6. Evaluate different approaches of software project management

Subject-based practical skills

7. Develop practical projects using complete analysis, design and implementation
8. Design a full plan for a software project

Skills for life and work (general skills)

9. Work and communicate effectively in team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals.
10. Refer to relevant literature search for information and engage in life-long self-learning discipline.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 20% on software projects and assignments • 10% on quizzes • 25% on a midterm exam (140 hours of student effort)	100%	1-10

Reading and resources for the module:

Core

- Allan Snallway and James R. Trott, "Design Pattern Explained", Addison-Wesley, 2nd Edition, 2004.
- M. Wooldridge, "Software Project Management", 1998

Recommended

- E. Gamns and R. Helm, "Design Patterns : Elements of Reusable Object-Oriented Software", Pearson, 2000.
- Ian Sommerville, "Software Engineering", Pearson, 10th Edition, 2015.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 200 hours	Lectures/ Tutorials/Practicals
2.Student Learning Time: 100 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	300 hours

Module Title: Computer and Network Security	**Module Code:** EG7643 /N.A.Y. **Level: 6** **Credit:** 15 **ECTS credit: 7.5**	**Module Leader**: Prof. Dr. Ayman Bahaa-Eldin

Pre-requisite: None	**Pre-cursor:** None
Co-requisite: None	**Excluded Combination:** None
Locations of delivery: ASU	

Main Aim(s) of the Module:

- Demonstrate the concepts of cryptology.
- Understand the concepts of advanced algorithm design.
- Discriminate between Symmetric and Public key ciphers.
- Understand better computer security.

Main Topics of Study:

- Classical Encryption Techniques
- Block Cipher and DES
- Finite Fields
- AES
- Number Theory
- Public Key Cryptography
- Key Management
- Message Authentication and Hashing
- Digital Signature
- Operational Security
- Firewalls and IDS

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

1. Explain Cryptography and Cryptanalysis.
2. List different Encryption Algorithms.
3. Describe Block ciphers and stream ciphers.
4. Outline Hashing and Digital signature.

Thinking skills

5. Analyze different problems that may arise during data communication and the impact of different security breaches on computer security?
6. Select suitable ciphers for different applications

Subject-based practical skills

7. Implement different ciphers and cryptanalysis techniques
8. Implement Firewalls and IDS ACL rules.

Skills for life and work (general skills)

9. Work and communicate effectively in team by effective collaboration and task management, working in a constrained stressful environment, and leading and motivating individuals.

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures/tutorials/practical sessions/workshops. Feedback will be provided throughout the module in the form of both formative and summative work.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Continuous assessment tasks that include: 40% for Final Exam 60% for coursework divided as: • 5% on participation • 10% on lab reports and assignments • 10% on software projects • 10% on quizzes • 25% on a midterm exam (70 hours of student effort)	100%	1-9

Reading and resources for the module:

Core

- Stallings, William, "Cryptography and network security: principles and practice", Pearson, 7th Edition, 2017.

Recommended

- Preneel, Bart, Christof Paar, and Jan Pelzl. Understanding Cryptography. Springer, 2014.

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/ Tutorials/ Practicals
2.Student Learning Time: 50 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	150 hours

Module Title: Graduation Project	**Module Code:** EG7644 /N.A.Y. **Level:** 6 **Credit:** 45 **ECTS credit: 22.5**	**Module Leader**: Dr. Mahmoud Khalil
Pre-requisite: 90 credits at level 5	**Pre-cursor:** None	
Co-requisite: None	**Excluded Combination:** None	
Locations of delivery: ASU		

Main Aim(s) of the Module:

To enable students to undertake a sizeable piece of academic work in an area of their own interest relevant to, and demonstrating technical skills acquired in, their programme of study.

The project requires appropriate research, analysis, design, implementation, quality assurance, evaluation and project management.

Main Topics of Study:

- Project Overview and Understanding
- Identification of a suitable project topic
- Research methods
- Project Design
- Project Implementation
- Project testing, validation, and verification
- Project Documentation and Presentation

Learning Outcomes for the Module

At the end of this module, students will be able to:

Knowledge

10. Explain the problem statement and motivation of the graduation project
11. Explain the problem domain and its current state of the art
12. Illustrate the different project design methodology

Thinking skills

13. Follow sound design methodology throughout the project
14. Master the tools needed for the project design and implementation

Subject-based practical skills

15. Design and build systems to solve some computer engineering problems
16. Test and verify the implemented system

Skills for life and work (general skills)

17. Refer to relevant literature search for information
18. Develop problem solving and creative thinking
19. Develop technical writing and presentation skills

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

Lectures will be used to provide an overview of the project, its requirements and organisation and an introduction to research methods, literature surveys and referencing. In addition, every student will be allocated a supervisor at an early stage within the module. The supervisor will support the student for the duration of the project. Feedback, in the form of formative assessment, will be provided by supervisors on a regular basis.

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Portfolio Including 8000 word project report, intermediate deliverables and a 15 minute viva presentation	100%	1-10

Reading and resources for the module:

Core

- Depends on Project

Recommended

- Depends on Project

Indicative Teaching and Learning Time (10 hrs per credit):	**Activity**
1.Student/Tutor interaction, some of which may be online: 100 hours	Lectures/ Supervision/ Practicals
2.Student Learning Time: 350 hours	Essential and background reading, tutorial preparation, assignment planning and preparation, examination revision.
Total hours (1 and 2):	450 hours

7 PROGRAMME MANAGEMENT

- Students' support and guidance are provided through a range of resources. A welcome and induction process is starting in their first week, where all students are guided to their programme studies.

- The programme pays special attention to the learning management system that helps students and staff members to intercommunicate effectively in terms of course material, assignment, term-work marks … etc.

- The programme's learning management system is setup to have a page for each course studied during the semester. The student can access his courses from the main programme web-page.

- All electronic services provided to the students requires the use of university e-mail, hence, it is created automatically for the programme's student when he is first enrolled to the programme, and he retains this e-mail until he graduates.

- The Student Information System (SIS) is the place where students can access all your academic records. It can be reached on the main programme web-page, which also provides brief information about the mission and vision of the programme, and the important dates related to student academic activities.

- Every student is assigned an Academic Advisor who is one of the faculty members and may continue with the student for the whole study duration. The Academic Advisor should follow-up with the student, assist him in selecting courses each semester, and request to place the student under probation for one semester.

- For each hour (lectures or tutorials) the instructor should have an office hour. It could be twice a week for 1.5 hours each. Office hours will be determined in the first class and will be posted on the Instructor's office door.

- Students will be given a student handbook at the start of their programme of study.

- Programme Committees provide a formal structure for student participation and feedback on their programme of study. Programme committees provide a forum in which students can express their views about the management of the programme, and the content, delivery and assessment of modules, in order to identify appropriate actions to be taken. Terms of reference are provided in Appendix D.

Students Involvement

There are different facilities that ensure students involvement that include:

a) Students' Affairs Administration

The students' affairs administration is chaired by the Vice-Dean for education and students' affairs and is located in the main building. This administration has representatives at the programmes' administration offices (Ground Floor of the New Educational Building). The secretariat of each programme (at the programmes secretariat office – Ground Floor of the New Educational Building) also collaborates with the previous representatives in accomplishing the following tasks:

- Archiving of the students' files.
- Issuing the students' identity cards.
- Electronic recording of the students' course registration, add/drop, and withdraw.
- Processing the students' course evaluation at the end of each semester.
- Issuing the students' records at the end of each semester.
- Issuing the students' graduation certificates.
- Processing the students' appeals and requests.

b) Students' Union

The students' union is also under the general supervision of the Vice-Dean for education and students' affairs. As part of the Faculty of Engineering, the programmes' students are members in the union and have similar rights and benefits as the mainstream students, including entering the union's yearly elections.

c) Financial Affairs Administration

The programmes' financial affairs administration, located at the Ground Floor of the New Educational building, is responsible for issuing the payment orders for the students' tuition fees at the beginning of each semester. The administration is also responsible for collecting the copies of the students' payment receipts, which should be presented by the students after making their payment at the Faculty treasury. Programmes' students who fail to present copies of the payment to the programmes' financial administration risk having no payment records at the programmes.

d) Library

The Faculty library provides a service specially designed to fulfil the requirements of all academic programmes. It is open for all Faculty members for reference use and borrowing. The main library has a shelf space for over 40,700 books on all subjects forming part of the Faculty curriculum. It has 353 technical periodicals (the Faculty receives 23 periodicals yearly in a regular basis). Additionally, it has more than 3,340 Ph.D. and M.Sc. theses resulted from all Faculty departments' activities. The students' library has multiple copies of textbooks, amounting to over 13,000, available for short-term borrowing to students. According to the Engineering Faculties libraries

development project, annexed to the Ministry of Higher Education, the library is interconnected through the Internet with all the libraries of engineering faculties nationwide. VTLS library software system has been installed which contains all the modules to provide library services to the Faculty community.

e) ASU -FoE Information Systems

ASU - FoE have a solid understanding of the importance of information systems in each aspect in the CHEP academic environment. Hence, a comprehensive web portal has been created for CHEP that has all information and services needed for the student, parents, and staff members. Learning Management System (LMS) is one of the available service at the ASU - FoE portal for all students mainly to have their course materials posted regularly on it with a dedicated protected access to the courses he enrolled in them. More importantly, a comprehensive Student Information System (SIS) is another service that is available on the portal to all parties involved in the system. The student can use SIS to access his academic records, do course registration, request to open courses that are not offered, or even request advising appointment with his academic advisor.

8 PLACEMENT REQUIREMENTS

Students eligible to get enrolled in the Credit Hours Engineering Programmes are those with the general certificate of secondary education (Thanaweya Amma), mathematics section, or equivalent, who have been deployed to the Faculty through the Coordination Office, or transferred from other Faculties, in accordance with the rules and conditions established annually by the Supreme Council of Universities.

The Council of the Faculty of Engineering establishes general rules for admission to the programmes considering the student preferences and the principle of equal opportunities as the basis for the admission of students to these programmes. When the student applies to the credit hours programmes, the Council of the Faculty of Engineering may assign him a maximum of two basic courses as an admission prerequisite. These courses will not be included in the student's GPA and are recommended by the Programmes Administration Council and approved by the Council of the Faculty of Engineering. Concerning the internal students transfer to/from the credit hours system and the Transfer from outside the Faculty, kindly refer to Articles (43 and 44) of the Internal Regulations.

For the Academic Calendar, please refer to Appendix A

Scholarships

The student who achieves an accumulative GPA of 3.6 or higher after any semester and did not fail any course throughout his course of study is included in the Dean's List and receives partial exemption from charges on the next semester. This exemption is dependent on the student's GPA as recommended by the Programmes Administration Council in this regard and after approval of the Council of the Faculty of Engineering. The student who keeps an accumulative GPA of 3.3 or higher in every semester all through his course of study and does not fail any course, graduates with an Honor Degree, which is documented in his graduation certificate. Additionally, the top 30 students in Thanaweya Amma, mathematics section, who enrolled in the credit hours programmes, are fully exempted from paying any tuition fees in their first semester.

To maintain this exemption in the following semesters, the student should maintain an accumulative GPA of 3.6 or higher in every semester. This exemption is declined once the student fails to achieve this accumulative GPA in any semester. The faculty sets a system for encouraging distinguished students through reducing their tuition fees in accordance with their accumulative GPAs. At the beginning of each semester, the distinguished students' list is announced together with the associated tuition fees reductions.

Reference to the Suitability procedure and provide web link

https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations
(Manual of General Regulations, Part 13)

9 STUDENT SUPPORT

9.1 Local arrangements for academic and pastoral care for students

- Programme teams must ensure that Academic Advisor have the knowledge and skills to carry out the role. The role includes helping students to understand:
  i. The academic and related skills required for successful study at CHEP.
  ii. The need for self-direction and responsibility for own learning.
  iii. Their learning needs beyond their current courses and immediate assessments.
  iv. An opportunity to identify areas of weakness.
  v. Where to find information, help and support.
  vi. Clarification of aims and choices for progression, employment and further study [internship]

- Academic Advising in ASU-FoE:
  i. Must exist for every year.
  ii. That it must form part of the student induction process especially for General Level Year Students.
  iii. Must be used as a mechanism, to identify 'at risk students'.
  iv. Must happen at critical moments in each semester. [week 1 & 8]

- Programme teams must carefully manage the Academic Advising system so that students understand its role and know how to access it.
- Academic Advising needs to be carefully managed with its importance being emphasised:
  i. During the induction period for each Level of the programme.
  ii. In student handbook.
  iii. By Academic Advisor
  iv. By Course Instructors-via class announcements
  v. Via email and SIS.

- Unit Heads agree procedures and systems to manage Academic Advising. These will include:
  i. Allocation of Academic Advisors for all Levels
  ii. Ensuring student is informed
  iii. Delivery of Academic Advising
  iv. Identification of students at risk

9.2 Local Personal Tutor support

- Programme teams must meet the minimum requirements for delivery of Academic Advising.

  - Meet in weeks 1 and 8 each semester
  - Identify issues and agree strategies
  - Keep a record of meetings [SIS+ student copy]
  - Feedback issues and takes action as appropriate

- Advertise Office Hours when 1:1 appointments can be made according to Advisor and student Schedule.

- Advisor need to be clear about the focus of the meeting:
  i. To check that student has settled into the Programme?
  ii. To identify any concerns the student may have?
  iii. To review student's progress [preferably quantitative]?
  iv. To review and offer advice on student's performance in assessments/exams?
  iv. To address concerns about performance or attendance?
  v. To review progression or career plans [internship]?

- Meeting -encouraging change
  i. Encouraging change -telling or helping?
  ii. Giving constructive feedback
  iii. Discussing options
  iv. Agreeing actions –SMART targets
  v. Producing a realistic plan of action
  vi. Getting commitment
  vii. What's going well?
  viii. What could go better?

- Follow-up from meetings –ensuring action
  i. What actions are required by the student or by the Academic Advisor?
  ii. Does this involve liaison with:
    - Course Instructors?
    - Unit Heads?
    - Vice Director?

9.3 Local Careers Advice

- Programme teams must ensure that staff acting as Academic Advisors are aware of relevant learner support services.
- Academic Advising is only a part of Learner Support:
  i. Employability Skills (through events)
  ii. Students Activities
  iii. The Library
  iv. Disability issues
  v. The Student Union

Employability and Career Development Centre (ECDC) is a Centre constructed through the collaboration between Ain Shams University and the American University, it has a permanent headquarter in Faculty of Engineering and another headquarter in Ain Shams University. It provides special training programmes for students in order to develop their capabilities in the professional and employment fields. The centre aims to guide the trainee to his excellence and weaknesses points, and how to raise points of excellence and overcome weaknesses.

9.4 Local arrangements for supporting students with disabilities/dyslexia

Faculty of Engineering provides support and equal opportunity for learning to its diverse community especially to those with disability. The faculty aimed to provide equal learning environment to experience the same level of equality and meet the same level of academic potential. The objectives are:

i. Ensure the accessibility to all faculty facilities
ii. Ensure that admission requirements do not hinder anyone from enrolment by unnecessary barriers
iii. Encourage people with disability to courses admission by providing any possible support.
iv. Determine the needs of the disable and support staff to deal with their needs

This is through a student disability services unit. The student should fill in the form describing his/her conditions to request for disability services.
According to each case, the unit can provide:

i. Quiet areas for exams equipped with the required physical changes
ii. Providing staff members assisting for writing in exams
iii. Extra exam time
Extended deadline for the assignments and attendance
iv. Providing special seating place in class
v. Providing large print hand-outs, verbal description for visual aids

Please refer to Appendix F for Student Entitlements, for support available at UEL.

10 RESOURCES

a) Local library and IT resources

ASU - FoE central library serves students and researchers in various fields besides the Digital Library to provide an online service for users. There is (1) central library with (3) halls according to the following:

- The student library hall contains (16,461) books.
- The teaching staff hall contains (29,607) books.
- Digital Library Hall

The Digital Library serves to provide an online Service for users. It gives online access to the contents of the library, including books and theses. The digital library website: ***http://srv2.eulc.edu.eg/eulc_v5/libraries/start.aspx***

Other learning resources are the Egyptian Bank of Knowledge (EBK) through the website: ***http://www.ekb.eg/*** "Egyptian Knowledge Bank", is one of the largest national projects that is concerned with education in Egypt, it aims to provide huge and diversified sources for knowledge and culture for free. It comes after contracting with several international publishing houses to publish their contents in all scientific and cultural disciplines, to have the system for the new Egyptian Cultural Revolution completed. Generally, 25 global publishing house and specialised companies, the Egyptian Knowledge Bank managed to contract with to provide their contents & technologies. E-Mail Services involved a developed Cooperation of the University with Microsoft Corporation to Serve Undergraduate and Postgraduate Students offering new features for the official e-mail users.

b) Other local resources relevant to supporting the programme

The faculty offers students Training Support through **Global Training Technology Centre**. It aims to be a centre for innovation in technology and entrepreneurship, as to form a link between academic study and labour market. The centre offers training programmes to serve students and graduates at the same time, these training programmes aim to develop the creative sense of the trainees in order to integrate them into creative and innovative works that would serve the industrial field and the community. Depends on the overlap between the different disciplines in various fields and at various levels. The centre is nearly 1000 m² area, it works as the headquarters for the students to practice their activities in the future, and the college is preparing the headquarters of the centre to accommodate the necessary training activities.

Employability and Career Development Centre (ECDC) is a Centre constructed through the collaboration between Ain Shams University and the American University, it has a permanent headquarter in Faculty of Engineering and another headquarter in Ain Shams University. It provides special training programmes for students in order to develop their capabilities in the professional and employment fields. The centre aims to guide the trainee to his excellence and weaknesses points, and how to raise points of excellence and overcome weaknesses.

The number of computers available to students is about 600 modern machines. A suitable number of computers are available for faculty members in their respective laboratories and offices in different sections. The number of computers available to employees is 250 devices. Computer labs are run centrally for students. The method of using these labs has been adopted by setting a nominal fee of not less than two pounds per hour to use the central labs which are open to access the network, while the student does not bear any burdens to enter the laboratories associated with the ministry while the Income is suitable for the maintenance and modernization of computers in college. The databases and information systems of faculty staff members, their assistants, students, graduate students, expatriates, administrators and libraries have been developed and updated. The databases are continuously updated.

The Faculty of Engineering has a website through the main website of Ain Shams University. The website is: ***https://eng.asu.edu.eg/*** . The website provides various services for students and faculty members by presenting the internal regulations of the bachelor's degree course as well as higher education. The site is being developed and data recorded within it are consistently updated. The contents of the various educational materials are displayed. The course schedules and exam results are announced at the end of the semester. The site is available in Arabic and English so that the user can choose the appropriate language. This site is regularly updated by site administrators and college administration. E-mail access is also available to the faculty members and the assistant staff and the students on the website of the College.

In order to update the educational services to the international standards, an online portal was developed in order to open the access to students and staff members to perform efficiently online. Students can view their courses, submit coursework and view their grades. Staff members can upload their lectures, view the online submissions and grade online. An information technology unit was set up for the electronic portal of the college to be the main focus of interaction between students and faculty.

The following table shows the available software packages and the number of license for each one:

Company	Product	License Numbers
Microsoft	Azure for student	by each student ID
	Window 10	by each student ID
	Visual Studio Enterprise 2017	by each student ID
	Visual studio for Mac	by each student ID
	SQL Server 2017 Developer	by each student ID
	SQL Server 2017 Enterprise	by each student ID
	Office 365 A1 for faculty	by each faculty ID
	Office 365 A1 for students	by each student ID
	Office 365 A1 Plus for faculty	by each faculty ID
	Office 365 A1 Plus for students	by each student ID

	Windows Server 2012 R2 Datacenter	
	Windows Server 2012 R2 Essentials	
	Windows Server 2012 R2 Standard	
Autodesk Education Community	Revit 2015	up to 1250 devices
Vmware	VRealize Suite 7 Enterprise	
	VRealize Suite 7 Standard	
	VMware vSphere 6.5 Enterprise	
	VMware vSphere 6.5 Standard	
	VMware Fusion 10	
	VMware vCenter Server 6 Standard	
	VMware Workstation 14	

11 INFORMATION ABOUT QUALITY AND STANDARDS

11.1 Assuring the quality and standards of the award

You are enrolled on a programme of study leading to the award of a degree of the University of East London (UEL). As such, you are regarded as a student of the University of East London as well as ASU- FoE and both institutions work together to ensure the quality and standards of the programme on which you are registered. The final responsibility for all quality assurance, validation and standards' matters rests with UEL.

Some of the ways in which we ensure the quality and standards of the programme include:

Approval of the programme and institution at which you are studying
Before the programme started, our University, through an approval process, checked that:

- there would be enough qualified staff to teach the programme;
- adequate resources would be in place;
- the overall aims and objectives were appropriate;
- the content of the programme met national benchmark requirements, where applicable
- the programme met any professional/statutory body requirements if applicable;
- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

Appointment of external examiners
The standard of this programme is monitored by at least one external examiner external to UEL, appointed by UEL. External examiners have two primary responsibilities:

- To ensure the standard of the programme;
- To ensure that justice is done to all students.

External examiners fulfill these responsibilities in a variety of ways including:

- Approving exam papers/assignments;
- Attending assessment boards;
- Reviewing samples of student work and moderating standards;
- Ensuring that regulations are followed;
- Providing feedback to the University through an annual report that enables us to make improvements for the future.

Review and Enhancement Process

- This annual review includes the evaluation of and the development of an action plan based on:
- external examiner reports and accreditation reports (considering quality and standards);

- statistical information (considering issues such as the pass rate);
- student feedback obtained via programme committee and module evaluation questionnaires.

Periodic reviews of the partnership and programme

- This is undertaken by a panel that includes at least two external subject specialists. The panel considers documents, looks at student work, speaks to students and speaks to staff before drawing its conclusions.

11.2 Award certificates

Issuing transcripts of results to students, and award certificates to successful students on programmers.

The student who achieves an accumulative GPA of 3.6 or higher after any semester and did not fail any course throughout his course of study is included in the Dean's List and receives partial exemption from charges on the next semester. This exemption is dependent on the student's GPA as recommended by the Programme Administration Council in this regard and after approval of the Council of the Faculty of Engineering.

Students who complete 480 credits, graduate with an Honours Degree, which is documented in their graduation certificate. The faculty sets a system for encouraging distinguished students through reducing their tuition fees in accordance with their academic performance. At the beginning of each semester, the distinguished students' list is announced together with the associated tuition fees reductions.
Students who manage to fulfil all graduation requirement are awarded a dual B.Sc. degree from ASU – FoE in Environmental Architecture and Urbanism and UEL in Architectural Design Technology.

11.3 Equality and Diversity

ASU Equality and Diversity Strategy

- ASU commits to ensuring equality and diversity in its campus. Equality is ensured for everyone regardless any grounds of discrimination such as gender, age, color, disability and religion.

- The university supports a safe environment for both working and studying. The university environment must be free of bullying, harassment, and any form of discrimination. Any act of the aforementioned will not be tolerated and any complaints will be taken seriously. Anyone who feels being subjected to these acts is encouraged to raise complaints.

- All academic staff members, students and employees are supposed to treat each other with mutual respect and fairness. Everyone should respect the presence of individual differences, diversity in culture, personal opinions and beliefs.

- Equal opportunities and access to facilities are allowed for all staff and students. Each staff member or student is given full support to develop their skills and talents. Selection for employment, promotion, training, or any other benefits will be based on aptitude and ability.

UEL Equality and Diversity Strategy

https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies (for all general policies)

12 **ACADEMIC APPEALS**

Students who wish to appeal against decisions of an Assessment Board, should notify the Credit Hours Engineering programs at Ain Shams University in writing, via official appeal forms downloadable via
https://eng.asu.edu.eg/uploads/uploadcenter/asu_337_file.pdf

Students who wish to appeal against a decision of an Assessment Board may appeal in accordance with the procedure for *Appeals against Assessment Board decisions* (Manual of General Regulations, Part 7).

An appeal may only be made on the following grounds:

(a) The assessment was not conducted in accordance with the current regulations for the programme, or there has been a material administrative error or some other material irregularity relevant to the assessments has occurred.

(b) For a student with a disability or additional need, the initial needs assessment was not correctly carried out, or the support identified was not provided, or the agreed assessment procedures for that student were not implemented.

Appeals **will not be accepted** on the grounds of disagreement with the academic judgement of an assessment board. These remain the exclusive prerogative of the Assessment Board.

Any student who wishes to appeal against the decision of an Assessment Board must:

1. Notify the Institutional Compliance Office (***appeals@uel.ac.uk***) **within ten working days of the publication of results**.

2. Complete all sections of the notification of appeal form (please contact Institutional Compliance Office if you require the form in a different format).

3. Attend a conciliation meeting with the Chair of the Assessment Board to attempt to resolve your appeal (the meeting should be convened within 10 working days of lodging the appeal).

If you are dissatisfied with the outcome of the conciliation meeting you should submit the completed notification of appeal form to the Institutional Compliance Office **within five working days of the conciliation decision** and Institutional Compliance will formally investigate your appeal.

Further information about the UEL appeals process, including copies of the formal Notification of Appeal Form, is available for view at

https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Student-Appeals

To help you decide whether your query would be an Appeal or Complaint, please refer to ***https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies***

If you would like to lodge a formal appeal or have any queries, please email the Institutional Compliance Office at ***appeals@uel.ac.uk***

13 **COMPLAINTS**

If you feel that you have not received the standard of service which it would be reasonable to expect, you may be entitled to lodge a complaint, in accordance with section 14 of the *Manual of General Regulations*. The Complaints Procedure should be used for serious matters, and not for minor things such as occasional lapses of good manners or disputes of a private nature between staff and students. A complaint may be submitted collectively by a group of students who should nominate a spokesperson who will be the channel of communication for the group, however, a complaint may not be lodged by a third party on behalf of the complainant. The complaints procedure is an internal process.

Separate procedures exist for the following, which therefore cannot form the substance of a complaint:

- appeals against the decisions of Assessment Boards (see Part 7 of the Manual of General Regulations);
- appeals against annual monitoring reviews, transfer of research degree registration or oral examination decision for postgraduate research students (see Part 9 of the Manual of General Regulations);
- appeals against the decisions of the Extenuation Panel (see Part 6 of the Manual of General Regulations);
- complaints against the Students' Union (see the Complaints Procedure in the Students' Union constitution);
- appeals against decisions taken under disciplinary proceedings (see Part 12 of the Manual of General Regulations);
- complaints about businesses operating on University premises, but not owned by our university (contact the Deputy Vice-Chancellor and Chief Operating Officer);
- complaints about the behaviour of other students (see Part 12 of the Manual of General Regulations this Manual);
- appeals against the decisions of Academic Misconduct Panels (see Part 8 of the Manual of General Regulations)
- appeals against the decisions of Attendance Appeal Panels (see the University's Attendance Policy).

ASU- FoE has a complaints process which adheres to the four stages of the University of East London complaints process. The three possible stages of the complaint process are:

STAGE 1: Local Resolution
STAGE 2: Formal Complaint
STAGE 3: Review

Stages 1 and 2 will be administered by ASU- FOE and the University of East London will administer Stage 3, including the issuing of a Completion of Proceedings letter in response to each Stage 3 complaint. ASU – FoE is responsible for keeping the University of East London informed of all complaints received.

Complainants are strongly advised to make every reasonable effort to resolve their complaint informally through meeting with the *member of ASU - FoE staff* most directly concerned with the matter, such as the Programme or Module Leader, before proceeding to Stage 2 and submitting a formal complaint.

Complaints must normally be lodged within set time limits (please see Complaints Procedure for further details). This ensures that the people involved still remember the case, and the facts can be established.

Further information about our University's complaints procedure, including copies of the formal Complaints Form, is available for view at

https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Student-Complaint-Procedure

If you would like to lodge a formal complaint or have any queries, please email the Institutional Compliance Office at ***complaints@uel.ac.uk***

14 **EXTENUATION**

General Information about extenuation can be found at
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Extenuation-Procedures

The University of East London has agreed, through Academic Board, procedures governing extenuation for students concerning the assessment process.

Computer Engineering and Software Systems programme will be subject to equivalent procedures, with the process being administered by, and the panel being held within Ain Shams University – Faculty of Engineering

If granted by the panel, **Extenuation can**

(i) Allow students to hand in coursework up to 7 days late.

or

(ii) Allow students to proceed to their next attempt uncapped.

Extenuation doesn't

(i) Give students more attempts to pass a module
(ii) Reschedule exams
(iii) Uncap a capped module
(iv) Give students a higher mark.
(v) Allow students to hand in work over 7 days late.

The basic principle is that extenuation should put you in the same position that you would have been in had you not missed the exam or handed in the assessment late – it does not confer any advantages.

UEL decided that its procedures would be

- Evidentially based
- Handled centrally by an panel of senior staff (not devolved to various parts of the organisation)
- Retain student anonymity where possible

The extenuation procedures are intended to be used rarely by students not as a matter of course.

The procedures govern circumstances which

- Impair the performance of a student in assessment or reassessment
- Prevent a student from attending for assessment or reassessment
- Prevent a student from submitting assessed or reassessed work by the scheduled date

Such circumstances would normally be

- Unforeseeable - in that the student could have no prior knowledge of the event concerned

- Unpreventable - in that the student could do nothing reasonably in their power to prevent such an event
- Expected to have a serious impact

Examples of circumstances which would normally be regarded as serious are:

- *A serious personal illness* (which is not a permanent medical condition – this is governed by disability procedures)
- *The death of a close relative immediately prior to the date of assessment*

Examples of circumstances which would *not* normally be regarded as extenuating circumstances are:

- Failure of computer equipment / USB stick
- Transport problems, traffic jams, train delays
- Misreading the exam timetables / assessment dates
- Minor illnesses

The judgement as to whether extenuation is granted is made by a panel of senior persons in the organisation who make this judgement on the basis of the evidence the student provides (not on their knowledge of the student) – where possible the identity of the student is not made available to the panel. The judgement is made on the basis that the circumstances could reasonably be thought to be the sort of circumstances which would impair the performance of the student etc. The actual performance of the student is not considered and is not available to the panel.

It is the responsibility of the student to notify the panel, with independent evidential documentary support, of their claim for extenuation.

More information and student guidance notes can be found at:
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Extenuation-Procedures

Appendix A

Academic Calendar 2019/2020

Semester	Activity	From	To
First Semester Fall 2019	Course Registration	07/09/2019	19/09/2019
	Classes	21/09/2019	02/01/2020
	Adding Courses	21/09/2019	26/09/2019
	Dropping Courses	21/09/2019	03/10/2019
	Midterm Exams	08/11/2019	15/11/2019
	Withdraw Courses	19/10/2019	28/11/2019
	Final Exams	04/01/2020	24/01/2020
	Break	25/01/2020	06/02/2020
Second Semester Spring 2020	Course Registration	01/02/2020	06/02/2020
	Classes	08/02/2020	21/05/2020
	Adding Courses	08/02/2020	13/02/2020
	Dropping Courses	08/02/2020	20/02/2020
	Midterm Exams	27/03/2020	03/04/2020
	Withdraw Courses	07/03/2020	16/04/2020
	Final Exams	27/05/2020	19/06/2020
	Break	20/06/2020	09/07/2020
Summer 2020 Semester	Course Registration	27/06/2020	02/07/2020
	Classes	04/07/2020	20/08/2020
	Adding Courses	04/07/2020	06/07/2020
	Dropping Courses	04/07/2020	09/07/2020
	Withdraw Courses	08/08/2020	13/08/2020
	Final Exams	21/08/2020	28/08/2020
	Break	29/08/2020	17/09/2020
Start of Academic Year 2020/2021		19/09/2020	

USEFUL WEB PAGES **APPENDIX B**

Academic Appeals
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Student-Appeals

Academic Integrity Policy
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies

Accreditation of Experiential Learning
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations
(Manual of General Regulations – Part 2 – Admission of Students)

Assessment and Feedback Policy
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Assessment-and-Feedback-Policy

Civic Engagement
https://www.uel.ac.uk/Connect/Civic-Engagement

Complaints procedure
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Student-Complaint-Procedure

Equality and Diversity Strategy
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies
(for all general policies)

Extenuating Procedures
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Extenuation-Procedures

Library and Learning Services
https://www.uel.ac.uk/lls/

Manual of General Regulations
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations

Referencing guidelines
https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Harvard-Referencing-.aspx

Skills Curriculum
https://www.uel.ac.uk/discover/governance/policies-regulations-corporate-documents/student-policies/skills-curriculum

Skills Portal
https://uelac.sharepoint.com/LibraryandLearningServices/Pages/Skillzone.aspx

Suitability Procedures
https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations
(Manual of General Regulations – Part 13 – Suitability Procedure)

Write it Right ***http://writeitright.uelconnect.org.uk/***

UEL Intranet (UEL ID required to login) ***https://www.uel.ac.uk/students***

APPENDIX C

Student Attendance and Engagement Policy – Guidance for Students

Teaching Policy

Language: English language should be used for lecturing, discussions, exams, and all verbal and electronic communications. Use of Arabic language is strictly forbidden even in one-to-one conversation between the instructor and the students.

Course Syllabus: Each course syllabus should contain: course objectives, textbook, outline, material, assessments, grading policy and outcome. Outline should contain sections covered every week with reference to chapters/sections in the textbook. The instructor should give the course syllabus to the students in the first class. The syllabus serves as a contract between the instructor and the students.

Textbook: The instructor is free to select/recommend a textbook but it should be international and available. The textbook information should be provided to the administration office or the unit head before the first class of the course.

Attendance: Attendance is taken in lecture and tutorial classes. It is assigned a percentage based on the grading policy. Students should not be allowed to enter the class after 5 minutes from the scheduled time. No eating, drinking, or mobile use in the class. If the student wants to leave the class for any reason, he will not be allowed to come back to the class. The student's attendance should not be less than 75% during the course. Otherwise, the student should not be allowed to attend the final exam.

Assignments: Assignments are given every week (spelled out in the course syllabus), preferably from the textbook. Assignments should constitute 20% of the total grade. Instructors are allowed to drop the least assignment from the grade. The assignment is collected at the end of the tutorial period of the next week. Instructors may grade only selected problems from the assignment. The graded assignment should be returned and discussed with the class.

Quizzes: Unannounced quizzes are given in the tutorials to force the students to study and be ready all time. These quizzes should constitute 10% of the total grade. The quiz is given at the end of the session for 15 minutes max. Up to 6 quizzes can be given and the least one can be dropped from the grade. The graded quiz and the model answer should be returned the following tutorial and discussed with the class.

Exams: One midterm exam should be given. Time should be indicated in the course syllabus. The midterm exam should be given during the 6th - 7th week. This exam will be held during lectures/tutorials based on course progress and will constitute 25% of the grade. The graded midterm exam and its model answer should be returned and discussed with the class. The

instructor can arrange for a bigger or more suitable room for the midterm exam. The final exam constitutes 40% of the grade. It should be a comprehensive exam covering all material. The student fails the course if he gets less than 30% of the final exam total grade. Instructors may select to have all exams open-book or closed-book.

APPENDIX D

UNIVERSITY OF EAST LONDON

TITLE:
PROGRAMME COMMITTEE (COLLABORATIVE)

TERMS OF REFERENCE

To be responsible for assuring and enhancing the quality of the student experience at programme level by:

- Providing a forum in which students can express their views about the management of the programme, and the content, delivery and assessment of modules, or equivalent, in order to identify appropriate actions to be taken in response to the issues raised and to ensure that the implementation of these actions is tracked.

- Providing formal yearly student feedback on the programme as input into the preparation of the Programme REP.

- Reviewing programme questionnaire results and making recommendations and changes arising from these.

- Receiving, considering and approving the Programme REP and identifying responsibilities for action to be taken before it is considered by School Learning and Taeching Quality Committee.

- Reviewing progress on REP action plans at each meeting.

- Reviewing the relevant documentation and other evidence prepared for Academic and collaborative Institutional Review and other external review processes.

- Reviewing proposals for modification of the programme structure (validated programmes only) and noting implementation arrangements for modifications.

- Advising the Programme Leader on mechanisms by which University policy statements, which have an impact on programme design and delivery, are implemented.

MEMBERSHIP

Programme Leader (Chair)
Administrator/Servicing Officer (ex-officio)
Programme staff making a significant teaching contribution to the programme
Learning Support Services representative
Technician representative (for laboratory based programmes)
Dean of School/department or equivalent (ex officio)

UEL Dean of School/Associate Dean of School, or equivalent (ex officio)
UEL link person (ex officio)
Two student representatives for each level and at least one part-time student (where appropriate)

The meeting will be held once per semester/term and will be quorate if 40% of the members are present.

APPENDIX E

ACADEMIC MISCONDUCT

For the purposes of university's regulations, academic misconduct is defined as any type of cheating in an assessment for the purposes of achieving personal gain. Examples of such misconduct are given below: the list is **not** exhaustive and the use of any form of unfair or dishonest practice in assessment can be considered potential misconduct.

Coursework Submitted for Assessment

For coursework submissions, academic misconduct means:

(a) The presentation of another person's work as one's own with or without obtaining permission to use it.

(b) The inclusion within one's own work of material (written, visual or oral), originally produced by another person, without suitable acknowledgment.

(c) The submission, as if it were one's own work, of anything which has been offered to you for your use, but which is actually not your own work.

(d) The inclusion within one's work of concepts paraphrased from elsewhere without citing your source.

(e) The inclusion in submitted work of sections of text, whether from electronic or hard copy sources, without appropriate acknowledgement of the source.

(f) The submission of work that the student, as the author, has previously submitted, without suitable acknowledgement of the source of their previous work; this should not normally be more than a short quotation as the same work cannot be submitted for different assignments.

(g) Including or quoting the work of other students in one's work, with the exception of published work, or outputs held in the library as a learning resource, which should be cited and acknowledged appropriately.

(h) Being party to any arrangement whereby the work of one candidate is represented as that of another.

(i) The submission, as your own work, of any work that has been purchased, or otherwise obtained from others, whether this is from other students, online services, "cheat sites", or other agents or sources that sell or provide assignments.

(j) Practices such as 'cutting and pasting' segments of text into your work, without citing the source of each.

(k) For work not intended to be submitted as a collaborative assignment: producing work with one or more other students, using study practices that mean the submitted work is nearly identical, overall or in part, to that of other students.

(l) Offering an inducement to staff and/or other persons connected with assessment.

Examinations

For examinations, academic misconduct means:

(a) Importation into an examination room of materials or devices other than those which are specifically permitted under the regulations applying to the examination in question.

(b) Reference to such materials (whether written or electronically recorded) during the period of the examination, whether or not such reference is made within the examination room.

(c) Refusing, when asked, to surrender any materials requested by an invigilator.

(d) The application of an electronic device, unless this has been expressly permitted for that examination.

(e) Copying the work of another candidate.

(f) Disruptive behaviour during examination or assessment.

(g) Obtaining or seeking to obtain access to unseen examination questions prior to the examination.

(h) Failure to observe the instructions of a person invigilating an examination, or seeking to intimidate such a person.

(i) Offering an inducement to invigilators and/or staff and/or other persons connected with assessment.

Where academic misconduct is suspected, the matter will be dealt with under the *Procedure to be followed in the event of a suspected case of academic misconduct, Part 8, paragraph 4 (or, for postgraduate research students, Appendix I)* of the Manual of General Regulations (available for view at ***https://www.uel.ac.uk/Discover/Governance/Policies-Regulations-Corporate-documents/Student-Policies/Manual-of-General-Regulations***). If it is determined that academic misconduct has taken place, a range of penalties may be prescribed which includes expulsion from the programme.

PLAGIARISM - A GUIDANCE NOTE FOR STUDENTS

1. Definition of Plagiarism

Our University defines plagiarism and other academic misconduct in Part 8 of the UEL Manual of General Regulations (to which all students are referred upon joining UEL), which is reprinted in "The Essential Guide to the University of East London". In this document, the following example of an assessment offence is given:

The submission of material (written, visual or oral), originally produced by another person or persons or oneself, without due acknowledgement*, so that the work could be assumed to be the student's own. For the purposes of these Regulations, this includes incorporation of significant extracts or elements taken from the work of (an)other(s) or oneself, without acknowledgement or reference*, and the submission of work produced in collaboration for an assignment based on the assessment of individual work. (Such misconduct is typically described as plagiarism and collusion.)

The following note is attached:
*(Note: To avoid potential misunderstanding, any phrase that is not the student's own or is submitted by the student for a different assessment should normally be in quotation marks or highlighted in some other way. It should also be noted that the incorporation of *significant* elements of (an) other(s) work or of one's own work submitted for a different assessment, even with acknowledgement or reference, is unacceptable academic practice and will normally result in failure of that item or stage of assessment.)

2. Plagiarism in Greater Detail

Work that students submit for assessment will inevitably build upon ideas that they have read about or have learnt about in lectures. That is perfectly acceptable, provided that sources are appropriately acknowledged. It should be noted, however, that the wholesale reproduction of the ideas and words of others, however well referenced, is likely to lead to failure at assessment (see section 6 below)

The submission of work that borrows ideas, words, diagrams, or anything else from another source (or sources), without appropriate acknowledgement, constitutes plagiarism. Plagiarism is not limited to unattributed cutting-and-pasting; it includes the reproduction, without acknowledgement, of someone else's work, taken from a published (or unpublished) article, a book, a website, a friend's (or anybody else's) assignment, or any other source.

When an assignment or report uses information from other sources, the student must carefully acknowledge exactly what, where and how s/he has used them. If someone else's words are used, they must be within quotation marks and a reference must follow the quotation. (See section 6 for further guidance on referencing.)

Where a concept or argument in another source is paraphrased (rather than directly quoted), quotations marks should not be used, but it will still be necessary to acknowledge the source. Remember, however, that the making of simple changes to the wording of a source, while retaining the broad structure, organisation, content and/or phraseology of the source, is unacceptable academic practice and will probably be regarded as plagiarism. (For helpful tips on how to avoid plagiarism, see "The Study Skills Handbook" by Dr Stella Cottrell, pages 122-125.)

3. Collusion

Collusion is the term used to describe any form of joint effort intended to deceive an assessor as to who was actually responsible for producing the material submitted for assessment. Clearly, students are encouraged to discuss assignments with their peers, but each student must always ensure that, where an individual assignment is specified, the report/essay submitted is entirely the student's own. Students should, therefore, never lend work (in hard or electronic copy) to friends. If that work is subsequently plagiarised by a "friend", an act of friendship might lead to a charge of collusion.

4. When to Reference

Our regulations do not distinguish between deliberate and accidental plagiarism, but you will not be accused of plagiarism, provided that you properly reference everything in your work that was said, written, drawn, or otherwise created by somebody else.

You need to provide a reference:

- when you are using or referring to somebody else's words or ideas from an article, book, newspaper, TV programme, film, web page, letter or any other medium;

- when you use information gained from an exchange of correspondence or emails with another person or through an interview or in conversation;

- when you copy the exact words or a unique phrase from somewhere;

- when you reprint any diagrams, illustrations, or photographs.

You do not <u>need</u> to reference:

- when you are writing of your own experience, your own observations, your own thoughts or insights or offering your own conclusions on a subject;

- when you are using what is judged to be common knowledge (common sense observations, shared information within your subject area, generally accepted facts etc.) As a test of this, material is probably common knowledge if

  - you find the same information undocumented in other sources;

  - it is information you expect your readers to be familiar with;

  - the information could be easily found in general reference sources.

5. <u>How to Reference</u>

Our University has agreed on a single version of the Harvard referencing system (the School of Psychology uses the American Psychological Association (APA) referencing style) and this (along with APA) can be found in Cite Them Right:

Pears, R. and Shields, G (2013) *Cite Them Right.* Newcastle: Pear Tree Press
Cite Them Right is available on line and hard copies can be found in our libraries and bookshops

6. <u>Plagiarism, or Unacceptable Academic Practice</u>?

If work that you submit for assessment includes substantial and significant elements of other sources and all of those sources are appropriately acknowledged, you will not have plagiarised, but you will be culpable of unacceptable academic practice, because there will be too little of your "own voice" to allow your knowledge to be assessed. Work that you submit for assessment must:

- use your own words;
- provide a critical commentary on existing literature;
- aim for novelty and originality;
- demonstrate your understanding of the subject area by paraphrasing.
  Work that does not meet those criteria will fail.

APPENDIX F

HEALTH AND SAFETY

- One of the principle roles of Ain Shams University administration is controlling dangers and risks. The University is aware that failures in health and safety administration can possibly prompt loss of life, injury, and damage to the University properties.
- According to the University, a fundamental standard of the Health and Safety policy is that it is in the hands of the individuals who cause the dangers and risks to manage and control them.
- The University appoints persons “capable to advice” to help with identifying, recognizing and controlling health and security dangers and risks. They may work in any sector of the University.
- Each College of the University holds a responsibility regarding the management and use of its own health and security policies and strategies. Despite that, the University and Colleges are still obliged to coordinate on the mutual matters of health and security which affect the more extensive University community.
- Heads of the different Departments must set out their own organizational courses of action for the safety measures. In addition, they abide by the general University Health and Safety Policies and are responsible for their implementation and management in their own departments and domains of responsibility.
- Each Head of Department might set up a Departmental Safety Policy, which works hand in hand with this University Health and Safety Policy to satisfy the prerequisite Health and Safety at Work measures.
- Each Head of Department must guarantee that everybody who might be influenced by the activities of the Department, knows about the health and security policies and arrangements, and has sufficient knowledge, information, time, preparation and supervision authority to allow for the identification, recognition and control of the dangers and risks to health and security.
- The supervisor of any departmental activity (field trip, practical work, office work or teaching activities) must have a comprehensive understanding of the related dangers and risks and conduct the risk assessment suitable for the circumstances of the activity. This is to fulfil the requirements of the Health and Safety at Work Regulations and different measures which state that no work might be attempted unless reasonable and adequate risk assessment has been done to define a safe and secure system of work.
- All University staff members are expected to be fully aware of both the University and Department policies and know that they hold the responsibility of this aspect for all those under their supervision or

management. This implies ensuring and promoting good working practices and environment. It also includes ensuring that practical and office work is done in safe spaces, equipment being maintained and checked in safe procedures, that the policies and strategies are being implemented and disseminated and that immediate reporting of any accidents or dangers takes place in order to take the necessary measures.

- The health and safety policy is also abiding to any private body or entity working inside the University premises. They must coordinate with the University on all matters related to health and safety management.