



**ALDAR**  
**UNIVERSITY COLLEGE**  
كلية الـدار الجامعية

## PROGRAM SPECIFICATIONS

# BACHELOR OF SCIENCE IN COMPUTER ENGINEERING

SCHOOL OF ENGINEERING AND TECHNOLOGY

## ALDAR UNIVERSITY COLLEGE

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<u>Approvals</u>	<u>Date</u>
<a href="#">Board of Trustees</a>	<a href="#">26 September 2020</a>
<a href="#">College Council</a>	<a href="#">23 September 2020</a>

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## A. Program Information, Planning & Development

### 1. Program Title

<b>Name of School</b>	<b>School of Information Technology</b>
<b>Name of Department</b>	<b>Department of Engineering</b>
<b>Title of Degree Program</b>	<b>Bachelor of Science in Computer Engineering (English)</b> 1. General 2. Cyber Security
<b>Condition/ Requirement 1</b>	Qualifying certificate for English Proficiency as per the following or another standardized, internationally recognized test that is approved by the Commission such as. <ul style="list-style-type: none"> <li>➤ TOEFL – Institutional Testing Program (ITP) with a minimum score of 550,</li> <li>➤ IELTS Test (Academic) with a minimum score of 5.5</li> <li>➤ EmSAT score of 1200</li> </ul>

### 2. Program Planning and Development

#### The Policy

This policy describes academic programs' requirements in planning, revision, and how new programs are developed.

#### Program Proposal

The Program Planning is conducted by a committee called Program Planning Committee that reports to the Vice President for Academic Affairs. The program planning is conducted to seek Initial Accreditation of a specific program from MOE-CAA.

The Chair of the department is the coordinator for developing the curriculum of any new program.

The Chair of the department ensures the following in the proposal:

1. The curriculum complies with the requirements that are stated in the CAA standards
2. The program's goals are consistent and in line with those of the School, and that the needs of assessment and Feasibility studies were conducted using valid approaches.
3. Identify the human and physical resources needed according to a plan once the program is offered.
4. The total number of credit hours must not be less than the minimum number required by the CAA. for Bachelor programs

5. Each part (General Education Courses, Core Courses, Advanced and Specialization Courses) must contain a sufficient number of elective courses to give flexibility to the students.

The proposal is introduced and discussed in the School Council. Based on the School Council's decision, the proposal is forwarded to the College Council via the Office of Vice President for Academic Affairs to seek the BOT's pre-approval to start the Program Planning cycle.

Upon pre-approval from BOT, the Program Planning Cycle is started by the School Council via an Ad Hoc "Program Planning Committee" (PPC), Chaired by the Chair of the Department with two faculty members as per the area of specialization.

The School Council shall approve the application and sent it to the College Council via Vice President Office. The College Council shall approve the proposal and send it to the BOT for approval.

The BOT discusses the proposal and can suggest changes, if any. Upon BOT approval, the proposal will be sent to the MOE-CAA for initial Accreditation.

A program will be offered only when its initial accreditation by the CAA is granted.

### The Program Details

Each program should contain the following details:

1. Name and version of the program, and the Department responsible for offering it.
2. Minimum requirements for admission eligibility
3. The English Proficiency Level required for the program admission or graduation.
4. The Minimum and maximum number of students to be admitted in each intake
5. The total number of credit hours that composes the program
6. Name of Degree to be awarded in English and Arabic languages
7. Graduation requirements as approved by the CAA.
8. The definition of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> level of study (when applicable) in terms of the number of earned credit hours.
9. The study load bands for regular students, warned students, and students with conditional admission.
10. The Study Plan consists of a list of all the courses taken by the students enrolled in the program.
11. For each course in the study plan, the following details should be provided:
  - Course ID, course name, number of credit hours, number of contact hours of Lectures, Lab, and Tutorial sessions.
  - Category of the course:
    - General Education Courses
    - Core Courses
    - Advanced and Specialization (Concentration/Technical Elective) Courses
  - Prerequisite courses when applicable
  - The number of Minimum earned credit hours required to register for the course.

- The number of maximum earned credit hours the student may complete before registering for the course becomes mandatory.
- The minimum English Proficiency Level, which is required before registration in the course, is allowed.

The Admission and Registration Department enters the program details in the System upon receiving initial accreditation from the CAA.

### **Budgeting for Programs**

ADUC ensures that the learning efforts relating to academic programs and courses are fully and transparently budgeted, including anticipated revenues and expenditures.

1. The annual budget process involves input from the unit and department heads and faculty.
2. Program budgets, both short- and long-term, are in place and based on enrolment projections, faculty hiring plans, and an assessment of the human and physical resources needed to support each program.

## B. Program Accreditation

ADUC located in the Emirates of Dubai is officially licensed since 2000, by MOE-HEA, of the United Arab Emirates to award degrees/qualifications in higher education.

In 2016, the Bachelor of Science in Computer Engineering programs was granted Initial Accreditation effective August 2016.

In September 2017, the MOE-HEA approved the Cyber Security concentration to the Bachelor of Computer Engineering Program.

## C. Program Educational Aims and Learning Outcomes

### 1. BSC CPE Program Goals

The School of Engineering and technology programs strives to provide high-quality Engineering and Information Technology education to its students. It places special emphasis on developing its graduates with the skills and knowledge to take on appropriate professional positions in Engineering and Information Technology upon graduation and grow into leadership positions or pursues research or graduate studies in the field and can effectively contribute to the advancement of the community.

The goals of the engineering program are in conformity with those mentioned in Association for Computing Machinery/IEEE computer Society. The goals of the proposed programs are shown in Table I.

**Table I the goals of the Bachelor of Science in Computer Engineering**

No.	Programs Goals	NQF Strand #
PG1	Placing importance on design and being able to select appropriate approaches in particular contexts	3
PG2	Being able to respond to the challenges and fast-changing engineering environment	2
PG3	Recognizing the range of applications for their work and continually updating their technical knowledge while working as professional engineers.	3

PG4	Can address a significant problem in computer engineering, and deploy selection of computer aided design tools, techniques and disciplined approach in arriving at a solution of the problem and identifying new tools.	2,3
PG5	Have a strong foundation of basic sciences and mathematics and are able to apply this knowledge to analyze and solve engineering problems and Understanding the important relationship between theory and practice	1
PG6	Can work effectively as a member of a team and acquire the generic skills needed to function in multidisciplinary, diverse, competitive and fast changing environment.	2,4
PG7	Can appreciate the significance of ethical issues and contribute as a well-rounded member of society.	5

## 2. BSC CPE Program Learning Outcomes and alignment with UAE QF

The program learning outcomes of the B.Sc. in Engineering program are in conformity with those mentioned in (Accreditation Board for Engineering and Technology) ABET’s A-K and ACM/IEEE CE2004 report. The program provides opportunities for students to achieve and demonstrate the learning outcomes shown in Table II.

**Table II Alignments between Engineering Programs Learning Outcomes using National Qualifications Framework (NQF) strands and ABET Program Learning Outcomes**

Engineering Programs learning Outcomes		ABET (A-K)
<b>NQF Strand # 1: Knowledge</b>		
PLO1	An ability to apply the knowledge of mathematics, science and engineering	A
PLO2	An understanding of best practices, standards, applications and how other disciplines relate to the field of work and study	K
PLO3	Ability to understand contemporary issues and to realize the impact of engineering solutions in a global and societal context.	H , J
<b>NQF Strand # 2: Skills</b>		
PLO4	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	E
PLO5	To be able to communicate effectively with a range of audiences	G
PLO6	To assist in the creation of an effective project plan and interact successfully with others in order to work towards a common result.	D
<b>NQF Strand # 3: Responsibility</b>		
PLO7	An ability to design a system, component, or process to meet desired	B ,C

	needs.	
PLO8	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	K
PLO9	An ability to identify, formulate, and solve engineering problems and integrate solutions into the user environment	E
PLO10	An ability to design and conduct experiments, as well as to analyze and interpret data.	B,C, H
<b>NQF Strand # 4: Role in Context</b>		
PLO11	An ability to function on multi-disciplinary teams with the capacity to be a team leader or valuable team member	D
<b>NQF Strand # 5: Independency and Self-Development</b>		
PLO12	An understanding of professional and ethical responsibility	F
PLO13	Recognition of the need for and an ability to engage in continuing professional development, independent learning and initiatives.	I



## D. Degree and Program Completion Requirements

### Program Completion Duration

ALDAR University College will award degree certificate, attested by MOE-HEA, on successful completion and fulfilment of following criterion as per the respective degree.

### School of Engineering and Technology

#### Department of Engineering

#### **Degree Program: Bachelor of Science in Computer Engineering (English)**

Concentrations:

1. General
2. Cyber Security

To qualify for graduation with a degree of “**Bachelor of Science in Computer Engineering**”, students must complete 140 credit hours of courses with a score of 2.0 CGPA on a scale of 4.0. The minimum duration to complete the degree program is 50 % of the prescribed, regular semesters as per the study plan.

### Department of General Education

#### General Education Program

The General Education program is offered by the department as per the guidelines of CAA. The courses offered at the general education program are to supplement the Bachelor’s degree programs. The program focusses on providing a broad understanding of humanities, social sciences and Culture. It prepares the student in terms of skill required for undertaking program in technical areas.

#### Foundation Program

The foundation program is offered by the Department of General Education to fulfill the admission criterion for the respective, prescribed the Commission of Academic Accreditation as per Standards 2011. The program offers courses along with English proficiency qualifying test preparation, as per the requirement prescribed in the admission criteria and study plan of the respective degree.

## E. Program Structure

### BSC CPE Program Structure

The CPE program requires a total of 140 credit hours for graduation. This includes 3 credit hours for 8 weeks of company training (internship) at the end of the 8th Semester. In addition, in the final year of the program, students work on a capstone project (Graduation Project I and II) involving design, implementation, testing, and evaluation of a computer-based software or hardware system. The remaining credit hours of coursework are distributed over 8 full semesters. Accordingly, a student can complete all the requirements for graduation in a period of four years.

Four approaches have been recommended in curriculum guidelines for Graduate degree programs in computer engineering (ACM/IEEE CE2004 - Computer Engineering 2004) for presenting the computer engineering program. Therefore, Curriculum model 'A' has been selected to serve as a guide to identifying the design of computer engineering curricula introduced in this report. The curriculum utilizes a relatively traditional course structure and content. It requires 41 courses, with credit hours distributed as follows:

1. General Education (Humanities & Social Science)	18 Credit Hours
2. Mathematics and Statistics	21 Credit Hours
3. Basic Science (Physics & Chemistry)	11 Credit Hours
4. Computer Engineering Courses	33 Credit Hours
5. Electrical Engineering Courses	33 Credit Hours
6. Internship	03 Credit Hours
7. Technical Electives	09 Credit Hours
8. Specialization Requirements	07 Credit Hours
9. Graduation Projects	05 Credit Hours

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**Total: 140 Credit Hours**

In accordance with (ACM/IEEE) Computer Engineering curricula 'implementation A', courses have been designed to provide coverage of the core topics of the CPE BOK. Thus, the proposed Curricula in this report provides a broad foundation in the basic sciences, mathematics and statistics, computer Engineering CE, electrical engineering EE and other aspects of general education. In particular, courses that cover the traditional EE topics in the CPE BOK core have been designed to cover the core material without going significantly beyond these topics. In contrast, a number of computer science courses do go beyond the core material. A summary of the body of knowledge including Mathematics and Science

courses, basic science courses, computer science courses, electrical engineering courses are shown in Tables IV, V, VI and VII respectively.

Students are required to take courses in general education, humanities and social requirements to ensure that they are provided with many necessary skills beyond the technical ones found in the body of knowledge. The curriculum of the CPE program comprises general education that supports the broad education of CPE students as shown in **Table III**. General education courses are offered by the Department of General Education.

**Table III General Education Courses**

SN	Course ID	Course Title	Credit Hour	Prerequisite
1.	GED 101	Computer Applications	3	None
2.	GED 108	Introduction to Arts	3	None
3.	GED 104	Islamic Culture	3	None
4.	GED 105	Environmental Studies	3	None
5.	GED 107	UAE Society and Culture	3	None
6.	GED 102	English Writing Skills	3	None
7.	GED 110	Innovation and Entrepreneurship	3	45 Credit Hours

**Students will take six of the above general education courses, where GED101, GED110 and GED102 must be included.**

**Table IV Mathematics and Statistics**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	MTH101	Calculus I	4	None
2.	MTH102	Calculus II	4	MTH101
3.	MTH103	Discrete Math	3	None
4.	MTH201	Differential Equations	4	MATH102
5.	MTH202	Linear Algebra	3	MTH201
6.	MTH301	Probability & Statistics	3	ELE303
<b>Total</b>			<b>21 Cr. Hrs</b>	

**Table V Basic Science**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	PHY101	Physics I	4	None
2.	PHY102	Physics II	4	None

3.	CHM101	Chemistry for Engineering	3	None
<b>Total</b>			<b>11 Cr. Hrs</b>	

**Table VI Computer Engineering Core Courses**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	CPE201	Computer Programming Fundamentals	4	MTH103
2.	CPE202	Fundamentals of Networking	4	CPE201,ELE202
3.	CPE203	Data Structure	3	CPE 201
4.	CPE301	Network Communications and Security	4	CPE202
5.	CPE302	Operating System	3	CPE203
6.	CPE303	Computer Architecture and Organization	3	ELE202
7.	CPE402	Embedded Systems	4	ELE303
8.	CPE404	Computer Hardware Design	4	CPE303
9.	CPE405	I/O Interfacing	4	ELE402
<b>CS Core Courses</b>			<b>33 Cr. Hrs</b>	

**Table VII Electrical Engineering Core Courses**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	ELE201	Circuit I	4	MTH102
2.	ELE202	Digital Logic	4	ENG101,MTH103
3.	ELE203	Engineering Programming and analysis	4	CPE201
4.	ELE301	Electronic Circuits	4	ELE201
5.	ELE302	Signal and Systems	3	ELE201,ELE203
6.	ELE303	Introduction to Microprocessors	4	ELE202
7.	ELE304	Digital Signal Processing	3	ELE302,MTH301*
8.	ELE401	Digital Image Processing and Applications	3	ELE304
9.	ELE402	Computer systems Instrumentation & Control	4	ELE304
<b>ELE Core Courses</b>			<b>33 Cr. Hrs</b>	

**Table VIII Technical Electives Courses**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	CME405	Telecommunication Systems	3	ELE304
2.	CME406	Radar Systems	3	ELE304
3.	CME407	Special Topics In communication	3	ELE304
4.	CPE406	Web Engineering Design	3	CPE301
5.	ITG303	Cloud Computing	3	CPE301
6.	ITG308	Intelligent Systems	3	CPE201
7.	ITG309	Digital Media	3	CPE 301
8.	ITG406	IT and Society	3	RESM202
9.	ELE403	Robotics and Simulation	3	ELE402
10.	ELE404	VLSI Design and Fabrication	3	ELE301
11.	ELE405	Fuzzy Logic & Neural Networks	3	ELE202
12.	SGE301	Advanced Electronic Circuits	3	ELE301
<b>Technical Elective Courses (3 courses required for CPE students)</b>				

CPE Students can register electives from CME subject to School Approval. Technical Elective courses will have a one-hour tutorial session for practical work as in the study plan.

Upon students' request and school approval, CME 301 Communication systems and CME402 Digital Communications, which are currently listed as required technical courses for CME, can be available to CPE as technical electives. It must be noted that these are 4 Credit hours courses and CPE students who wish to register them will go above the total (140) credit hours in their respective study plan.

<b>4 Credit hours Technical Electives List of Courses from Core CME program to CPE students</b>				
SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	CME301	Communication Systems	4	ELE302
2.	CME402	Digital Communications	4	ELE302

**Table IX Specialization Requirement Courses**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1	ENG101	Introduction to Engineering	2	None
2.	ECN201	Engineering Economy	2	None
3.	RESM 202	Research Methodology	3	Advisor's Approval
			<b>7 Cr. Hrs</b>	

## Cyber Security Concentration Program Structure

### Program Structure: Bachelor of Science in Computer Engineering with Cyber Security Concentration

Adding a new concentration Cyber Security degree, in addition to the general computer engineering degree, expands the program. The concentration is based on IEEE standards, ISO/IEC 27001:2013 standards, NESA standards, and NQF standards.

The student can select either to obtain a general degree in computer engineering or computer engineering with a concentration in cyber security. Both follow the same program structure, which requires a total of 140 credit hours for graduation (study plan in Appendix B).

The Computer Engineering with Cyber Security concentration requires a total of 140 credit hours for graduation same as computer engineering general see figure 1. Five courses (not core courses) were replaced with sixteen credit hours of specialized cyber security courses (Courses Syllabi Appendix A) table I, and II show the cyber security and replaced courses respectively. It requires 41 courses, with credit hours distributed as follows:

1. General Education (Humanities & Social Science)	18 Credit Hours
2. Mathematics and Statistics	21 Credit Hours
3. Basic Science (Physics & Chemistry)	11 Credit Hours
4. Computer Engineering Courses	33 Credit Hours
5. Electrical Engineering Courses	26 Credit Hours
6. Cyber Security Courses	16 Credit Hours
7. Internship	03 Credit Hours

8. Specialization Requirements	07 Credit Hours
9. Graduation Projects	05 Credit Hours

**Total: 140 Credit Hours**

A summary of the body of knowledge including Mathematics and Science courses, basic science courses, computer science courses, electrical engineering courses are shown in Tables XI, XII, XIII and XIV respectively.

### Course Code identification System

The course code Identification system used in the presented study plan is explained below. The course code for courses offered is a six-digit code (xxx xxx). Starting from left, the first three digits indicate the course type of study in the program as follows:

- 1. General Education (Humanities & Social Science):**  
3 letters from the course name-Course Level - Course Number
- 2. Mathematics and Statistics:**  
MTH-Course Level - Course Number
- 3. Basic Science (Physics & Chemistry):**  
3 letters from the course name-Course Level - Course Number
- 4. Computer Engineering Courses:**  
CPE-Course Level - Course Number
- 5. Communication Engineering Courses:**  
CME-Course Level - Course Number
- 6. Electrical Engineering Courses:**  
ELE-Course Level - Course Number
- 7. Specialization Requirements Courses:**  
3 letters from the course name-Course Level - Course Number

**Table X General Education Courses**

SN	Course ID	Course Title	Credit Hour	Prerequisite
1.	GED101	Computer Applications	3	None
2.	GED108	Introduction to Arts	3	None
3.	GED104	Islamic Culture	3	None
4.	GED105	Environmental Studies	3	None
5.	GED107	UAE Society and Culture	3	None
6.	GED102	English Writing Skills	3	None
7.	GED 110	Innovation and Entrepreneurship	3	45 Credit Hours

Students will take six of the above general education courses, where GED101, GED110 and GED102 are compulsory

**Table XI Mathematics and Statistics**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	MTH101	Calculus I	4	None
2.	MTH102	Calculus II	4	MTH101
3.	MTH103	Discrete Math	3	None
4.	MTH201	Differential Equations	4	MATH102
5.	MTH202	Linear Algebra	3	MTH201
6.	MTH301	Probability & Statistics	3	MTH103
<b>Total</b>			<b>21 Cr. Hrs</b>	

**Table XII Basic Science**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	PHY101	Physics I	4	None
2.	PHY102	Physics II	4	None
3.	CHM101	Chemistry for Engineering	3	None
<b>Total</b>			<b>11 Cr. Hrs</b>	

**Table XIII Computer Engineering Core Courses**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	CPE201	Computer Programming Fundamentals	4	MTH103
2.	CPE202	Fundamentals of Networking	4	CPE201,ELE202
3.	CPE203	Data Structure	3	CPE 201
4.	CPE301	Network Communications and Security	4	CPE202
5.	CPE302	Operating System	3	CPE203
6.	CPE303	Computer Architecture and Organization	3	ELE202
7.	CPE402	Embedded Systems	4	ELE303



8.	CPE404	Computer Hardware Design	4	CPE303
9.	CPE405	I/O Interfacing	4	ELE304
<b>33 Cr. Hrs</b>				

**Table XIV Electrical Engineering Core Courses**

SN	Course ID	Course Title	Credit Hours	CO/Prerequisite(s)
1.	ELE201	Circuit I	4	MTH102
2.	ELE202	Digital Logic	4	ENG101,MTH103
3.	ELE203	Engineering Programming and analysis	4	CPE201
4.	ELE301	Electronic Circuits	4	ELE201
5.	ELE302	Signal and Systems	3	ELE201,ELE203
6.	ELE303	Introduction to Microprocessors	4	ELE202
7.	ELE304	Digital Signal Processing	3	ELE302,MTH301*
<b>26 Cr. Hrs</b>				

\*co-requisite

**Table XV Cyber Security Courses**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1.	CSE406	Cryptography	4	CPE203, MTH103
2.	CSE407	Wireless and Mobile Networks	3	CPE301,ELE304, MTH301
3.	CSE408	Digital Forensics	3	CPE301
4.	CSE409	Ethical Hacking	3	CSE406, CPE407
5.	CSE410	Special Topics in Cyber Security	3	Advisor's Approval
<b>16 Cr. Hrs</b>				

**Table XVI Specialization Requirement Courses**

SN	Course ID	Course Title	Credit Hours	Prerequisite(s)
1	ENG101	Introduction to Engineering	2	None

<b>2.</b>	ECN201	Engineering Economy	2	None
<b>3</b>	RESM 202	Research methodology	3	Advisor's Approval
			<b>7 Cr. Hrs</b>	

## Detailed Structure of the Computer Engineering Study Plan

The abbreviations Lec., Lab., and Tut. used in the following tables indicate Lecture, Laboratory, and Tutorial, respectively. Two hours of laboratory work account for 1 credit hour. In accordance with (ACM/IEEE) Engineering curricula, the contact hours for tutorials (Recitation) do no account for any credit hours.

### FIRST YEAR

#### Fall Semester:

Course Code	Course Title	Credit Hrs.	Lec. Hrs.	Lab. Hrs.	Tut. Hrs.	CO/Pre-requisite
CHM101	Chemistry for Engineering	3	3	--	--	None
MTH101	Calculus I	4	4	--	1	None
PHY101	Physics I	4	3	2	--	MTH101*
CPE101	Computer Applications	3	2	2	--	None
GED102	English Writing Skills	3	3	--	--	None
		<b>17</b>	14	4	1	

#### Spring Semester:

Course Code	Course Title	Credit Hrs.	Lec. Hrs.	Lab. Hrs.	Tut. Hrs.	CO/Pre-requisite
MTH103	Discrete Math	3	3	--	1	None
MTH102	Calculus II	4	4	--	1	MTH101
PHY102	Physics II	4	3	2	--	PHY101, MTH102*
ENG101	Introduction to Engineering	2	2	--	--	None
xxx-xxx	General Education Course	3	3	--	--	None
		<b>16</b>	14	2	2	

## SECOND YEAR

### Fall Semester:

Course Code	Course Title	Credit Hrs.	Lec. Hrs.	Lab. Hrs.	Tut. Hrs.	CO/Pre-requisite
MTH201	Differential Equations	4	4	--	1	MTH102
ELE201	Circuit I	4	3	2	1	MTH102
CPE201	Computer Programming Fundamentals	4	3	2	--	MTH103
ELE202	Digital Logic Circuits	4	3	2	--	ENG101 MTH103
ECN201	Engineering Economy	2	2	--	--	None
		<b>18</b>	15	6	2	

### Spring Semester:

Course Code	Course Title	Credit Hrs.	Lec. Hrs.	Lab. Hrs.	Tut. Hrs.	CO/Pre-requisite
MTH202	Linear Algebra	3	3	--	1	MTH201
ELE203	Engineering Programming and analysis	4	3	2	--	CPE201
CPE202	Fundamentals of Networking	4	3	2	--	CPE201, ELE202
CPE203	Data Structure	3	3	--	--	CPE201
xxx-xxx	General Education Course	3	3	--	--	None
		<b>17</b>	15	4	1	

### THIRD YEAR

**Fall Semester:**

Course Code	Course Title	Credit Hrs.	Lec. Hrs.	Lab. Hrs.	Tut. Hrs.	Prerequisite
ELE301	Electronic Circuits	4	3	2	1	ELE201
ELE302	Signal and Systems	3	3	--	1	ELE202, ELE203
CPE301	Network Communications and Security	4	3	2	--	CPE202
ELE303	Introduction to Microprocessors	4	3	2	--	ELE202
xxx-xxx	General Education Course	3	3	--		None
		<b>18</b>	15	6	2	

**Spring Semester:**

Course Code	Course Title	Credit Hrs.	Lec. Hrs.	Lab. Hrs.	Tut. Hrs.	Prerequisite
MTH301	Probability and Statistics	3	3	--	1	MTH103
ELE304	Digital Signal Processing	3	3	--	1	ELE302, MTH301*
CPE302	Operating System	3	3	--	1	CPE203
CPE303	Computer Architecture and Organization	3	3	--	1	ELE202
GED 110	Innovation and Entrepreneurship	3	3	--	--	45 Credit Hours
RESM202	Research Methodology	3	3	--	--	Advisor's Approval
		<b>18</b>	15	--	4	

### FINAL YEAR

#### Fall Semester:

Course Code	Course Title	Credit Hrs.	Lec. Hrs.	Lab. Hrs.	Tut. Hrs.	Prerequisite
CPE401	Engineering Design Project I	2	1	2	--	Advisor's Approval
ELE402	Computer systems Instrumentation & Control	4	3	2	--	ELE304
ELE401	Digital Image Processing and Applications	3	3	--	1	ELE304
CPE402	Embedded Systems	4	3	2	--	ELE303
xxx-xxx	Technical Elective I	3	3	--	--	Advisor's Approval
		<b>16</b>	<b>11</b>	<b>8</b>	<b>1</b>	

#### Spring Semester:

Course Code	Course Title	Credit Hrs.	Lec. Hrs.	Lab. Hrs.	Tut. Hrs.	Prerequisite
CPE403	Engineering Design Project II	3	1	4	--	Advisor's Approval
CPE404	Computer Hardware Design	4	3	2	--	CPE303
CPE405	I/O Interfacing	4	3	2	--	ELE304
xxx-xxx	Technical Elective II	3	3	--	--	Advisor's Approval
xxx-xxx	Technical Elective III	3	3	--	--	Advisor's Approval
		<b>17</b>	<b>13</b>	<b>8</b>	<b>--</b>	

#### Summer Semester

Course Code	Course Title	Credit Hrs.	Prerequisite
CPE400	Internship (Training 8 weeks)	3	Advisor's Approval

## F. Admission Criteria

Admission Requirements and Conditions			
Name of School	<b>School of Engineering and Technology</b>		
Name of Department	<b>Department of Engineering</b>		
Title of Degree Program	<b>Bachelor of Science in Computer Engineering (English)</b> 1. General 2. Cyber Security		
Condition/ Requirement 1	Qualifying certificate for English Proficiency as per the following or another standardized, internationally recognized test that is approved by the Commission. <ul style="list-style-type: none"> <li>➤ TOEFL – Institutional Testing Program (ITP) with a minimum score of 550,</li> <li>➤ IELTS Test (Academic) with a minimum score of 5.5</li> <li>➤ EmSAT score of 1200</li> </ul>		
Condition/ Requirement 2	Secondary Education Qualification		
	Type of School	Secondary Education Average	Secondary Education Science and Mathematics
	General level of UAE public schools	90% or above	90% or above
	Advanced level of UAE public schools	70 % or above	Not Applicable
	Advanced level School under ADEC*	70 % or above	Qualified at Level 3 Advanced Maths and Physics
	*Abu Dhabi Education Council		

### Conditional Admissions

Candidates who do not fulfil the Admission Requirements and Conditions as stated, are admitted on the condition that they will fulfil the required admission requirements and conditions within the stipulated time period, failing which their admission will be cancelled and considered as null and void. Generally, the situations in which the conditional admission is provided are as follows:

- Deficiency in required documents.

- Deficiency in English Proficiency certification.

## G. Students and Learning Support Services

### 1. Library Resources and Services

Al-Dar University College library supports the educational mission of the College by providing essential educational support to the College community, through its collection of books, eBooks, databases and, multimedia and internet resources.

#### Library Resources

Resource Type
Books
Journals & Magazines
e-Databases & Association Memberships
CDs/DVDs
Number of Computers

#### Acquisition

The library acquires print materials (books, periodicals, pamphlets, maps, etc.), audiovisuals materials (microforms, audiocassettes, videocassettes, DVD, etc.) and electronic resources. The Library acknowledges the continuous change and evolving process of information technologies and is open to new formats that support the mission of the library / college.

#### Online Public Access Catalog

The library collections are managed through software called Resource mate. It manages the library acquisitions, cataloging, circulation and public access using the system. After library materials are electronically cataloged using the Online Public Access Catalog (OPAC) database, the bibliographic records are exported to website for use by the library users.

#### Library Services

The library provides the following services to its users:

- ☐ Online Public Access Catalogue (OPAC)
- ☐ Internet/CD ROM Search Assistance
- ☐ Online Resources Services
- ☐ Multi-Media Room Facility



- ☐ News clipping Service
- ☐ Reference/Referral Service
- ☐ Current Awareness Service (CAS)
- ☐ Selective Dissemination of Information (SDI)
- ☐ Query Based Service (QBS)
- ☐ Table of Content
- ☐ APA formatting

### Online Library Services

The Library is equipped with computer terminals with internet access. Students can access online databases subscribed by the library.

### General Rules of Library

- ☐ Be courteous to others by maintaining low voices.
- ☐ Please take care of the materials borrowed.
- ☐ Mobile phones, eatables, and drinks are strictly not allowed inside the library premises.

### Circulation Policy

The LRC computerized library system allows students to reserve and to borrow learning resources. Each student must present his/her valid staff/student card when borrowing or returning items.

Students can borrow up to two books for a period of two weeks that may be extended for another week.

### Clearance Certificate/No Dues Certificate

All those who leave the college must return, replace, or pay for all outstanding print and non-print materials that they have not returned to the Library. The Library will issue the clearance certificate to any student only after he/she returns the borrowed materials from the Library.

## 2. Scholarship

ALDAR University College offers a wide array of scholarship schemes to financially support students in their education. The Scholarship Program consists of the following:

- High School Merit Scholarship

- International Students
- Academic Distinction Scholarship
- Sibling
- Governmental Employee
- School Agreements
- Financial Aid

### General Eligibility Criteria

In order to be eligible for the Scholarship Program, students should:

- Meet Aldar Undergraduate Admissions Criteria.
- Study as a full time basis as per the selected Program Study Plan.

### General Rules and Regulations

- Scholarships are awarded to full-time students.
- Scholarships are only valid for tuition fees.
- All remaining fees must be paid promptly in order to receive and maintain your scholarship.
- Scholarships are open to all the students of any nationality who have met all the admission requirements.
- You can apply for more than one scholarship, provided you meet the eligibility requirements.
- Maximum scholarship can be awarded up to 50%.

### High School Merit Scholarship

High school students with outstanding high school average percentage are eligible for the scholarship as per the below brackets:

High School Average	Coverage
Greater than or Equal to 98%	75%
Between 95% and 97.99%	40%
Between 90% and 94.99%	20%
Between 85% and 89.99%	15%
Between 80% and 84.99%	10%

### Academic Distinction Scholarship

Outstanding students enrolled at ALDAR University College in various academic programs can apply for scholarships according to the following:

- Full time student with minimum credit hours of 15 hours.
- Granting this scholarship is subject to the decision of the college council after the recommendation of the concerned academic department.

#### **Sibling**

Students who have sibling and/or spouse enrolled at ALDAR University College are eligible for 15% waiver of tuition fees.

#### **Governmental Employee**

Students employed by local/federal government entities are entitled to a 25% waiver of their tuition fees.

#### **School Agreements**

High school students with outstanding high school average percentages are eligible for scholarship as per school agreements. Students, in this category, are expected to maintain a CGPA as mentioned in the school agreements by the end of each semester.

### **3. Financial Aid**

ALDAR University College offers financial aid to students in financial need. The Financial Aid Program is awarded to eligible students who demonstrate a financial need through relevant supporting documents.

Application forms may be obtained from the Office of Student Services. Selection is made based on need and academic performance. After approval, the College Council will send the list of eligible students to Office of Admission and Registration.

#### **General Eligibility Criteria**

- Student must have English proficiency
- Student must complete 15 credit hours in Al Dar University College.
- Financial Aid is awarded to full-time students.
- Financial Aid is only valid for tuition fees.
- CGPA must be 2.0 or higher for the financial aid to continue.

#### **Supporting Documents**

Students must submit the following documents:

- Completed and signed application form
- Current Rental contract
- Bank statements for the last three months
- Employee certificate and salary statement for each employed family member.

- Copy of Passport and Visa for all working family members
- Certificates of educational tuition fees for each sibling

After approval from the Management, a list of eligible students will be sent to Admission and Registration Office

#### 4. Student Services

The Office of Student Services manages all student activities and events organized throughout the Academic Year. The Office proposes a wide range of services with the aim to facilitate the integration of students into the College life through organizing extra-curricular activities, study and recreational trips, and sport events.

The Office of Student Services aims to create and maintain a community where each student is able to pursue, through Student Committees, various types and forms of activities in order to enrich their student life. ALDAR provides an encouraging environment to students to have opportunities to pursue activities within the Campus.

Students at ALDAR are encouraged to take an active role in various activities offered by the college. Any enrolled student is eligible to participate in events sponsored by the College.

The mission of the Office of Student Services is to assist students in areas of extracurricular activities and facilitates the integration of student into the College life by:

- organizing and supervising the Orientation Program;
- providing students with personal counselling or refer them to qualified personal councillors;
- organizing and supporting extra-curricular and recreational activities;
- sponsoring and organizing sports events;
- supporting the Alumni Committee;
- assisting students in all aspects of student life including housing, medical care, residency formalities, whenever possible

At the beginning of each semester, an Orientation Program is organized for all new students. The Orientation Program provides students a smooth and successful start at ALDAR. The Program objective is to familiarize students with the campus life, meet other new students, attend presentations conducted by various Schools and Offices, and interact with faculty and staff members.

The program consists of a series of presentations conducted by various schools and offices.

## 5. Learning Support Centers

### Professional Training and Continuing Engagement Department

ALDAR University College offers challenging and exciting educational programs to the local community. These programs are outside the framework of ALDAR University College 's regular academic programs and offer training and development in such areas as International Business Skills, IT skills, soft-skills workshops and foreign languages. Apart from above, this department also offers IELTS preparation as well.

### Study Rooms

There are four rooms available for students' study. The rules and regulations are as follows:

- ☐ The study rooms for students have to be reserved in advance. The group that wants to use the rooms for discussion should give their names and the time for use at least one day before the requirement.
- ☐ The rooms are for studies and group discussions purpose only.

## 6. Personal Counseling

Personal Counselor offers confidential and culturally appropriate solutions for students, which help them in solving both personal and academic challenges. This counseling can help in boosting the self-awareness, confidence, self-management, interpersonal and life skills. Students can contact the Office of Student Services for taking appointments with the personal counselor.

## 7. Academic Advising

Academic Advising complements academic instruction and is thus a central to the educational mission of the College. ALDAR recognizes this responsibility by allocating time for indirect instructional activity, which includes student advising, as part of the total faculty instructional workload.

Academic advising is designed to provide necessary tools and information to all students, allowing them to take responsibility for developing educational plans compatible with their goals; meeting institutional and degree requirements; and preparing for a life of change, challenge and individual fulfilment as active citizens.

The primary purposes of academic advising are to help students to select appropriate academic courses and programs, to establish effective mentor relationships, to use support services effectively, and for future planning.

Academic Advising purpose is to:

- Assist newly enrolled students in the selection of the appropriate academic program/ courses/concentrations
- Provide students information and guidance about academic standards, rules and regulations of the College
- Monitor students' academic standing to ensure improvement in their performance
- Address specific course/program related issues
- Assist students in exploring and understanding the possible short- and long-range implications and consequences of their choices

### **Advising procedure**

All students at ALDAR are assigned an Academic Advisor. Advisors maintain regular and reasonable office hours during which they will be available to students seeking academic support.

The advising process depends on the thoughtful participation of the students. Students must:

- meet at least once each semester with their academic advisers, beginning with the first semester
- ensure completing all degree requirements and accept ultimate responsibility for their selection of classes

## **8. Career Services**

The Career Services Coordinator at the College is responsible for providing students with an effective career development program, which includes career information and planning, placement services, and career counseling.

### **Career Counseling**

The Career Services Coordinator provides students and alumni with career counseling to help them in their employment and career plans by:

- providing assistance in writing resume and cover letter, which takes place during the Fall semester by conducting resume writing workshops
- encouraging the students to take personality tests in order to make themselves more aware about their personality traits
- conducting interviews and providing helpful tips via different workshops to make the students understand different ways of handling an interview
- educating the students about different job searching techniques

### **Career Placement Services**

The Career Services Coordinator will provide students with guidance and support as they develop and pursue their career plans. The role of the Career Services Coordinator is to:

- assist students with their internship requirements by providing internship opportunities
- manage all contractual and educational processes related to internships
- assist students and Alumni in their employment search
- organize career development workshops to assist students in their internship/employment strategies
- update students with the current job vacancies and opportunities, market demand, and annual career fairs

A wide range of career development workshops and services are conducted throughout the academic year including:

- workshops on resume preparation
- workshop on interview techniques and skills
- seminars on career development
- internship postings
- annual Career Fairs
- access to internship and employment databases

## **9. Computer Laboratories**

Computer labs and computing facilities are available to all students. The primary purpose of the computing and network resources at the College is to assist students, faculty and administrative staff in their respective goals. Students are expected to make proper use of the facilities, act responsibly and avoid any use of the computing resources that could violate student's code of conduct.

Improper and illegal uses of these facilities include:

- ❑ unauthorized downloading of proprietary software;
- ❑ transmission through the College computing and network system of illegal material containing pornographic, harassing, violence contents;
- ❑ copying of copyright material without the owner’s authorization;
- ❑ using the computer laboratories for personal and/or non-academic purposes;
- ❑ improper behavior putting at risk of disruption the computing and network facilities of the College;

### Laboratory Regulations

- Food and drink shall not be brought into, stored in or consumed in a laboratory.
- Smoking is prohibited in laboratories.
- You must work quietly in laboratory.
- Be tidy and keep the laboratory clean.
- Unauthorized person(s) is not allowed in a laboratory.
- Laboratory session must be attended on time, and students coming late will not be allowed to enter the laboratory.
- Before leaving, users should arrange all equipment on their tables.
- Report all problems to the laboratory supervisor.

### Safety and Security of the Computer Labs

- ❑ The IT Department is responsible for the installation of anti-virus shield software on all computers at the Institute. This software must be of the type that updates itself through the vendor web site online on a daily basis.
- ❑ The IT Department must carry out regular virus scans on the hard disk(s) of all computers in ALDAR University College (monthly).
- ❑ The IT Department must set up all computers to have a password on the CMOS setup in order to prevent students from changing the system configuration.

## 10. Recreational Facilities

ALDAR University College provides dedicated recreational area for students so that they can get together to play games and socialize. The Office of Student Services manages the following facilities.

### Fitness Center



The fitness center is free of charge for the enrolled students. Students can have their own lockers and the Office of Student Services manages the log.

**Fitness Center Timings:** opened from Saturday till Sunday

### Activities Room

The activities room is equipped with a table tennis table, foosball table and carom.

**Activities Room Timings:** Saturday – Thursday, 9 AM – 9 PM.

### Activity area

Student can make use the area in front of the Office of Student Services located at the ground floor for the extracurricular activities like cultural day, in house programs and club meetings.

## 11. Residence Halls

ALDAR University College facilitates the students coming from abroad in finding hotels or apartments for the duration of two or three weeks.

## 12. Dining Services

ALDAR University College has a cafeteria on campus for students where food and beverages are served at reasonable prices.

## 13. Health Services

The clinic is available for all faculty, staff, and students. Services include treatment for minor health emergencies and conditions, dispensing medication for minor health problems, providing individuals with medical referrals, and offering information on health-related issues.

The clinic is open from Sunday to Thursday and on Saturday. Throughout the semester, the clinic conducts a number of educational sessions focused on health awareness.

## 14. Other Services

### Prayer Rooms

ALDAR University College has two prayer rooms. The Prayer rooms for Male and Female are located in the Third Level.

### **Lost and Found**

The Lost and Found is located at the Office of Student Services. Lost and found items are held for a period of three months. After the holding period expires, unclaimed items will be disposed as follows:

- ❑ Cash will be deposited into charity accounts
- ❑ Student ID cards, passports and official documents will be turned over to the Office of Admission & Registration
- ❑ Other items such as personal accessories, valuables, clothes, bags, and books will be donated to charity organizations
- ❑ Other items that cannot be donated will be discarded

### **Bookstore**

The Library Bookstore is located in the Fourth floor of the Building. The bookstore sells all required core texts recommended by Faculty members.

### **Photocopy Facilities**

A photocopier and a LaserJet printer are available for student use in the Library. Copyright laws must be respected and adhered to, all the time.

### **Transportation Services**

Transportation services are provided to the students living in Dubai, Sharjah, or Ajman. Students will be picked up and dropped off at designated areas. Students should contact the Office of Student Services at the beginning of each semester.

### **Parking Services**

Ample Parking lots are provided for faculty, staff, students and visitors with three dedicated basement floors.

### **ID Cards**

When a student first registers at the college, the Office of Admission & Registration issues a Student ID card. The card has the student's name, ID, photo, major, and the validation date. Students must carry their IDs with them at all times and have them available upon request.

### **Email ID**

ALDAR University College provides students with a communication channel using Electronic Intelligence Academic Solution (EIAS) Student Portal. Students can exchange emails with their respective faculty members and the Office of Admission & Registration. Students are held responsible by ALDAR University College for information sent via their email accounts.

## H. Program Effectiveness Matrices

### 1. Schedule of Delivery

#### BSC CPE Course Sequence

#### BSC Computer Engineering Study Plan

GE: General Education CEC: Computer Science Course ELE: Electrical Engineering Course MTH: Mathematics  
SR: Specialization Requirement B.SCI: Basic Science The \* signifies co-requisite Crs.: Credits

Semester	Code	Course Title	Type	CO/Pre-Requisite	Crs.
1	CHM 101	Chemistry for Engineering	B.SCI	None	3
	MTH 101	Calculus I	MTH	None	4
	PHY 101	Physics I	B.SCI	MTH101*	4
	GED 101	Computer Applications	GE	None	3
	GED 102	English Writing Skills	GE	None	3
					<b>17</b>
2	MTH 103	Discrete Math	MTH	None	3
	MTH 102	Calculus II	MTH	MTH101	4
	PHY 102	Physics II	B.SCI	PHY101, MTH102*	4
	ENG 101	Introduction to Engineering	SR	None	2
	-	General Education Course	GE	None	3
					<b>16</b>
3	MTH 201	Differential Equations	MTH	MTH102	4
	ELE 201	Circuit I	ELE	MTH102	4
	CPE 201	Computer Programming Fundamentals	CEC	MTH103	4
	ELE 202	Digital Logic Circuits	ELE	ENG101, MTH103	4
	ECN 201	Engineering Economy	SR	None	2
					<b>18</b>
4	MTH 202	Linear Algebra	MATH	MTH201	3
	ELE 203	Engineering Programming and analysis	ELE	CPE201	4
	CPE 202	Fundamentals of Networking	CEC	CPE201, ELE202	4
	CPE 203	Data Structure	CEC	CPE 201	3
	-	General Education Course	GE	None	3
					<b>17</b>
5	ELE 301	Electronic Circuits	ELE	ELE201	4
	ELE 302	Signal and Systems	ELE	ELE201, ELE203	3
	CPE 301	Network Communications and Security	CEC	CPE202	4
	ELE 303	Introduction to Microprocessors	ELE	ELE202	4
	-	General Education Course	GE	None	3
					<b>18</b>
6	MTH 301	Probability and Statistics	MTH	MTH103	3
	ELE 304	Digital Signal Processing	ELE	ELE302, MTH301*	3
	CPE 302	Operating System	CEC	CPE203, CPE303*	3
	CPE 303	Computer Architecture and Organization	CEC	ELE202	3

	RESM 202	Research Methodology	SR	Advisor's Approval	3
	GED 110	Innovation and Entrepreneurship	GE	45 Credit Hours	3
					<b>18</b>
<b>7</b>	CPE 401	Engineering Design Project I	CPE/ELE	Advisor's Approval	2
	ELE 402	Computer systems Instrumentation & Control	ELE	ELE304	4
	ELE 401	Digital Image Processing and Applications	ELE	ELE304	3
	CPE 402	Embedded Systems	CEC	ELE303	4
	-	Technical Elective I	CPE/ELE	Advisor's Approval	3
					<b>16</b>
<b>8</b>	CPE 403	Engineering Design Project II	CPE/ELE	Advisor's Approval	3
	CPE 404	Computer Hardware Design	CEC	CPE303	4
	CPE 405	I/O Interfacing	CEC	ELE304	4
	-	Technical Elective II	CPE/ELE	Advisor's Approval	3
	-	Technical Elective III	CPE/ELE	Advisor's Approval	3
					<b>17</b>
<b>Summer</b>	<b>CPE 400</b>	<b>Internship (Training 6 weeks)</b>			<b>3</b>
<b>Grand Total</b>					<b>140</b>

### Cyber Security Concentration Study Plan

Semester	Code	Course Title	Type	CO/Pre-Requisite	Crs.
<b>1</b>	CHM101	Chemistry for Engineering	B.SCI	None	3
	MTH101	Calculus I	MTH	None	4
	PHY101	Physics I	B.SCI	MTH101*	4
	GED101	Computer Applications	GE	None	3
	GED102	English Writing Skills	GE	None	3
					<b>17</b>
<b>2</b>	MTH103	Discrete Math	MTH	None	3
	MTH102	Calculus II	MTH	MTH101	4
	PHY102	Physics II	B.SCI	PHY101, MTH102*	4
	ENG101	Introduction to Engineering	SR	None	2
	xxx-xxx	General Study Course	GE	None	3
					<b>16</b>
<b>3</b>	MTH201	Differential Equations	MTH	MTH102	4
	ELE201	Circuit I	ELE	MTH102	4
	CPE201	Computer Programming Fundamentals	CEC	MTH103	4
	ELE202	Digital Logic Circuits	ELE	ENG101, MTH103	4
	ECN201	Engineering Economy	SR	None	2

					<b>18</b>
<b>4</b>	MTH202	Linear Algebra	MATH	MTH201	3
	ELE203	Engineering Programming and analysis	ELE	CPE201	4
	CPE202	Fundamentals of Networking	CEC	CPE201,ELE202	4
	CPE203	Data Structure	CEC	CPE201	3
	xxx-xxx	General Study Course	GE	None	3
					<b>17</b>
<b>5</b>	ELE301	Electronic Circuits	ELE	ELE201	4
	ELE302	Signal and Systems	ELE	ELE201,ELE203	3
	CPE301	Network Communications and Security	CEC	CPE202	4
	ELE303	Introduction to Microprocessors	ELE	ELE202	4
	xxx-xxx	General Study Course	GE	None	3
					<b>18</b>
<b>6</b>	MTH301	Probability and Statistics	MTH	MTH103	3
	ELE304	Digital Signal Processing	ELE	ELE302,MTH301*	3
	CPE302	Operating System	CEC	CPE203,CPE303*	3
	CPE303	Computer Architecture and Organization	CEC	ELE202	3
	RESM202	Research Methodology	SR	Advisor's Approval	3
	GED 110	Innovation and Entrepreneurship	GE	45 Credit Hours	3
					<b>18</b>
<b>7</b>	CPE401	Engineering Design Project I	CPE/ELE	Advisor's Approval	2
	CPE406	Cryptography	CEC	CPE203, MTH103	4
	CPE407	Digital Forensics	CEC	CPE301	3
	CPE402	Embedded Systems	CEC	ELE303	4
	CPE408	Wireless and Mobile Networks Security	CEC	CPE301,ELE304, MTH301	3
					<b>16</b>
<b>8</b>	CPE403	Engineering Design Project II	CPE/ELE	Advisor's Approval	3
	CPE404	Computer Hardware Design	CEC	CPE303	4
	CPE405	I/O Interfacing	CEC	ELE304	4
	CPE409	Ethical Hacking	CEC	CPE406, CPC407	3
	CPE410	Special Topics in Cyber Security	CEC	Advisor's Approval	3
					<b>17</b>

Summer	CPE400	Internship (Training 6 weeks)	3
Grand Total			140

GE: General Education CEC: Computer Science Course ELE: Electrical Engineering Course MTH: Mathematics SR: Specialization Requirement B.SCI: Basic Science The \* signifies co-requisite Crs.: Credits

## 2. Program Learning Outcomes Mapped to Descriptors of the QF Emirates for the Appropriate Program Level

Mapping the program learning outcomes to the program goals to assess the overall strength of the contribution a PLO makes to achieve each of the programs goals. The mapping and the assessment score are shown in Table VI below:

Table XII Mapping the Program Learning Outcomes to the Program Goals

Programs Outcomes		Programs Goals						
		PG1	PG2	PG3	PG4	PG5	PG6	PG7
NQF1	PLO 1	1	1	2	2	3	1	1
	PLO 2	2	1	2	3	2	2	1
	PLO 3	3	2	2	3	1	2	1
NQF2	PLO 4	1	3	2	2	3	1	1
	PLO 5	2	3	1	1	1	2	1
	PLO 6	2	2	3	2	1	2	1
NQF3	PLO 7	3	1	1	2	2	1	1
	PLO 8	3	2	1	2	3	1	1
	PLO 9	3	3	1	1	2	1	1
	PLO 10	3	3	2	2	2	1	1
NQF4	PLO 11	3	3	3	2	3	3	2
NQF5	PLO 12	1	1	1	1	1	2	3
	PLO 13	1	1	1	2	1	3	2
<b>Assessment Score</b>								
<b>3=Full Contribution</b>			<b>2=Moderate Contribution</b>			<b>1=Weak or No Contribution</b>		

## 3. Program Learning Outcomes Mapped to Course Learning Outcomes

Mapping the Courses to the Program Learning Outcomes (PLO) and National Qualifications Framework (NQF) Strands

Mapping the engineering courses to the program learning outcomes to assess the overall strength of the contribution a course makes to achieve each of the PLO. Successfully completing those courses will contribute to the recognition of the students achievement of the program learning outcomes as shown in Table VII.



Table XIII Mapping the Courses to Program Learning Outcomes and National Qualifications Framework Strands

Code	Course Title	CPE Program Learning Outcomes												
		NQF1			NQF2			NQF3				NQF4	NQF5	
		PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9	PLO 0	PLO1 1	PLO1 2	PLO1 3
CPE101	Computer Applications	3	2	2	1	2	1	1	1	1	1	1	1	1
MTH101	Calculus I	3	3	2	2	2	2	1	1	1	1	1	1	1
MTH102	Calculus II	3	3	2	2	2	2	1	1	1	1	1	1	1
MTH103	Discrete Structure	3	3	2	2	2	1	1	1	1	1	1	1	1
MTH201	Differential Equations	3	3	2	2	2	1	1	1	1	1	1	1	1
MTH202	Linear Algebra	3	3	2	2	2	1	1	1	1	1	1	1	1
MTH301	Probability and Statistics	3	3	2	2	2	1	1	1	1	1	1	1	1
PHY101	Physics I	3	3	2	2	2	1	1	1	1	1	1	1	1
PHY102	Physics II	3	3	2	2	2	1	1	1	1	1	1	1	1
CHM101	Chemistry for Engineering	3	3	2	2	2	1	1	1	1	1	1	1	1
CPE102	Introduction to Computer Science	3	3	1	2	2	1	1	1	1	1	1	1	1
CPE202	Fundamentals of Networking	3	2	2	1	1	1	1	3	2	2	2	1	1
CPE203	Computer Programming Fundamentals	2	1	3	1	3	1	3	3	2	2	2	1	1
CPE204	Agile Software Engineering	3	3	1	3	1	2	3	2	2	3	1	1	2
CPE205	Computer Architecture and Organization	1	1	3	1	1	1	1	3	3	3	2	3	1
CPE206	Operating System	1	1	3	1	1	1	1	3	3	3	2	3	1
CPE207	Fundamentals of Information Management	3	1	3	3	1	1	3	3	3	1	1	3	1
CPE301	Network Communications and Security	3	3	3	3	1	1	3	3	3	3	1	2	2
CPE302	Database Programming	3	1	3	3	1	1	3	3	3	1	1	3	1
CPE401	Graduation Project I	3	3	3	3	3	3	3	3	3	3	3	3	3
CPE402	Graduation Project II	3	3	3	3	3	3	3	3	3	3	3	3	3
CPE403	Internship	3	3	3	3	3	3	3	3	3	3	3	3	3
CPE404	Web Development	3	3	3	3	1	1	3	3	3	1	2	2	2
CPE405	Mobile Computing	3	3	3	3	1	1	1	3	3	3	2	2	1
CPE406	Cloud Computing	3	3	3	3	1	1	1	3	3	3	2	2	1
CPE407	IT and Society	1	1	3	1	3	3	1	3	1	1	3	3	1
CPE409	Intelligent Systems	3	3	3	3	1	1	3	3	3	3	1	3	1
CPE410	Digital Media	3	3	3	3	2	1	3	3	3	1	2	2	2
CPE411	Human Computer Interaction	1	1	3	3	3	1	3	3	3	1	1	3	1
ELE201	Circuit and Systems I	3	3	3	3	2	1	2	3	3	3	2	2	1
ELE202	Digital Logic	3	3	3	3	1	1	2	3	3	3	2	2	1
ELE301	Electronics I	3	3	3	3	2	1	2	3	3	3	1	3	1
ELE302	Engineering Programming and analysis	3	3	3	3	2	2	1	3	3	3	2	2	1
ELE303	Signal and Systems	3	3	3	3	1	3	1	3	3	3	2	3	1
ELE304	Circuit and Systems II	3	3	3	3	2	1	2	3	3	3	2	2	1
ELE305	Digital Signal	3	3	3	3	1	2	3	3	3	3	3	1	1

	Processing													
ELE306	Microprocessors and Microcontrollers	3	3	3	3	1	1	3	3	3	3	3	2	1
ELE307	Electronics II	3	3	3	3	2	1	2	3	3	3	1	3	1
ELE401	Digital Image Processing and Applications	3	3	3	3	3	3	3	3	3	3	2	3	1
ELE403	Computer systems Instrumentation and Control	3	3	3	3	2	3	1	3	3	3	3	1	1
ELE404	Robotics and Simulation	3	3	3	3	2	1	3	3	3	3	2	2	1
ELE405	VLSI Design and Fabrication	3	3	3	3	2	3	2	3	3	3	3	1	1
ELE406	Fuzzy Logic & Neural Networks	3	3	3	3	3	3	3	3	3	3	2	2	1
ENG101	Introduction to Engineering	3	3	1	2	2	1	1	1	1	1	1	1	1
ECN201	Engineering Economy	2	2	2	1	1	1	1	1	1	1	3	3	3
AGL401	Agile Project Management	2	2	2	1	1	1	1	1	1	1	3	3	3
CME301	Communication Principles	3	3	3	3	1	2	3	3	3	3	3	1	1
CME401	Digital Communications	3	3	3	3	1	2	3	3	3	3	3	1	1
CME402	Electromagnetic Fields and Wave Propagation	3	3	3	3	2	1	2	3	3	3	1	3	1
CME403	Graduation Project I	3	3	3	3	3	3	3	3	3	3	3	3	3
CME404	Microwave Engineering	3	3	3	3	2	1	2	3	3	3	1	3	1
CME405	Wireless Communications	3	3	3	3	2	1	2	3	3	3	1	3	1
CME406	Graduation Project II	3	3	3	3	3	3	3	3	3	3	3	3	3
CME407	Internship	3	3	3	3	3	3	3	3	3	3	3	3	3
CME408	Telecommunication Systems	3	3	3	3	2	1	2	3	3	3	1	3	1
CME409	Communication Electronics	3	3	3	3	2	1	2	3	3	3	1	3	1
CME410	Radar Systems	3	3	3	3	2	1	2	3	3	3	1	3	1
CME411	Selected Topics In communication	3	3	3	3	2	1	2	3	3	3	1	3	1

#### 4. Teaching and Learning Methods

The Teaching and Learning Methods (TLM), at ADUC, are employed as per the requirement of the course. Some of the commonly used methodologies are mentioned here, however each course syllabus mention specific details of the TLM implemented in the specific course. Some of the TLMs are mentioned as follows:

- a. Lecture Sessions: (Presentations by faculty, Explanations, Class Discussions, Debate Sessions etc)
- b. Student Presentations:

- c. Group Discussions:
- d. Physical Lab Sessions:
- e. Virtual Lab Sessions:
- f. Library Sessions: (Assigning students activities that require library usage)
- g. Case Study Discussions:
- h. Simulation Exercises:

The Faculty Teaching Peer Review (FTPR) System ensures that the faculty members are monitored and evaluated for their teaching performance and formal feedback is provided to them.

## **5. Assessment Methods**

- a. Quizzes
- b. Projects
- c. In-Class Case Studies
- d. Take-Home Case Studies
- e. Individual Presentations
- f. Group Presentations
- g. Written Assignments
- h. Individual Assignments
- i. Group Assignments
- j. Class Contributions
- k. Lab activities
- l. Midterm Exams
- m. Final Projects
- n. Internships
- o. Final Exams



## I. Academic Regulations

### 1. Program Grading System

Students are awarded letter grades for each course in which they have enrolled. The letter grade reflects student performance in a particular course. The minimum passing grade in an undergraduate course is D. ADUC follows the following Grading qualifications and assigns a specific letter to reflect on the student's transcript.

<b>A</b>	Demonstrates a high level of performance and outstanding mastery of the domain area
<b>B+</b>	Demonstrates excellent mastery of subject matter and overall commendable performance and achievement
<b>B</b>	Very good mastery of subject matter and excellent knowledge and understanding
<b>C+</b>	Good mastery of subject matter and fairly good knowledge and understanding
<b>C</b>	Average performance and achievement
<b>D+</b>	Inadequate level of achievement overall. Average to a poor level of knowledge and understanding of the subject matter
<b>D</b>	Limited knowledge and understanding of the subject matter
<b>F</b>	Spare knowledge and understanding of the subject matter and standard of performance well below the level required for a Bachelor Degree Program
<b>XF</b>	Failure due to Academic Integrity Violation
<b>I</b>	Incomplete Grade. Must be completed within One (1) Semester; otherwise, it will be replaced by an F Grade.
<b>R</b>	Repeat Course
<b>W</b>	Withdrawal
<b>FA</b>	Failure due to absence

The Grading qualifications are quantified based on the following Grading System as per the student's score in a course.

Grade	Points	Marks	Description
<b>A</b>	4.0	90 – 100	Outstanding
<b>B+</b>	3.5	85 – 89	Excellent
<b>B</b>	3.0	80 – 84	Very Good
<b>C+</b>	2.5	75 – 79	Good
<b>C</b>	2.0	70 – 74	Average
<b>D+</b>	1.5	65 – 69	Poor
<b>D</b>	1.0	60 – 64	Very Poor
<b>F</b>	0	< 60	Fail

<b>XF</b>	0	-	Failure due to Academic Integrity Violation
<b>I</b>	-	-	Incomplete
<b>R</b>	-	-	Repeat
<b>W</b>	-	-	Withdrawal
<b>FA</b>			Failure due to absence

### Credit Hours

Courses are calculated in credit-hours. Each course carries a certain number of credits which are awarded after its successful completion. Credit hours usually equal the number of contact hours spent during the semester. Two or three hours of tutorial or laboratory work per week is the equivalent of one credit hour.

### Grade Point Average (GPA) Calculation

The student's Grade Point Average (GPA) is the sum of products of grade points and credit hours of each course and then dividing the result by the total number of credit hours of the semester.

$$GPA = \frac{\sum_{per\ course}(Grade\ Point \times Credit\ Hours)}{Total\ Number\ of\ Registered\ Credit\ Hours\ in\ Current\ Semester}$$

Courses with letter grades of TC (Transferred Credit) and I (Incomplete) are excluded from the GPA calculation.

### The Cumulative Grade Point (CGPA) Calculation

The Student's Cumulative Grade Point Average (CGPA) is the sum of products of grade points and credit hours of each course registered in current and previous semesters and then dividing the results by the total number of credit hours.

$$CGPA = \frac{\sum_{per\ course}(Grade\ Point \times Credit\ Hours)}{Total\ Number\ of\ Registered\ Credit\ Hours\ in\ all\ Semesters}$$

The numerical performance (CGPA) needs to be also translated qualitatively in terms of students' performance. The grade descriptors will help define the students' overall level of skills and provide more comprehensive information to both academic and corporate.

CGPA	Description
3.60 – 4.00	Excellent
3.00 – 3.59	Very Good
2.50 – 2.99	Good
2.00 – 2.49	Satisfactory
Less than 2.00	Unsatisfactory

### Incomplete (Grade I)

Grade I is allocated to students who fail to complete the final assessment of a course, namely, final examination or final research-based assessment. Unless an official excuse submitted by the student and accepted by the concerned faculty member, the final assessment must be completed and marked during or before the period of add/drop of the following semester as mentioned in the academic calendar; otherwise, a grade F (Fail) will be awarded for the relevant course.

Grade I will be extended for one semester for an internship or any course assessed by a graduation project, only if an official excuse is submitted by the student and accepted by the concerned faculty member during the last week of the relevant semester or before the final examination period.

Students must provide a legitimate reason for absence from the exam within three working days and pay the Makeup exam fee of the course tuition fees upon the dean's approval.

### XF Grade

The following actions shall be taken against the student proven to have committed an act of plagiarism:

1. A student committing a first plagiarism/cheating offense in any course, a zero grade is given to the submitted work.
2. A student committing a second plagiarism/cheating offense in any course will be awarded a failing grade on that course. The plagiarism offence shall be noted in the student's record of grades and marked as "XF".
3. A student committing a third plagiarism/cheating offense in any course will be awarded a failing grade on all courses of the semester in which the student commits the violation. The plagiarism

offence shall be noted in the student's grades record and be marked with the "XF" for all the courses taken in that semester.

4. A student committing a fourth plagiarism/cheating offense in any course will be expelled from ADUC and shall be awarded a failing grade on all courses of the semester which will be marked with a grade of "XF".
5. Upon a written request submitted by the student to the Office of Admissions and Registration, the XF mark may be removed if the student maintains his/her record clean up until his/her graduation.

ADUC may supplement its penalty with a decision to fully or partially ban the student from the privileges provided by ADUC for a maximum period of two semesters.

## Assessments

### *Types of Assessments*

The assessments are broadly categorized as:

1. Continuous Assessment conducted throughout the semester over regular intervals as per the schedule prescribed in the syllabus. These can be in the form of the following:
  - A. Quiz Exams
  - B. Mid Term Exams
  - C. Assignments (Home/Class/Lab)
  - D. Case Studies
2. Final Examination/Term-end examination conducted at the end of the semester as per the syllabus's schedule prescribed.
  - A. Final Examination
  - B. Final Project/Graduation Project along with Viva Voce examination
  - C. Dissertation/Thesis/Report along with Viva Voce examination

### *Quality of Assessments*

1. All the assessments must follow the quality check procedure as per the examination policy of ADUC.
2. The School Dean and Department Chair shall be responsible for the effective implementation of the quality check process.
3. The peer review shall be conducted as per the Assessment Peer Review form. (Appendix 17).
4. The Assessment Google form (question paper) shall be exchanged only between the instructor and peer reviewer through their official ADUC email ids.
5. The peer review form shall be administered by the Dean/Chair of the Department.

### *Assessment Procedures*

#### Step 1

The Dean/Chair to issue the list of reviewers as per the area of expertise.

The dates of peer review to be decided in the School Council



#### Step 2

The instructor shall submit the question paper along with the Assessment Answer key to the peer reviewer and notify the reviewer accordingly

The submission shall be made through Google Drive only.

#### Step 3

The peer reviewer shall submit the review on the standard peer review form and notify the instructor accordingly.

The instructor shall comply with the reviewer's comments.

#### Step 4

The instructor shall update the reviewer about the compliance of the reviewer.

The reviewer shall give the decision in terms of Approve or Not Approved.

#### Step 5

In case of any difference of opinion, the Dean/Chair shall be approached for resolution.

## 2. Academic Progress

### Good Academic Standing

In order to be considered in Good Academic Standing students must achieve a minimum CGPA of 2.00 at the end of each Semester.

## Academic Probation

Students with a CGPA of less than 2.00 by the end of the second academic semester will be placed on probation. The probation cannot exceed three consecutive semesters and the concerned students must revert to good Academic standing within the set period. Failure to achieve a CGPA of 2.00 will lead to Academic dismissal.

Students with a CGPA less than 2.00 cannot register in courses without their advisors' approval.

- A student whose CGP is less than 2.00 by the second semester of the academic year will receive a first academic warning. Students on first academic warning can only register in 4 courses.
- Student who fails to raise their CGPA to 2.00 after the first warning shall be given a second academic warning and placed on academic probation for the next semester. Students on academic probation can only register in 3 courses. All courses being repeated courses.

If a student fails to raise his/her CGPA to 2.00 at the end of the prescribed period of the probation, he/she will be dismissed form the program

days) and pay the make-up exam fees 50% of the course tuition fees upon dean's approval.

## Repeat Course

If a student has failed in a course, it is advisable to repeat it in the following semester. Students are at liberty to repeat the completed courses for the sake of improving their CGPA. They can repeat up to two times, but credit hours will be counted only once in the total credit hours required for graduation.

In all repeated course cases, the highest grade is considered for CGPA calculation.

## Attendance Policy

Students are expected to attend all classes and be punctual.

Throughout the Program, regular attendance and participation in classroom activities are compulsory. The Instructor will monitor attendance at the beginning of each session.

Students absent from class without prior approval of the Department Chair will be issued a first Warning after 10% of absenteeism and a second Warning at 20%.

Absenteeism of 25% in any course will result in failure due to absence (FA) and a grade of zero will be assigned.

A student with a legitimate and valid reason for missing a class can request his absence not to be counted. Such absence should be reported with supporting documents in the student file.

Students unable to attend classes for a certain period for medical or any other “force majeure” reasons have to produce proper supporting documents and submit a written leave of absence to the concerned Department Chair/Dean for approval.

### Dean’s List

At the end of each Academic Year, a Dean’s List of academically outstanding students is issued by the Registrar’s office. The Dean’s list consists of the top 10% of the best performing students.

To be on the Dean’s List, students have to be in good Academic standing with a CGPA of at least 3.7 with no I grade and no grade below C during the Semester. In addition, students with a minimum of 12 Credit hours are eligible to the Dean’s List. Dean’s list designation applies to only Fall and Spring Semesters academic records.

## 3. Opportunities for Appeal by Students

### Grade Appeal

A student has the right to appeal a course grade that he believes was not satisfactory. Disputes over final course grades may reflect disagreements that have arisen as the result of a late-semester project or the final exam. Students’ grade may only be changed by the instructor during the semester or by the recommendation of the Grade Appeal committee for the final exam grade.

Both students and faculty have rights and responsibilities in the grading process:

1. Faculty members have the responsibility to provide students with syllabi that clearly outlines the basis on which students will be assessed and graded
2. Faculty members have the responsibility to provide their students with timely feedback on their performance on quiz, case studies, projects, Mid-term and other assignments during the semester.
3. Students who wish to appeal are responsible for clearly demonstrating that the final grade they received is contrary to procedures as specified in the syllabus, or was biased or based on computational error.

Faculty members and students should communicate regularly and openly about all grading issues. A student who is dissatisfied with an instructor’s grading decision during a semester should discuss the issue with the instructor and attempt to resolve the matter informally. A student who believes that a grading issue has not been satisfactorily resolved should speak with the instructor’s department chair about the matter. The department chair should work with

both the student and the instructor to address the issue. The decision of the department chair regarding issues on coursework grades is final.

### Procedure

Students can only file for a course grade appeal at the end of the semester as per the following procedure:

- Course Grade appeal can be lodged within a maximum period of 3 days from the time of the official release of the grades;
- An official Grade appeal form with proper reasons and relevant documentations and justifications must be duly filled up and submitted to the Office of Admissions & Registration;
- The Department Chair will convene a Grade Appeal Committee Chaired by him\her and consisting of two faculty members to review the grade appeal;
- The Grade Appeal Committee will re-examine final exam papers and grade distribution assuming that the student has seen his\her total assessments before the final exam and will take a decision to maintain or modify the grade(s);
- The Grade Appeal Committee might request additional materials/documents from the instructor and/or student.
- All parties concerned, including the student and course instructor, will be notified of the final decision taken by the Grade Appeal Committee.
- The decision of the Grade Appeal Committee is final and the concerned students can no further dispute it;
- Minutes will be taken during the deliberations of the Grade Appeal Committee