



Program Specification

(Bachelor)

Program: **Information Technology and Computing (ITC)**

Program Code (as per Saudi university ranking): **061303**

Qualification Level: **Bachelor in Information Technology and Computing**

Department: **Information Technology and Computing**

College: **Faculty of Computer Studies (FCS)**

Institution: **Arab Open University (AOU)**

Program Specification: New updated*

Last Review Date: **September 2018**

*Attach the previous version of the Program Specification.



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A. Program Identification and General Information

1. Program's Main Location :

Arab Open University – Kingdom Saudi Arabia

2. Branches Offering the Program (if any):

- Branch 1. Riyadh
- Branch 2. Jeddah
- Branch 3. Dammam
- Branch 4. Almadina
- Branch 5. Ahsa
- Branch 6. Hail

3. Partnerships with other parties (if any) and the nature of each:

AOU maintains an academic partnership with the Open University (UK), which serves as the awarding and validating institution for AOU programs. The partnership ensures that the ITC program curriculum, assessment methods, and learning outcomes align with international academic standards. The OU-UK also provides external moderation and benchmarking to maintain quality assurance and academic integrity.

4. Professions/jobs for which students are qualified

- System modeling, analysis, development and integration, including hardware, software and web-based systems.
- Cloud Computing Engineer
- Computer Network Specialist
- Computer Support Specialist
- Database Administrator
- Mobile Technology
- Software Designer/Developer Storage Management
- Information Technology Analyst
- Information Technology Leadership
- Information Security Specialist Software/Application Developer
- Computer Systems Analyst
- Web Developer
- Software quality assurance manager
- Data analyst
- Computer Hardware Engineer
- Information Security Analyst
- Computer and Information Research Scientists/ Systems Managers
- Full-stack developer





- Security Analyst
- Security Engineer
- Security Architect
- Security Administrator
- Security Software Developer
- Cryptographer
- Network technical architects
- Network technicians
- Network principals
- Network administrators
- Cryptanalyst
- Network and Security Consultant
- Applications Developer
- Game Developer
- Multimedia Programmer
- Web Content Manager
- Web Application Developer
- Website Designer
- Database Designer
- Digital Marketing
- Graphics Designer
- Multimedia Production
- Programmer
- Software Developer
- Applications Programmer
- Systems Programmer
- Systems Analyst
- Computer Sales Support
- Database Administrator
- IT Technical Support Officer

5. Relevant occupational/ Professional sectors:

Graduates of the Information Technology and Computing (ITC) program are qualified to work in a wide range of professional and occupational sectors that require computing, software, networking, and digital systems expertise. The relevant sectors include but are not limited to:

1. Information Technology and Computing Industry
 - Software development firms.
 - IT consultancy and solutions providers.



- System integration and software engineering companies.
- 2. Networking and Cybersecurity Sector
 - Internet service providers (ISPs).
 - Cybersecurity companies.
 - Telecommunication and network infrastructure providers.
 - Data centers and cloud computing enterprises.
- 3. Business and Financial Sector
 - Banks and financial institutions employing ITC graduates in systems analysis, data analytics, and IT auditing.
 - Enterprise Resource Planning (ERP) and business process management firms.
- 4. Public and Government Sector
 - E-government agencies and ministries implementing digital transformation.
 - Smart city and digital services projects.
- 5. Education and Research Sector
 - Universities and educational institutions offering IT, computing, or software training.
 - Research and development centers focusing on computing technologies.
- 6. Digital Media and Web Development Sector
 - Web and multimedia design companies.
 - Digital marketing agencies.
 - Game development studios.
- 7. Industrial and Engineering Sector
 - Companies involved in automation, control systems, and embedded technology.
 - IT support for industrial and manufacturing systems.
- 8. Healthcare and Smart Systems Sector
 - Health informatics and telemedicine companies.
 - Data analytics for healthcare systems.

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. ITC/ITC	131	<ul style="list-style-type: none"> • System modeling, analysis, development and integration, including hardware, software and web-based systems. • Cloud Computing Engineer • Computer Network Specialist • Computer Support Specialist • Database Administrator



		<ul style="list-style-type: none"> • Mobile Technology • Software Designer/Developer Storage Management • Information Technology Analyst • Information Technology Leadership • Information Security Specialist Software/Application Developer
2. ITC/Computer Science (CS)	131	<ul style="list-style-type: none"> • Software Developer • Computer Systems Analyst • Web Developer • Software quality assurance manager • Data analyst • Database Administrator • Computer Hardware Engineer • Information Security Analyst • Computer and Information Research Scientists/ Systems Managers • Full-stack developer
3. ITC/Web Development (WD)	131	<ul style="list-style-type: none"> • Applications Developer • Game Developer • Multimedia Programmer • Web Content Manager • Web Application Developer • Website Desig • Database Designer • Digital Marketing • Graphics Designer • Multimedia Production • Programmer • Software Developer
4. ITC/Networking and Security (N&S)	131	<ul style="list-style-type: none"> • Security Analyst • Security Engineer • Security Architect • Security Administrator • Security Software Developer • Cryptographer • Network Technical Architects • Network Technicians • Network Principals • Network Administrators • Cryptanalyst • Network and Security Consultant
5. ITC/Computing with Business (CwB)	131	<ul style="list-style-type: none"> • Software Developer • Applications Programmer



- Systems Programmer
- Systems Analyst
- Multimedia Programmer
- Computer Sales Support
- Database Administrator
- IT Technical Support Officer

7. Exit Points/Awarded Degree (if any):

exit points/awarded degree	Credit hours
1. NA	
2.	
3.	

8. Total credit hours: (131)



B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

Through the ITC program, we are looking to provide high quality of educations, research and consulting programs in the most important disciplines and tracks of computer and information technology.

2. Program Goals:

Educational aims and objectives of the Information Technology and Computing (ITC) program

The Information Technology and Computing (ITC) program has been designed and developed to provide a high-quality program of study to students at the Faculty of Computer Studies (FCS), Arab Open University (AOU). The design and development of this program have taken into consideration the guidelines provided by professional standard bodies, including the QAA, UK (QAA2016) and the curriculum guidelines of ACM-IEEE 2013 in addition to the up-to-date prospectus of the Computing and Information Technology provided by the Open University-UK. Hence, this program will enable the students at FCS, AOU to fulfil the standards expected of the ITC graduates. The flexibly structured ITC program has the following overall aims:

- To provide students with a sound grasp of essential principles of hardware based, software based or systems based technologies.
- To provide students familiarity with a variety of modern programming languages and the underlying principles of programming paradigms- functional, object oriented, logical etc.
- To enable students to solve scientific problems, along with appreciation for mathematical and scientific methods which will provide lifelong support to their carrier.
- To enable students to apply their knowledge and skills in a broad range of ITC related industries and organizations.
- To prepare students for employment in a wide range of firms, including communication systems, software engineering, networking and Security or web technologies.
- To enhance students' experience in communication, time management, analysis and problem solving.
- To develop students' skills for working in a team to tackle an appropriate development task and accomplish projects to demonstrate their ability to undertake a substantial piece of work.



Educational aims and objectives of the Information Technology and Computing (ITC) Track

This flexibly structured pathway has the following overall aims:

- To provide students with up to date principles and concepts of system based technologies, including hardware and/or software based systems.
- To enable students to apply their knowledge and understanding appropriately in activities such as analysis, abstraction, problem-solving, design, development and testing in a wide range of industries and organizations.
- To prepare students for employment in the field of ITC, including developing, integrating, and/or maintaining software and/or hardware based systems.
- To equip students with appropriate cognitive, key, practical and professional skills, including the skills needed to undertake lifelong learning in their chosen professional field.
- To enhance students' experience in communication, time management, analysis and problem solving related to ITC systems.
- To develop students' skills for working in a team to tackle an appropriate development task and accomplish projects to demonstrate their ability to undertake a substantial piece of work.

Educational aims and objectives of the Computer Science (CS) Track

Professionals working in the software industry at large bring many different kinds of expertise to their work environment. The aim of the Computer Science (CS) Pathway is to equip the student with the knowledge and skills he/she will need to take part in software related industry. In particular, our aim is to give the student:

- To grasp of computer science and of modern computer systems.
- To develop strong skills in software engineering, strategy and project management in addition to multimedia technologies.
- To understand and work in software systems that are now being constructed and used, including distributed Internet systems, intelligent systems and databases.
- To build and maintain essential skills required for software development and maintenance, such as analysis, design, programming and evaluation are built and maintained.
- To become familiar with a variety of modern programming languages and the underlying principles of Programming paradigms-functional, object oriented, logical, etc.
- To solve scientific problems, along with appreciation for mathematical and scientific methods which will provide lifelong support to their carrier.



- To work with other people in a team, communicating computing ideas effectively in a verbal and written manner.
- To acquire the qualities that come with being a graduate such as: specialist knowledge, intellectual self-confidence and independence, analytical ability and the life-long learning skills needed to keep up with fast-changing technologies.

Educational aims and objectives of the Web Development (WD) Track

This modern pathway has the following overall aims:

- To provide students with a wide umbrella of up-to-date knowledge and understanding of Web based solutions, Internet of things and Cloud Computing.
- To Prepare students to integrate the principles, concepts and techniques associated with web application/solutions, including the analysis, design and development processes involved.
- To provide the students with the necessary tools and methodologies, to construct, design and implement up-to-date web solutions; to enable them to carry out a project in web development that applies and extends their knowledge and understanding.
- To provide the students with the skills to be able to use the latest programming, networking and human-computer interaction methods for designing and developing advanced web applications.
- To provide students with the required skills that enable them to consider and understand the potentials and limitations of web based systems.
- To enable the students to work with other people in a team, communicating ideas effectively in a verbal and written manner.
- To provide the student with the qualities that come with being a graduate such as: specialist knowledge, intellectual self-confidence and independence, analytical ability and the life-long learning skills needed to keep up with fast-changing technologies.

Educational aims and objectives of the Networking and Security (N&S) Track

Networking and Security are disciplines that are closely intertwined and that undergo fast technological advances. The N&S Pathway aims to prepare the students for a professional career in these areas. It has the following overall aims:

- To enable students to develop knowledge and understanding of the fundamental concepts and technologies related to Networking and Security.
- To prepare students to apply, creatively and responsibly, their knowledge and understanding of networking systems and security techniques in activities such as: the critical analysis of these systems; effective planning, administration, and



management of such systems; the proposal and planning of enhancements to these systems; the objective evaluation of the use of such systems.

- To enable students to make reasoned arguments concerning the wide range of issues and challenges faced by networking and security systems.
- To prepare students for professional work in the fields of networking and security by providing them with the skills and capabilities needed to undertake lifelong learning and to keep their knowledge and understanding up to date.
- To enable the student to work with other people in a team, communicating ideas effectively in a verbal and written manner.
- To prepare students to not only be employed as Network related specialist, but also a Security specialist such as, Cyber Security Analysts, etc.
- To provide the student with the qualities that come with being a graduate such as: specialist knowledge, intellectual self-confidence and independence, analytical ability and the life-long learning skills needed to keep up with fast-changing technologies.

Educational aims and objectives of the Computing with Business (CwB) Track

Computing and Business are disciplines that have become closely intertwined through the world of work. The aim of the Computing and Business pathway is to equip the student with the knowledge and skills the student will need to take part in the management and execution of computer-related projects in a business setting. In particular, it has the following overall aims:

- To provide the students a grasp of the key concepts of computing and of modern computer systems, especially in Business context.
- To provide the students an acquaintance with all facets of the world of business: markets, organizations, processes, strategies, policies and decision-making, etc., along with the role of ITC.
- To prepare the students to understand the types of software systems that are now being constructed and used in business and management fields such as, e-commerce systems, Management Information systems, ERP solutions, Human Capital Management, data analytics, etc.
- To provide students with essential skills required for software development and maintenance, such as analysis, design, programming and evaluation are built and maintained.
- To prepare the students to develop key business skills of communication, presentation and team working.
- To enable students to acquire the qualities that come with being a graduate: specialist knowledge, intellectual self-confidence and independence, analytical



ability and the life-long learning skills needed to keep up with fast-changing technologies.

3. Program Learning Outcomes*

* Add a table for each track or exit Point (if any)

3.1 Learning Outcomes of the ITC program

Knowledge and Understanding

K1	Describe and evaluate the principles, concepts and techniques associated with the technology of computers and digital communication systems.
K2	Integrate the key concepts related to Computer Science, including algorithms, data structures, object-oriented programming languages, and Software Engineering.
K3	Explain the key concepts of computing, data management and analysis, including principles of design and implementation of IT project.

Skills

S1	Distinguish the features and specifications of hardware based, software-based IT and Computing systems
S2	Compare and contrast a variety of software development methods and tools, identifying the best choices to apply to specific problems.
S3	Apply appropriate numerical and mathematical skills to solve practical problems.
S4	Interpret techniques for modeling, designing, developing, problem-solving and testing of computer systems.

Values, Autonomy, and Responsibility

V1	Demonstrate the ability to work independently and as part of a team, and communicate and report professionally and effectively in an Information Technology and Computing context
V2	Consider and handle the ethical, social and legal issues that may arise during software development and use.

3.2 learning Outcomes of Information Technology and Computing (ITC) Track

Skills

S5-ITC	Critically analyse and use data and information effectively in Information Technology and Computing context.
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3.3 learning Outcomes of Computer Science (CS) Track

Skills

S5-CS	Deploy modern software tools for construction of computer science solutions and applications to solve practical problems.
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3.4 learning Outcomes of the Web Development (WD) Track

Skills

S5-WD	Interpret and refine specifications and implementations of web based systems/applications, including testing and critical evaluation.
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3.5 learning Outcomes of Networking and Security (N&S) Track

Skills	
S5-N&S	Use appropriate simulation and modelling tools in order to investigate, analyze, design, evaluate and/or test networking and communication systems.

3.6 learning Outcomes of Computing with Business (CwB) Track

Skills	
S5-CwB	Analyze practical problems and use software development concepts to design and evaluate solutions to them.

C. Curriculum

1. Curriculum Structure

1.1 Information Technology and Computing (ITC) Track

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	18	13.7%
	Elective	1	3	2.3%
College Requirements	Required	1	4	3.1%
	Elective	2	6	4.6%
Program Requirements	Required	13	88	67.1%
	Elective	0	0	0%
Capstone Course/Project	Required	1	8	6.1%
Field Training/ Internship	Required	1	4	3.1%
Residency year		-	-	-
Others		-	-	-
Total		25	131	100%

* Add a separate table for each track (if any).

1.2 Computer Science (CS) Track

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	18	13.7%
	Elective	1	3	2.3%
College Requirements	Required	1	4	3.1%
	Elective	2	6	4.6%
Program Requirements	Required	14	88	67.1%
	Elective	0	0	0%
Capstone Course/Project	Required	1	8	6.1%



Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Field Training/ Internship	Required	1	4	3.1%
Residency year		-	-	-
Others		-	-	-
Total		26	131	100%

1.3 Web Development (WD) Track

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	18	13.7%
	Elective	1	3	2.3%
College Requirements	Required	1	4	3.1%
	Elective	2	6	4.6%
Program Requirements	Required	13	88	67.1%
	Elective	0	0	0%
Capstone Course/Project	Required	1	8	6.1%
Field Training/ Internship	Required	1	4	3.1%
Residency year		-	-	-
Others		-	-	-
Total		25	131	100%

1.4 Networking and Security (N&S) Track

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	18	13.7%
	Elective	1	3	2.3%
College Requirements	Required	1	4	3.1%
	Elective	2	6	4.6%
Program Requirements	Required	13	88	67.1%
	Elective	0	0	0%
Capstone Course/Project	Required	1	8	6.1%
Field Training/ Internship	Required	1	4	3.1%
Residency year		-	-	-
Others		-	-	-
Total		25	131	100%

1.5 Computing with Business (CwB) Track



Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	18	13.7%
	Elective	1	3	2.3%
College Requirements	Required	1	4	3.1%
	Elective	2	6	4.6%
Program Requirements	Required	13	88	67.1%
	Elective	0	0	0%
Capstone Course/Project	Required	1	8	6.1%
Field Training/ Internship	Required	1	4	3.1%
Residency year		-	-	-
Others		-	-	-
Total		25	131	100%





2. Program Courses

2.1 Information Technology and Computing (ITC) Track

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	GR101	Self-Learning Skills	Required		3	Institution
	AR111	Arabic Communication Skills I	Required		3	Institution
	EL111	English Communication Skills I	Required	EL099	3	Institution
	TU170	Computing Essentials	Required		3	Institution
	MT129	Calculus and Probability	Required	EL099	4	College
Level 2	AR112	Arabic Communication Skills II	Required	AR111	3	Institution
	EL112	English Communication Skills II	Required	EL111	3	Institution
	TM103	Computer Organization and Architecture	Required	EL111	4	Program
	MT131	Discrete Mathematics	Required	EL111	4	Program
		Institution Requirements / Elective	Elective		3	Institution
Level 3	TM105	Introduction to Programming	Required	EL111	4	Program
	MT132	Linear Algebra	Required	EL111	4	Program
	TM111	Introduction to Computing and Information Technology-1	Required	EL111	8	Program
Level 4	TM112	Introduction to Computing and Information Technology-2	Required	TM111	8	Program
	M251	Object-Oriented Programming using Java	Required	TM105	8	Program
		College Requirements / Elective	Elective		3	College
Level 5	M269	Algorithms, Data Structures and Computability	Required	TM105	8	Program
	T215A	Communication and Information Technologies-A	Required	TM112	8	Program
Level 6	T215B	Communication and Information Technologies-B	Required	T215A	8	Program
	TM351	Data Management and Analysis	Required	M269	8	Program
		College Requirements / Elective	Elective		3	College
Level 7	TM355	Communications Technology	Required	T215B	8	Program
	TM354	Software Engineering	Required	M251	8	Program
	TM471-I	Graduation Project	Required	TM351	4	Program
Level 8	CAS400	Applied Studies for Computing Students	Required	TM354	4	Field Experience
	TM471-II	Graduation Project	Required	TM471-I	4	Program

* This course should be registered over two subsequent semesters

** The total credit hours of TM471 are calculated after completing the whole project





2.2 Computer Science (CS) Track

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	GR101	Self-Learning Skills	Required		3	Institution
	AR111	Arabic Communication Skills I	Required		3	Institution
	EL111	English Communication Skills I	Required	EL099	3	Institution
	TU170	Computing Essentials	Required		3	Institution
	MT129	Calculus and Probability	Required	EL099	4	College
Level 2	AR112	Arabic Communication Skills II	Required	AR111	3	Institution
	EL112	English Communication Skills II	Required	EL111	3	Institution
	TM105	Introduction to Programming	Required	EL111	4	Program
	MT131	Discrete Mathematics	Required	EL111	4	Program
		Institution Requirements / Elective	Elective		3	Institution
Level 3	MT132	Linear Algebra	Required	EL111	4	Program
	TM111	Introduction to Computing and Information Technology-1	Required	EL111	8	Program
	M251	Object-Oriented Programming using Java	Required	TM105	8	Program
Level 4	TM112	Introduction to Computing and Information Technology-2	Required	TM111	8	Program
	TM103	Computer Organization and Architecture	Required	EL111	4	Program
	M269	Algorithms, Data Structures and Computability	Required	TM105	8	Program
Level 5	T227	Change, Strategy and Project at Work	Required	TM112	8	Program
	TM240	Computer Graphics and Multimedia	Required	MT132 & TM105	4	Program
	TM298	Operating Systems	Required	TM103 & TM105	4	Program
Level 6	TM351	Data Management and Analysis	Required	M251 & M269	8	Program
	TM354	Software Engineering	Required	M251 & M269	8	Program
Level 7	TM366	Artificial Intelligence	Required	M269	8	Program
	TM471-I	Graduation Project	Required	TM351 or TM354	4	Program
		College Requirements / Elective	Elective		3	College
Level 8	CAS400	Applied Studies for Computing Students	Required	TM354	4	Field Experience
	TM471-II	Graduation Project	Required	TM471-I	4	Program
		College Requirements / Elective	Elective		3	College

* This course should be registered over two subsequent semesters

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2.3 Web Development (WD) Track

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	GR101	Self-Learning Skills	Required		3	Institution
	AR111	Arabic Communication Skills I	Required		3	Institution
	EL111	English Communication Skills I	Required	EL099	3	Institution
	TU170	Computing Essentials	Required		3	Institution
	MT129	Calculus and Probability	Required	EL099	4	College
Level 2	AR112	Arabic Communication Skills II	Required	AR111	3	Institution
	EL112	English Communication Skills II	Required	EL111	3	Institution
	TM105	Introduction to Programming	Required	EL111	4	Program
	MT131	Discrete Mathematics	Required	EL111	4	Program
		Institution Requirements / Elective	Elective		3	Institution
Level 3	TM103	Computer Organization and Architecture	Required	EL111	4	Program
	MT132	Linear Algebra	Required	EL111	4	Program
	TM111	Introduction to Computing and Information Technology-1	Required	EL111	8	Program
Level 4	TM112	Introduction to Computing and Information Technology-2	Required	TM111	8	Program
	M251	Object-Oriented Programming using Java	Required	TM105	8	Program
		College Requirements / Elective	Elective		3	College
Level 5	M269	Algorithms, Data Structures and Computability	Required	TM105 & MT131	8	Program
	T227	Change, Strategy and Project at Work	Required	TM112	8	Program
Level 6	TM354	Software Engineering	Required	M251	8	Program
	TT284	Web Technologies	Required	TM112	8	Program
		College Requirements / Elective	Elective		3	College
Level 7	TM352	Web, Mobile and Cloud Technologies	Required	TT284	8	Program
	TM356	Interaction Design and User Experience	Required	TT284	8	Program
	TM471-I	Graduation Project	Required	TM352 or TM354 or TM356	4	Program
Level 8	CAS400	Applied Studies for Computing Students	Required	TM352	4	Field Experience
	TM471-II	Graduation Project	Required	TM471-I	4	Program

* This course should be registered over two subsequent semesters

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2.4 Networking and Security (N&S) Track

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	GR101	Self-Learning Skills	Required		3	Institution
	AR111	Arabic Communication Skills I	Required		3	Institution
	EL111	English Communication Skills I	Required	EL099	3	Institution
	TU170	Computing Essentials	Required		3	Institution
Level 2	AR112	Arabic Communication Skills II	Required	AR111	3	Institution
	EL112	English Communication Skills II	Required	EL111	3	Institution
	TM111	Introduction to Computing and Information Technology-1	Required	EL111	8	Program
	MT129	Calculus and Probability	Required	EL099	4	College
Level 3	TM105	Introduction to Programming	Required	EL111	4	Program
	MT131	Discrete Mathematics	Required	EL111	4	Program
	TM112	Introduction to Computing and Information Technology-2	Required	TM111	8	Program
		Institution Requirements / Elective	Elective		3	Institution
Level 4	MT132	Linear Algebra	Required	EL111	4	Program
	M251	Object-Oriented Programming using Java	Required	TM105	8	Program
	T216A	Cisco Networking (CCNA)-A	Required	TM112	8	Program
Level 5	T227	Change, Strategy and Project at Work	Required	TM112	8	Program
	T216B	Cisco Networking (CCNA)-B	Required	T216A	8	Program
	TM103	Computer Organization and Architecture	Required	EL111	4	Program
Level 6	T316	Advanced Networking	Required	T216B	8	Program
	TM352	Web, Mobile and Cloud Technologies	Required	M251	8	Program
		College Requirements / Elective	Elective		3	College
Level 7	T318	Applied Network Security	Required	T216B & TM260	8	Program
	TM471-I	Graduation Project	Required	TM351	4	Program
		College Requirements / Elective	Elective		3	College
Level 8	CAS400	Applied Studies for Computing Students	Required	TM352	4	Field Experience
	TM471-II	Graduation Project	Required	TM471-I	4	Program

* This course should be registered over two subsequent semesters

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2.5 Computing with Business (CwB) Track

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	GR101	Self-Learning Skills	Required		3	Institution
	AR111	Arabic Communication Skills I	Required		3	Institution
	EL111	English Communication Skills I	Required	EL099	3	Institution
	TU170	Computing Essentials	Required		3	Institution
	MT129	Calculus and Probability	Required	EL099	4	College
Level 2	AR112	Arabic Communication Skills II	Required	AR111	3	Institution
	EL112	English Communication Skills II	Required	EL111	3	Institution
	TM105	Introduction to Programming	Required	EL111	4	Program
	MT131	Discrete Mathematics	Required	EL111	4	Program
		Institution Requirements / Elective	Elective		3	Institution
Level 3	BUS110	Introduction to Business	Required	EL111	8	Program
	MT132	Linear Algebra	Required	EL112	4	Program
	TM111	Introduction to Computing and Information Technology-1	Required	EL111	8	Program
Level 4	B207A	Shaping business opportunities A	Required	BUS110	8	Program
	M251	Object-Oriented Programming using Java	Required	TM105	8	Program
	TM103	Computer Organization and Architecture	Required	EL111	4	Program
Level 5	B207B	Shaping business opportunities	Required	B207A	8	Program
	M269	Algorithms, Data Structures and Computability	Required	TM105	8	Program
		College Requirements / Elective	Elective		3	College
Level 6	TM352	Web, Mobile and Cloud Technologies	Required	M251	8	Program
	BUS310	Strategic Management	Required	B207B	8	Program
Level 7	TM351	Data Management and Analysis	Required	M269	8	Program
	TM471-I	Graduation Project	Required	BUS310	4	Program
		College Requirements / Elective	Elective		3	College
Level 8	CAS400	Applied Studies for Computing Students	Required	TM352	4	Field Experience
	TM471-II	Graduation Project	Required	TM471-I	4	Program

* This course should be registered over two subsequent semesters

** The total credit hours of TM471 are calculated after completing the whole project





2.6 Institution Requirements / Elective

Course code & No.	Course Description	Credit Hours	Pre-Requisite Courses
EL118	Reading	4	EL111
FR101	French for Beginners (I)	3	
GR111	Arab Islamic Civilization	3	
GR112	Issues and Problems of Development in the Arab World	3	
GR118	Life Skills	3	

2.7 College Requirements / Elective

Course code & No.	Course Description	Credit Hours	Pre-Requisite Courses	Tracks				
				ITC	CS	WD	N&S	CwB
M109	.NET Programming	3	EL111	✓	✓	✓	✓	✓
MS102	Physics	3	EL111	✓	✓	✓	✓	✓
MT101	General Mathematics	3		✓	✓	✓	✓	✓
GT103	Fundamentals of Artificial Intelligence	3		✓	✓	✓	✓	✓
MT395	Applied Cyber Security	3	TM260				✓	
TM290	Cryptography and Internet Security	3	TM112				✓	
TM291	Management Information System		TM105 & BUS110					✓
TM295	System Modelling	3	MT132		✓			
TM297	Compression Methods for MultiMedia	3	TM112 & MT131	✓				
TM287	Web Applications Development	3	TM105			✓		

3. Course Specifications:

Insert hyperlink for all course specifications using NCAAA template (T-104)

Attached





4. Program learning Outcomes Mapping Matrix:

Align the program learning outcomes with program courses' according to the following desired performance levels (*I = Introduced & P = Practiced & M = Mastered*).

Course code & No.	Program Learning Outcomes														
	Knowledge and understanding			Skills										Values, Autonomy, and Responsibility	
	K1	K2	K3	S1	S2	S3	S4	S5 IT	S5 CS	S5 WD	S5 N&S	S5 CwB	V1	V2	
EL118	I													I	
FR101	I													I	
GR111	I					I								I	
GR112	I					I								I	
GR118	I													I	
M109	I	I		I		I	I			I			I	I	
MS102		I				I								I	
MT101		I				I								I	
GT103	I	I			I		I	I	I	I	I	I	I	I	
TU170	I		I		I									I	
AR111	I													I	
AR112	I													I	
EL111	I													I	
EL112	I													I	
BUS110	I											I		I	
MT129		I				I								I	
TM105	I	I	I	I		I	I					I	I		
TM111	I	I	I	I	I		I	I						I	
TM112	P	P			P		P	P						P	
TM103	P	P	P	P			P							P	
MT131		P				P								P	
MT132		P				P								P	
M251	P	P	P	P	P		P							P	
T215A	P		P	P				P						P	
T215B	P		P	P		P		P						P	
M269	P	P		P	P									P	
TM240	P			P	P									P	
T227	P	P	P	P	P	P			P	P	P			P	
TM298	P	P		P										P	
TT284	P	P	P	P	P		P			P				P	





Course code & No.	Program Learning Outcomes													
	Knowledge and understanding			Skills									Values, Autonomy, and Responsibility	
	K1	K2	K3	S1	S2	S3	S4	S5 IT	S5 CS	S5 WD	S5 N&S	S5 CwB	V1	V2
T216A	P		P	P	P		P				P		P	
T216B	P		P	P	P		P				P		P	
B207A	P		P			P						P		P
B207B	P					P						P		P
BUS310	M		M									M		M
T316	M	M	M	M	M						M		M	
T318		M	M	M	M						M		M	
TM351			M				M	M					M	
TM352	M	M	M	M	M		M			M	M	M	M	
TM354	M	M	M	M	M			M	M	M				M
TM355	M		M	M	M			M					M	
TM356	M	M	M	M	M	M				M			M	
TM366		M		M	M								M	
TM471	M	M			M	M	M						M	M
CAS400	M	M	M	M	M		M	M	M	M	M	M	M	M

* Add a separate table for each track (if any).

5. Teaching and learning strategies applied to achieve program learning outcomes.

Describe teaching and learning strategies and curricular and extra-curricular activities adopted to achieve the Program's learning outcomes in all areas.

Face to Face classes:

The course instructor facilitates the process of understanding and learning. The course teacher explains the scientific material during the class meetings by preparing a presentation of the course units, an educational video, and using the technologies available in the classrooms (E-Station) and the Internet.

Evaluation of students' performance through formal evaluation methods and constructive feedback. This means evaluating students' performance through various elaborate evaluation processes such as the continuous evaluation process and the final exam.

Training workshop: directing students to use electronic systems to obtain scientific material, deliver assignments, and communicate with professors and fellow students.

Support and encourage the process of student learning through the role of the teacher in motivating students to do what they can to achieve their academic goals.





Follow up on students' development and guide and guide them academically: A faculty member provides academic guidance to students and directs them to register in the courses they wish to study and that are compatible with the proper progress of their study plan.

Office hours of faculty members:

Office hours provide students with the opportunity to communicate directly with faculty members before or after class meetings. Students use office hours to obtain direct assistance related to their courses.

Online Office hours through electronic systems:

The online office hours allow holding additional meetings between lecturers and students to discuss topics related to the course, and to provide academic guidance, as the university administration is keen to allocate certain hours for faculty members to respond to students' inquiries and discuss them online through these programs, which facilitates communication with the academic staff in case it is difficult for the student to attend for the university.

Teaching materials:

The university is keen to design educational materials that guarantee the provision of an educational material prepared online and is supported by all the integrated services that can be provided to the student through the electronic educational style. The educational materials include the following:

First: Study Materials:

It includes the detailed basic educational material and includes either paper or digital books, or smart books provided through interactive electronic pages, and auxiliary materials to support the educational process for each educational material through various multimedia and websites supporting the scientific material as references and others.

Second: The digital library:

Digital libraries are the natural extension of traditional libraries, due to the successive developments in education in the field of communications, computers and information technologies, and what these revolutions shaped from the emergence of local and global information networks, the most prominent of which was the emergence of the Internet, in addition to the emergence of electronic information sources that formed The most important reasons for the establishment of digital libraries, in addition to their extreme importance for researchers and scholars, through which the researcher can access the information he needs while at home or at his workplace at any time and place. There is no doubt that the





blended learning system has become dependent to a large extent on e-learning and the provision of information sources in all its forms, whether read or written or in electronic form. The Arab Open University has kept pace with this development during its early years and launched its first digital platform in cooperation with a number of global databases that provide information sources in the scientific disciplines offered by the university; This helps students in obtaining information and preparing course requirements. The Arab Open University database platform includes approximately sixty databases distributed over different disciplines, enabling the student to search all of them or search in a specific database. The university branches provide halls for students that enable them to access the digital library, and they can also access it through the Learning Management System (LMS) by providing an icon for the library that passes the student to the digital library directly without the need to enter a new password, and the annex shows the names of the databases available to students of each college Academy.

Self-study:

The study materials offered by the Arab Open University contribute to the development of the self-learning skill among its students and are specifically designed to enable students to be self-reliant in acquiring information, and GR101 (Self-learning Skills) has been added as a basic requirement for the university.

Computer labs:

The university provides computer labs to enable the student to practice the practical application of some subjects using computers and software.

The student's role in the university's educational system:

The role of the student in the university's educational system (blended education) is highlighted to be a traditional recipient in direct meetings, and to be self-study in indirect meetings, and from this point of view, the adoption of the Arab Open University in Saudi Arabia came to adopt the regular (blended) education system as a basic system for the university to develop skills Student self-learning, and creating a knowledge society by enhancing the appropriateness and flexibility of access to course resources and activities, especially for students who face difficulties related to work or geographical distance. There are direct and constant meetings between the faculty member and the student, in addition to class meetings organized using the modern technology used by the university. Among the most important roles that the student plays in the university's education system are the following:

1. Attending direct class meetings and interaction within the lecture.





2. Attending indirect meetings through video communication programs.
3. Follow up on the official university website and the learning management system on an ongoing basis to know what is required to be prepared and reviewed during each lecture.
4. Preparing in advance for the part that will be explained in the lecture and preparing questions and inquiries that he would like to understand more accurately.
5. Active participation in the activities provided by the course professor, whether individual or group, during class meetings or electronic systems.
6. Accessing dialogue and discussion forums, through which knowledge and information are exchanged between students and the teacher in the learning management system.
7. Attending workshops and practical application laboratories.
8. Attending the mid-term (MTA) and final (final) physical exams on the university campus.
9. The use of electronic systems.
10. Attend the required online office hours on the learning management system.
11. Participation in extra-curricular activities. Attending the preparation workshops.
12. Performing physical quizzes.
13. Handing over the quarterly assignments according to the specified dates, which are subject to scrutiny through the Turnitin program, which is specialized in measuring the similarity between documents to ensure that they are free of quotations or copies in order to preserve the literary and scientific rights of authors.
14. Participation in voluntary work.
15. Participation in extra-curricular activities.

6. Assessment Methods for program learning outcomes.

Describe assessment methods (Direct and Indirect) that can be used to measure the achievement of program learning outcomes in all areas.

The Program should devise a plan for assessing Program Learning Outcomes (all learning outcomes should be assessed at least twice in the bachelor program's cycle and once in other degrees).

All courses (except the project and CAS400):

- Midterm Assessment (MTA).
- Tutor Marked Assignment (TMA).
- Attendance and Activities.





- Final Exam.

Project:

- TMA.
- Preliminary presentation.
- Project deliverable.
- Project report.
- Project presentation.

Applied Studies For Computing Students (CAS400):

- Field supervisor evaluation report.
- Final report.
- Presentation.



D. Student Admission and Support:

1. Student Admission Requirements

Attached: [The Student Guide](#)

2. Guidance and Orientation Programs for New Students

(Include only the exceptional needs offered to the students of the Program that differ from those provided at the institutional level).

At the Faculty of Computer Studies (FCS) – Arab Open University, Saudi Arabia branch, the guidance and orientation programs are designed to meet both institutional and program-specific needs. In addition to the general orientation conducted at the university level, FCS provides specialized orientation sessions tailored to the academic and technical requirements of computer studies students. These sessions focus on the following exceptional needs:

Program-Specific Academic Orientation:

New students receive detailed guidance on the structure of the ITC program, study plan, and course sequencing to help them plan their learning path effectively.

Virtual Learning and LMS Orientation:

Students are trained on how to use the Learning Management System (LMS) and e-library resources efficiently, including submitting assignments, participating in forums, and accessing recorded tutorials.

Tutorial and Attendance System Awareness:

FCS emphasizes the blended learning model of AOU, clarifying the 50% face-to-face and 50% virtual academic tutorial requirements, as well as attendance policies and consequences of absence beyond the 25% limit.

Academic Advising and Support:

Each student is assigned an academic advisor from the faculty to provide continuous support regarding academic performance, course selection, and progression.

Technical Skills Orientation:

Workshops and hands-on sessions are offered to help students familiarize themselves with programming environments, online submission tools, and relevant software applications used in FCS courses.

Ethics and Academic Integrity Awareness:

Orientation includes a session on plagiarism, proper citation, and ethical use of technology in academic work and TMA.

Continuous Guidance:



Follow-up sessions are conducted during the first semester to ensure students' smooth adaptation to the open learning system and to provide academic and technical assistance when needed.

3. Student Counseling Services

(Academic, professional, psychological, and social)

(Include only the exceptional needs offered to the students of the Program that differ from those provided at the institutional level).

Support is provided for students through a variety of means:

- Induction and orientation sessions.
- Academic advisors.
- AOU Policies.
- Learning Management System LMS with learning resources.
- Student Information System SIS
- Face-to-face tutorials.
- Practical laboratory sessions.
- Tutors' office and e-office hours.
- Formative feedback on TMAs and MTAs.
- Written guidance.
- Lectures through video conferencing.
- Support material (video lectures, java applets, simulations, etc.) to supplement and enhance the UK OU material.
- Mock exams are provided to students.
- ICT facilities.
- IT Help Desk.
- Student email.
- Wireless Internet access in most of the AOU country campuses.
- Online Student Support System (SSS).
- Disability and Dyslexia online support system.
- PASS (Peer Assisted Student Support).
- E-Library and other learning resources.
- Academic Counselling is provided by academic counsellors.
- Personal Development Planning (PDP).
- Student representatives in the Student-Staff Liaison Committee (SSLC), and Academic Committee allowing students to share in the decision-making process.
- Career planning guidance and services.
- The Students' Union exists at AOU.
- Student Fund Regulations.
- Appeals and complaints system.





- Graduate Unit.

[Attached: Students Bylaws](#)

[Attached: Student Services Address Book](#)

4. Special Support

(Low achievers, disabled, gifted, and talented students).

- Scholarship for outstanding students
- Ramps and special elevators.
- Award extra exam time (if needed).
- Special parking lots.
- Other special facilities.
- Academic support is available during the Exams, if needed
- Writing Center.

E. Faculty and Administrative Staff:

1. Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professor	Computer Sciences	Computer Science	--	1	1	2
Associate Professor	Computer Sciences	Computer Science	--	4	3	7
Assistant Professor	<ul style="list-style-type: none"> • Computer Sciences • Mathematics 	<ul style="list-style-type: none"> • Computer Sciences • Mathematics 	--	10	9	19
Lecturer	<ul style="list-style-type: none"> • Computer Sciences • Mathematics 	<ul style="list-style-type: none"> • Computer Sciences • Mathematics 	--	6	6	12
Teaching Assistant	--	--	--	--	--	--
Technicians and Laboratory Assistants	IT	IT	--	3	3	6
Administrative and Supportive Staff	IT	IT	--	2	3	5
Others (specify)	--	--	--	--	--	--



F. Learning Resources, Facilities, and Equipment:

1. Learning Resources

Learning resources required by the Program (textbooks, references, e-learning resources, web-based resources, etc.)

Regularly updating the physical and electronic resources, including e-library, Learning Management System (LMS), Student Information System (SIS), and other support systems for our students. Additionally, a wide range of supplementary materials and video recordings are offered through the LMS platform. The students are given incredible support in the form of learning resources such as textbooks, reference materials and other resource materials, including electronic and web-based resources. The e-library facilities provide a wonderful platform for students and staff to explore and expand their knowledge sources. Recorded lectures, study guides and workshops are immensely helpful in supporting the learning needs of students. AOU provides effective and high quality of learning resources according to OU valid textbooks and material. BCCs share learning outcomes process to cover specified subjects of the program.

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

Arab Open University offers international database to cover the main subjects that available in university for students and tutors. In addition, Arab Open University Student presents effective facilities and equipment and activities such as:

- Class room that supported by advanced technology are available to students and tutors.
- Disability and special cases consider by AOU facilities and equipment.
- Induction day, Student handbook.
- LMS, Support/Teaching/Management Staff, online resources.
- Appeals and complaints system.
- sophisticated computer labs.
- classrooms.
- library facilities are provided with international standards.
- Digital libraries.
- online libraries.
- financial aids.
- learning support.
- career advice.
- medical facilities.



3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the Program)

The AOU strongly believes in providing equal opportunities for all students at university. It also makes efforts to provide a safe, secure, healthy and confidential environment. Students have the right to appeal to the branch authorities. Processes and procedures for their appeals /complaints are contained in the rules and regulations of the AOU.

In fact, a holistic environment is provided to students to ensure a healthy and safe atmosphere conducive for blended learning through the following channels:

- 24x7 technical and student support.
- Online academic advising.
- Frequent communication with the faculty using all social networking platforms.
- Psychological and emotional support for the needy .
- E-office hours for student support.

G. Program Quality Assurance:

1. Program Quality Assurance System

Provide a link to the quality assurance manual.

Attached: quality assurance manual

2. Procedures to Monitor Quality of Courses Taught by other Departments

- Strict quality measures take place to guarantee fair/correct marking at all branches and across them through Cross branch marking (CBM).
- Feedback from students.
- Peer Feedback.
- Feedback from stakeholders.
- Assessment and review of students results.
- Course reports.

3. Procedures Used to Ensure the Consistency between Main Campus and Branches (including male and female sections).

- Frequent meetings with the Deanship and teaching staff of different branches.
- Meetings with BCCs and Tutors.
- Meetings with GCCs and BCCs.
- A Central Learning Management System (CLMS) ensures the consistency of course delivery in different branches.
- Cross branch program discussions with all branches through the members of the academic committee.



- Faculty Council meetings.
- Implementation of the best practices in six different branches.

4. Assessment Plan for Program Learning Outcomes (PLOs),

- Assessment and evaluation of PLOs are performed directly and indirectly. The PLOs are assessed and evaluated by different independent mechanisms according to the nature of the program. The aim of using different mechanisms is to obtain measurements from varied sources. The findings obtained from the mechanisms are transformed to quantitative results for easy comparison.
- Planning Phase (Preparing Questions): Academic program are keen to create assessments which suit the learning outcomes of the program in general and match the outputs of each course. Qualified faculty members are assigned as GCC for preparing the exams of each course. The questions are prepared based on three levels that consider the natural orientation of the distribution (distinguished, average and weak students).
- Implementation Phase: The examination committee supervises the implementation of copying the assessment materials and distributing the questions to the students during exams. Upon the completion of the exams, the examination committee submits the scripts to the corresponding program for grading.
- Evaluation/Verification of Students' Assignments and Graduation Projects.
- AOU uses the Turnitin system to detect plagiarism in TMAs. Another means of verifying students' deliverables is to request the students to present their assignment in classrooms through further discussion with the tutor.
- The purpose of assessment is not to coerce students into learning the course material but to ensure that alignment between course objectives, learning outcomes and student understanding as well as the application of course content in different contexts.
- It is mandatory for all graduates to take (Qiyas) Test.

5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness of courses	Students	Surveys	End of semester
Effectiveness of teaching and assessment	Students	Surveys	End of semester
Effectiveness of Learning resources	Students/tutors	Surveys	End of semester
Evaluation/Verification of Students' Assignments	External examiners	Samples	End of semester



Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Evaluating the skills of faculty and teaching staff	Faculty staff	Peer review/ appraisals	End of semester
Student's skills evaluation	GCC	Assessment	Throughout the semester

Evaluation Areas/Aspects: e.g., leadership, effectiveness of teaching & assessment, learning resources, services, partnerships, etc.

Evaluation Sources: students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, etc.

Evaluation Methods: e.g., Surveys, interviews, visits, etc.

Evaluation Time: e.g., beginning of semesters, end of the academic year, etc.

6. Program KPIs*

The period to achieve the target (2027) year(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	KPI-P-01	Students' evaluation of quality of learning experience in the program	3	Survey: It is measured by the Quintet Likert scale to get on rate of mathematical averages for the students' views.	Annually
2	KPI-P-02	Students' evaluation of the quality of the courses	3	Survey: It is measured by the Quintet Likert scale to get on rate of mathematical averages for the students' views.	End of each semester
3	KPI-P-03	Completion rate	65%	The number of students graduating at the specified time/ the total number of the students joining the university x100.	Annually
4	KPI-P-04	First-year students retention rate	75%	Number of first year undergraduate students who continue at the program the next year / the total number of first year students in the same year x100	Annually
5	KPI-P-05	Students' performance in the professional and/or national examinations	50%	The percentage who were successful in the professional and/or national examinations.	Annually
6	KPI-P-06	Graduates' employability and enrolment in postgraduate programs	10%	The number of graduates who are: employed, or enrolled in further study after 12 months of graduation/ the total number of graduates x 100	Annually
7	KPI-P-07	Employers' evaluation of the program	3	Survey: It is measured by the Quintet Likert scale to get on	Annually

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
		graduates proficiency		rate of mathematical averages for the students' views.	
8	KPI-P-8	Ratio of students to teaching staff	1:90	The total number of the students/ the total number of the teaching staff x 100.	Per semester
9	KPI-P-9	Percentage of publications of faculty members	70%	Total number of who faculty members published at least one paper/number of faculty members	Annually
10	KPI-P-10	Rate of published research per faculty member	90%	Total number of published research for all faculty members/number of faculty members	Annually
11	KPI-P-11	Citations rate journals per faculty member	10	Total citations number for all faculty members/number of faculty members	Annually

*including KPIs required by NCAAA

H. Specification Approval Data:

Council / Committee	Faculty Council
Reference No.	FCS/FC/4/4-24
Date	August 28, 2021

