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NCAAA

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2020

Program Specification

Program Name: Computer Science
Qualification Level : B.S.(Bachelor of Science)
Department: Computer Science
College: College of Computer and Information Sciences
Institution: Majmaah University

Content

A. Program Identification and General Information

1. Program Main Location:

College of Computer and Information Sciences, Majmaah University, Al Majmaah-11952

2. Branches Offering the Program:

Majmaah University, Al Majmaah-11952

3. Reasons for Establishing the Program:
(Economic, social, cultural, and technological reasons, and national needs and development, etc.)

- High demand of labor market for qualified graduates in the field of computer science.

- Support the local community in the area of Majmaah City.

- Present high quality of higher education in the field of computer science.

4. Total Credit Hours for Completing the Program: (139 Credit Hours)

5. Professional Occupations/Jobs:
- Software Developer
- Software Tester
- System Programmer
- Consultant
- Computer Security Specialist
- Information Security Manager
- Data Security Analyst
- Information Security Manager
- Network Security Specialist
- Data Architect
- Data Analyst
- Computer Vision Engineer
- Machine Learning Engineer
- Game Developer

6. Major Tracks/Pathways (if any)**:**

Major track/pathway	Credit hours (For each track)	Professional Occupations/Jobs (For each track)
1. Data Science	18	Data Architect, Data Analyst, Data Scientist
2. Artificial Intelligence	18	Computer Vision Engineer, Machine Learning Engineer, Game Developer

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

Intermediate exit points/awarded degree	Credit hours
1. Diploma in Computer Science	68

B. Mission, Goals, and Learning Outcomes

1. Program Mission:

The program derived its mission and vision from the mission and goals of Majmaah University by preparing well trained, qualified and national professionals in computer science field and providing the graduates with latest knowledge, advanced skills, and strong moral values towards working and contributing to develop, serve, and educate the society of the kingdom of Saudi Arabia in all scientific, economic, and social fields.
The following statements summarize the university, college and department missions.
Mission 1. Quality education (university, college, and department)

Mission 2. Research Services (university)
Mission 3. Serve society (university, college, department)
Mission 4. Highly skilled graduates (college, department)

2. Program Goals:

The program will produce graduates who:

PEO 1: Be gainfully employed in computer science or related career paths including industrial, academic, governmental, and non-governmental organizations.
PEO 2: Continue their professional development by engaging in professional activities and/or training to enhance their careers and/or pursue post-graduate studies
PEO 3: Advance in their professional career of the Computer Science field.

3. Relationship between Program Mission and Goals and the Mission and Goals of the Institution/College.

	Mission 1	Mission 2	Mission 3	Mission 4
PEO1	✓	✓	✓	✓
PEO2		✓	✓	✓
PEO3	✓	✓	✓	✓

4. Graduate Attributes:

In order to graduate in Bachelor of Science in Computer Science following are the requirements:

Requirement	Type	Credit Hours	Percentage out of stud plan hours
University	Compulsory	12	8.63%
University	Elective	0	0.00%
College	Compulsory	53	38.13%
College	Elective	0	0.00%
Program	Compulsory	55	39.57%
Program	Elective	18	12.95%
Free Elective		1	0.72%
Total Credits and Percentiles		139	100%

The courses taken outside the department fall into two categories:
- University requirements: Courses taken by all students in Majmaah University. These courses focus on local and national needs and norms. As such, they primarily cover Islamic teachings including history, ethics, and values, as well as Arabic languages. In addition, the university requirement includes general courses to broaden the outlook of students, or enhance essential non-computing skills.

- General English course: courses to enhance oral and written skills of the students.

5.Program learning Outcomes*

Knowledge and Understanding

K1	An ability to understand a problem and identify the computing requirements appropriate to its solution

Skills	
S1	Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions
S2	Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline
S3	Communicate effectively in a variety of professional contexts
S4	Apply computer science theory and software development fundamentals to produce computing-based solutions
S5	An ability to apply knowledge of computing and mathematics appropriate to the discipline
Values	
V1	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline
V2	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles

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

C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	12	8.63%
	Elective	-	-	-
College Requirements	Required	13	53	38.13%
	Elective			
Program Requirements	Required	17	50	35.9%
	Elective	6	18	12.95%
Capstone Course/Project		2	5	3.5%
Field Experience/ Internship		1	1	0.7
Others				
Total			**139**	**100%**

* Add a table for each track (if any)

2. Program Study Plan

Program Study Plan

1. Compulsory and Elective Requirements

Requirement	Type	Credit Hours	Percentage out of study plan hours	Committee Observations
University	Compulsory	12	8.63%	
	Elective	0	0.00%	
College	Compulsory	53	38.13%	
	Elective	0	0.00%	
Program	Compulsory	55	39.57%	
	Elective	18	12.95%	
Free Elective		1	0.72%	
Total Credits and Percentiles		139	100%	

2. University Requirements

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
101	SALM	Introduction to Islamic Culture)مقدمة للحضارة الإسلامية(	2(2,0,0)		Students choose 3 courses
102	SALM	Islam and Society Building)الإسلام وبناء المجتمع(	2(2,0,0)		
103	SALM	Economic System in Islam)النظام الاقتصادي في الإسلام(	2(2,0,0)		
104	SALM	Fundamental of Political System in Islam)أساسيات النظام السياسي في الإسلام(	2(2,0,0)		
101	ARAB	Arabic Language Skills)مهارات اللغة العربية(	2(2,0,0)		Students choose 1 course
103	ARAB	Arabic Writing)الكتابة باللغة العربية(	2(2,0,0)		

101	ENG	General English (لغة إنجليزية عامة)	2(2,0,0)		
101	ENT	Business Entrepreneurship (ريادة الأعمال)	2(2,0,0)		
101	FCH	Family and Childhood (الأسرة والطفولة)	2(2,0,0)		
101	HAF	Principles of Health and Fitness (مبادئ الصحة واللياقة البدنية)	2(2,0,0)		Students choose 2 courses
101	LHR	Human Rights Systems (أنظمة حقوق الإنسان)	2(2,0,0)		
101	SOCI	Societal Issues (قضايا مجتمعية)	2(2,0,0)		
101	VOW	Volunteering Systems (أنظمة العمل التطوعي)	2(2,0,0)		
Total Required			**12 Credits**		

3. College Compulsory Requirements

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
111	EN	English 1	5 (3,4,0)		
112	IT	Computer Fundamentals	3 (3,1,0)		
113	MH	Calculus1 (حساب التفاضل والتكامل 1)	3 (3,0,1)		
121	MH	Discrete Mathematics (الرياضيات المتقطعة)	3 (3,0,1)		
122	EN	English 2	3 (2,2,0)	EN 111	
123	PHY	Physics 1 (فيزياء 1)	3 (2,2,0)		
131	CS	Programming 1 (برمجة الحاسب 1)	4 (3,2,0)		
132	MH	Calculus 2 (حساب التفاضل والتكامل 2)	3 (3,0,1)	MH 113	
133	STAT	Probability and Statistics (الإحتمالات والإحصاء)	3 (3,0,1)	MH 113	
211	CS	Programming 2 (برمجة الحاسب 2)	4 (3,2,0)	CS 131	
212	EN	Technical English 1 (لغة إنجليزية تقنية 1)	2 (2,0,0)	EN 122	
213	IS	Fundamental of Database (أساسيات قواعد البيانات)	3 (3,0,1)	CS 131	
221	EN	Technical English 2 (لغة إنجليزية تقنية 2)	2 (2,0,0)	EN 212	
231	CS	Data Structures (هياكل البيانات)	3 (3,1,1)	CS 211	
311	CS	Operating Systems (أنظمة التشغيل)	3 (3,0,1)	CS 231	
331	CS	Seminar (ندوة)	1 (1,0,0)	70 Credits	
335	IT	Ethics & Professional Practice (الأخلاقيات والممارسات المهنية)	2 (2,0,0)	70 Credits	
333	IS	Software Project Management (إدارة مشاريع البرمجيات)	3 (3,0,1)	70 Credits	
Total			**53 Credits**		

Program Specification

4. Program Compulsory Requirements

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
214	PHY	Physics 2 (فيزياء 2)	3 (3,0,1)	PHY 123	
222	MH	Linear Algebra (الجبر الخطي)	3 (3,0,1)		
223	MH	Differential Equations (المعادلات التفاضلية)	3 (3,0,1)	MH 132	
232	IT	Selected Topics in Emerging Technologies (موضوعات مختارة بالتقنيات الناشئة)	2 (0,4,0)		
233	CS	Computer Graphics (الرسومات باستخدام الحاسب)	3 (3,0,1)	CS 211	
314	CS	Software Engineering (هندسة البرمجيات)	3 (3,0,1)	CS 211	
313	GE	Engineering Chemistry (كيمياء هندسية)	3 (3,0,1)		
324	IT	Data Transmission &Computer Networks (تراسل البيانات وشبكات الحاسب)	3 (3,0,1)	CS 231	
322	CS	Computer Organization (تنظيم الحاسب)	3 (3,0,1)	MH 121	
323	CS	Programming Languages (لغات البرمجة)	3 (3,0,1)	CS 231	
334	CS	Algorithm Design and Analysis (تصميم وتحليل الخوارزميات)	3 (3,0,1)	CS 231	
412	CS	Compilers (المترجمات)	3 (3,1,0)	CS 323	
413	CS	Software Modeling and Analysis (نمذجة وتحليل البرمجيات)	3 (3,0,1)	CS 314	
415	CS	Graduation Project 1 (مشروع التخرج 1)	2 (2,0,0)	90 Credits	
420	IT	Information Security (أمن المعلومات)	3 (3,0,1)	IT 324	
423	MH	Numerical Methods (طرق عددية)	3 (3,0,1)	MH 223	
424	CS	Artificial Intelligence (الذكاء الإصطناعي)	3 (3,1,0)	MH 121	
448	CS	Graduation Project 2 (مشروع التخرج 2)	3 (3,0,0)	CS 415	
439	CS	Parallel and Distributed Computing (الحوسبة المتوازية والموزعة)	3 (3,0,1)	CS 322	
Total			**55 Credits**		

5. Program Electives

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
430	CS	Design and Architecture of Large Software Systems (تصميم وبناء نظم البرمجيات الكبيرة)	3 (3,0,1)	CS 314	

431	CS	Low-Level Design of Software (تصميم الرمجيات منخفضة المستوى)	3 (3,0,1)	CS 314	**Software Engineering" Track**" **Choose 18 credit**
434	CS	Software Evolution (Maintenance) (تطور البرمجيات "صيانة")	3 (3,0,1)	CS 314	
435	CS	Software Architectures (أبنية البرمجيات)	3 (3,0,1)	CS 314	
436	CS	Selected Topics in Software Engineering	3 (3,0,1)	CS 314	

		)موضوعات مختارة في هندسة البرمجيات(		
446	CS	Software Requirements Analysis)تحليل متطلبات البرامج(	3 (3,0,1)	CS 314
447	CS	User Interface and User Experience Design)واجهة المستخدم وتصميم تجربة المستخدم(	3 (3,0,1)	CS 314
451	CS	Coding and Information Theory)نظرية الترميز والمعلومات(	3 (3,0,1)	IT 321
452	CS	Security Management)إدارة الأمن(	3 (3,0,1)	IT 321
453	CS	Computer Security)أمن الحاسب(	3 (3,0,1)	IT 321
454	CS	Formal Methods for Cryptography)الطرق المناسبة للتشفير(	3 (3,0,1)	IT 321
455	CS	Internet Security, tools & techniques)أمن الإنترنت، الأدوات والتقنيات(	3 (3,0,1)	IT 321
456	CS	Network Management and Security)إدارة وأمن الشبكات(	3 (3,0,1)	IT 321
460	CS	Computer Vision)الرؤية باستخدام الحاسب(	3 (2,2,0)	CS 231
461	CS	Intelligent Agents)العملاء الأذكياء(	3 (3,1,0)	CS 424
462	CS	Machine Learning)تعلم الآلة(	3(3,1,0)	STAT 133
463	CS	Natural Language Processing)معالجة اللغة الطبيعية(	3 (3,1,0)	CS 323
464	CS	Robotics)الروبوطات(	3 (3,0,1)	CS 424
465	CS	Selected Topics in AI)مواضيع مختارة في الذكاء الاصطناعي(	3 (3,1,0)	CS 424
470	CS	Introduction to Data Science)مقدمة في علم البيانات(	3 (3,1,0)	STAT 133
471	CS	Big Data Analytics)تحليل البيانات الضخمة(	3 (2,2,0)	STAT 133
472	CS	Probability Statistics for Data Science)التحليل الإحصائي لعلم البيانات(	3 (2,2,0)	STAT 133
473	CS	Data Visualization)التصوير المرئي للبيانات(	3 (3,1,0)	STAT 133
475	CS	Data Mining)التنقيب عن البيانات(	3 (3,0,0)	STAT 133
474	CS	Selected Topics in Data Science	3 (3,1,0)	STAT 133

Track markers (right-hand spanning column):

Computer Security" Track" — **Choose 18 credit** (courses 451–456)

"Artificial Intelligence Track" — **Choose 18 Credit** (courses 460–465)

"Data Science Track" — **Choose 18 Credit** (courses 470–474)

		)مواضيع مختارة في علم البيانات(			
		Total Required	**18 Credits**		

6. Training Requirements

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
414	CS	Summer Training)تدريب صيفي(	1 (1,0,0)	90 Credits	
		Total	**1 Credits**		

7. Courses According to Levels

First Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
111	EN	English 1	5 (3,4,0)		
112	IT	Computer Fundamentals)أساسيات الحاسب(	3 (3,1,0)		
113	MH	Calculus1)حساب التفاضل والتكامل 1(	3 (3,0,1)		
----	SALM	Elective Islamic Culture (1))مقرر إختياري حضارة إسلامية 1(	2(2,0,0)		
		Total	**13 Credits**		

Second Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
121	MH	Discrete Mathematics)الرياضيات المتقطعة(	3 (3,0,1)		
122	EN	English 2	3 (2,2,0)	EN 111	
123	PHY	Physics 1)فيزياء 1(	3 (2,2,0)		
----	ARAB	Elective Arab Culture)مقرر إختياري ثقافة عربية(	2(2,0,0)		
		Total	**11 Credits**		

Third Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
131	CS	Programming 1)برمجة الحاسب 1(	4 (3,2,0)		
132	MH	Calculus 2)حساب التفاضل والتكامل 2(	3 (3,0,1)	MH 113	
133	STAT	Probability and Statistics)الإحتمالات والإحصاء(	3 (3,0,1)	MH 113	
		Total	**10 Credits**		

Fourth Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
211	CS	Programming 2)برمجة الحاسب 2(	4 (3,2,0)	CS 131	
212	EN	Technical English 1)لغة إنجليزية تقنية 1(	2 (2,0,0)	EN 122	

213	IS	Fundamental of Database (أساسيات قواعد البيانات)	3 (3,0,1)	CS 131	
214	PHY	Physics 2 (فيزياء 2)	3 (3,0,1)	PHY 123	
Total			**12 Credits**		

Fifth Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
221	EN	Technical English 2 (لغة إنجليزية تقنية 2)	2 (2,0,0)	EN 212	
222	MH	Linear Algebra (الجبر الخطي)	3 (3,0,1)		
223	MH	Differential Equations (المعادلات التفاضلية)	3 (3,0,1)	MH 132	
----	SALM	Elective Islamic Culture (2) (مقرر إختياري ثقافة إسلامية 2)	2(2,0,0)		
Total			**10 Credits**		

Sixth Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
231	CS	Data Structures (هياكل البيانات)	3 (3,1,1)	CS 211	
232	IT	Selected Topics in Emerging Technologies (موضوعات مختارة بالتقنيات الناشئة)	2 (0,4,0)		
233	CS	Computer Graphics (الرسومات باستخدام بالحاسب)	3 (3,0,1)	CS 211	
----	----	Elective General Course (1) (مقرر إختياري عام 1)	2(2,0,0)		
----	SALM	Elective Islamic Culture (3) (مقرر إختياري ثقافة إسلامية 3)	2(2,0,0)		
Total			**12 Credits**		

Seventh Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
311	CS	Operating Systems (أنظمة التشغيل)	3 (3,0,1)	CS 231	
314	CS	Software Engineering (هندسة البرمجيات)	3 (3,0,1)	CS 211	
313	GE	Engineering Chemistry (كيمياء هندسية)	3 (3,0,1)		
---	---	Elective General Course (2) (مقرر إختياري عام 2)	2(2,0,0)		
Total			**11 Credits**		

Eighth Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
324	IT	Data Transmission &Computer Networks (تراسل البيانات وشبكات الحاسب)	3 (3,0,1)	CS 231	

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
322	CS	Computer Organization (تنظيم الحاسب)	3 (3,0,1)	MH 121	
323	CS	Programming Languages (لغات البرمجة)	3 (3,0,1)	CS 231	
---	CS	Track Course (مقرر مسار)	3		
Total			**12 Credits**		

Nineth Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
331	CS	Seminar (ندوة)	1 (1,0,0)	70 Credits	
335	IT	Ethics & Professional Practice (الأخلاقيات والممارسات المهنية)	2 (2,0,0)	70 Credits	
333	IS	Software Project Management (إدارة مشاريع البرمجيات)	3 (3,0,1)	70 Credits	
334	CS	Algorithm Design and Analysis (تصميم وتحليل الخوارزميات)	3 (3,0,1)	CS 231	
---	CS	Track Course (مقرر مسار)	3		
Total			**12 Credits**		

Tenth Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
414	CS	Summer Training (تدريب صيفي)	1 (1,0,0)	90 Credits	
412	CS	Compilers (المترجمات)	3 (3,1,0)	CS 323	
413	CS	Software Modeling and Analysis (نمذجة وتحليل البرمجيات)	3 (3,0,1)	CS 314	
---	CS	Track Course (مقرر مسار)	3		
---	CS	Track Course (مقرر مسار)	3		
Total			13 Credits		

Eleventh Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
415	CS	Graduation Project 1 (مشروع التخرج 1)	2 (2,0,0)	90 Credits	
420	IT	Information Security (أمن المعلومات)	3 (3,0,1)	IT 324	
423	MH	Numerical Methods (طرق عددية)	3 (3,0,1)	MH 223	
424	CS	Artificial Intelligence (الذكاء الإصطناعي)	3 (3,1,0)	MH 121	
Total			11 Credits		

Twelfth Level

Course No.	Course Code	Course Title	Credit Hours	Prerequisite	Comments
448	CS	Graduation Project 2 (مشروع التخرج 2)	3 (3,0,0)	CS 415	
439	CS	Parallel and Distributed Computing (الحوسبة المتوازية والموزعة)	3 (3,0,1)	CS 322	
---	CS	Track Course (مقرر مسار)	3		
---	CS	Track Course (مقرر مسار)	3		
Total			12 Credits		

3. Course Specifications

Insert hyperlink for all course specifications using NCAAA template

4. Program learning Outcomes Mapping Matrix

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

COURSES	PROGRAM LEARNING OUTCOMES							
	KNOWLEDGE AND UNDERSTANDING	SKILLS					VALUES	
	K1	S1	S2	S3	S4	S5	V1	V2
DESIGN AND ARCHITECTURE OF LARGE SOFTWARE SYSTEMS	I		P		M			
LOW-LEVEL DESIGN OF SOFTWARE	I	P	P					
SELECTED TOPICS IN SOFTWARE ENGINEERING	I				M			
SOFTWARE EVOLUTION (MAINTENANCE)	I				M			
SOFTWARE ARCHITECTURES	I				M			
CODING AND INFORMATION THEORY	I			P	M			
SECURITY MANAGEMENT	I				M			
COMPUTER SECURITY		P			M			I
FORMAL METHODS FOR CRYPTOGRAPHY	I				M			
INTERNET SECURITY, TOOLS & TECHNIQUES	I		P					P
NETWORK MANAGEMENT AND SECURITY	I				M			
COMPUTER VISION	I				M			
INTELLIGENT AGENTS	I				M			
MACHINE LEARNING	I	P	P					
NATURAL LANGUAGE PROCESSING	I				M	P		
ROBOTICS	I					P		
SELECTED TOPICS IN AI	P				M			
INTRODUCTION TO DATA SCIENCE	I		P					
BIG DATA ANALYTICS	I		P					

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COURSES	KNOWLEDGE AND UNDERSTANDING	SKILLS					VALUES	
	KI	S1	S2	S3	S4	S5	V1	V2
PROBABILITY STATISTICS FOR DATA		P						
DATA VISUALIZATION		P	P					
DATA MINING		P	P					
SOFTWARE REQUIREMENTS ANALYSIS		P	M					
USER INTERFACE AND USER EXPERIENCE DESIGN	P				M			
SELECTED TOPICS IN DATA SCIENCE		P	M	M				
PROGRAMMING 1								
PROGRAMMING 2		P	P				P	
DATA STRUCTURES			P				P	
COMPUTER GRAPHICS			P		M			
OPERATING SYSTEMS		P	P					
SOFTWARE ENGINEERING		P	P				P	
PROGRAMMING LANGUAGES		P						
SEMINAR								
ALGORITHM DESIGN AND ANALYSIS			P					
SUMMER TRAINING				M			M	P
COMPILERS			P					
SOFTWARE MODELING AND ANALYSIS		P	M					
GRADUATION PROJECT 1	P	P	P	P	P	M	P	P
ARTIFICIAL INTELLIGENCE					P	P		
GRADUATION PROJECT 2	M	M	M	M				M
PARALLEL AND DISTRIBUTED COMPUTING			P		M			

COURSES	KNOWLEDGE AND UNDERSTANDING		SKILLS					VALUES	
	K1	**S1**	**S2**	**S3**	**S4**	**S5**	**V1**	**V2**
COMPUTER ORGANIZATION		P	P					
ENGINEERING CHEMISTRY						I		
DIFFERENTIAL EQUATIONS	I					I		
NUMERICAL METHODS	I					P		
PHYSICS 2						P		

PROGRAM LEARNING OUTCOMES

* Add a table for each track (if any)

5. Teaching and learning strategies to achieve program learning outcomes

Describe policies, teaching and learning strategies, learning experience, and learning activities, including curricular and extra-curricular activities, to achieve the program learning outcomes.

NCAAA Code	ABET Code	SO Descriptor	Teaching Strategies	Assessment Methods
K1	SO(8)	An ability to understand a problem and identify the computing requirements appropriate to its solution	Classroom Teaching	Class Test, Mid Exam, Final Exam
S1	SO (1)	Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions	Classroom Teaching	Class Test, Mid Exam, Final Exam
S2	SO (2)	Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline	Mini Project, Lab Exercises	Lab Based Assignments, Mini Project

S3	SO (3)	Communicate effectively in a variety of professional contexts	Oral /Written Communication, Seminar	Group Assignments, Mini Project
S4 [CS]	SO (6) [CS]	Apply computer science theory and software development fundamentals to produce computing-based solutions(CS)	Mini Project, Graduation Project, Lab Exercises	Case Study Implementation/ Laboratory /Mini project
S4 [IT]	SO (6) [IT]	Identify and analyze user needs and to take them into account in the selection, creation, integration, evaluation, and administration of computing-based systems. [IT]	Mini Project, Graduation Project, Lab Exercises	Case Study Implementation/ Laboratory /Mini project
S5	SO (7)	An ability to apply knowledge of computing and mathematics appropriate to the discipline	Classroom Teaching	Class Test, Mid Exam, Final Exam
V1	SO (5)	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline	Mini Project, Graduation Project, Lab Exercises	Oral or Written Communication, Seminar
V2	SO (4)	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles	Classroom Teaching, Graduation Project	Class Test, Mid Exam, Final Exam

6. Assessment Methods for program learning outcomes.

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

Assessment Process

The assessment and evaluation of SOs of an individual course during the semester based on data collection is explained in detail:

1. **Data Collection**

   a) The direct assessment is evidence of student outcome. It is tangible, visible, measurable and tends to be more compelling evidence of exactly what students have and does not learned. The evidence of students' performance to determine what they've learned is available in the course portfolio.

   b) Indirect assessment evidences tend to be composed of proxy signs that students are probably learning. An example of indirect evidence is a survey through which asking

students their self-report that what they have learned. This is evidence that students probably are learning what they report to have learned, but it is not as compelling as a faculty member looking at students' work. It is not uncommon in students' self-reports to either inflate or undervalue what they have learned.

c) Course assessment report is a consolidated evidence by the instructor of each and individual section. It contains the data collected from direct and indirect assessments, which were practiced during semester. The information is gathered using several instruments at regular intervals. For example, an exit survey is a data collection instrument that is used to gather information about the graduating students' opinion to measure the SOs achievement. These instruments are described in detail at later sections.

2. **Data Preparation:** The data preparation involves validation and transformation to make it ready for use in evaluation of SOs. For example, the paper-based survey data is converted to electronic format. The illegible, incomplete, erroneous or duplicate submissions are discarded whenever necessary.

Evaluation Processes

1. **Data Interpretation:** Metrics are used to summarize data and its interpretation based on the points of interest. For example, the survey responses are used to calculate weighted averages scored of SOs.

2. **Attainment Evaluation:** The attainment of evaluation for all the SOs are measured in this step. For example, the verification of the SO achievement from various data sources with reference to the threshold values (EE-Exceeding Expectation, ME-Meeting Expectation, PE-Progressing towards Expectation & DNME-Does Not Meet Expectation) are carried out.

3. **Issue Analysis:** Wherever the evaluation of targeted SOs are not achieved, an issue based deeper analysis is conducted. For example, reviewing faculty course assessment reports, discussing with faculty and students to determine underlying issues for poor achievement.

4. **Improvement plan:** An action plan is developed to remedy the identified issues and recommended implementation over the issue.

Figure 6.1 below summarizes assessment and evaluation of SOs.
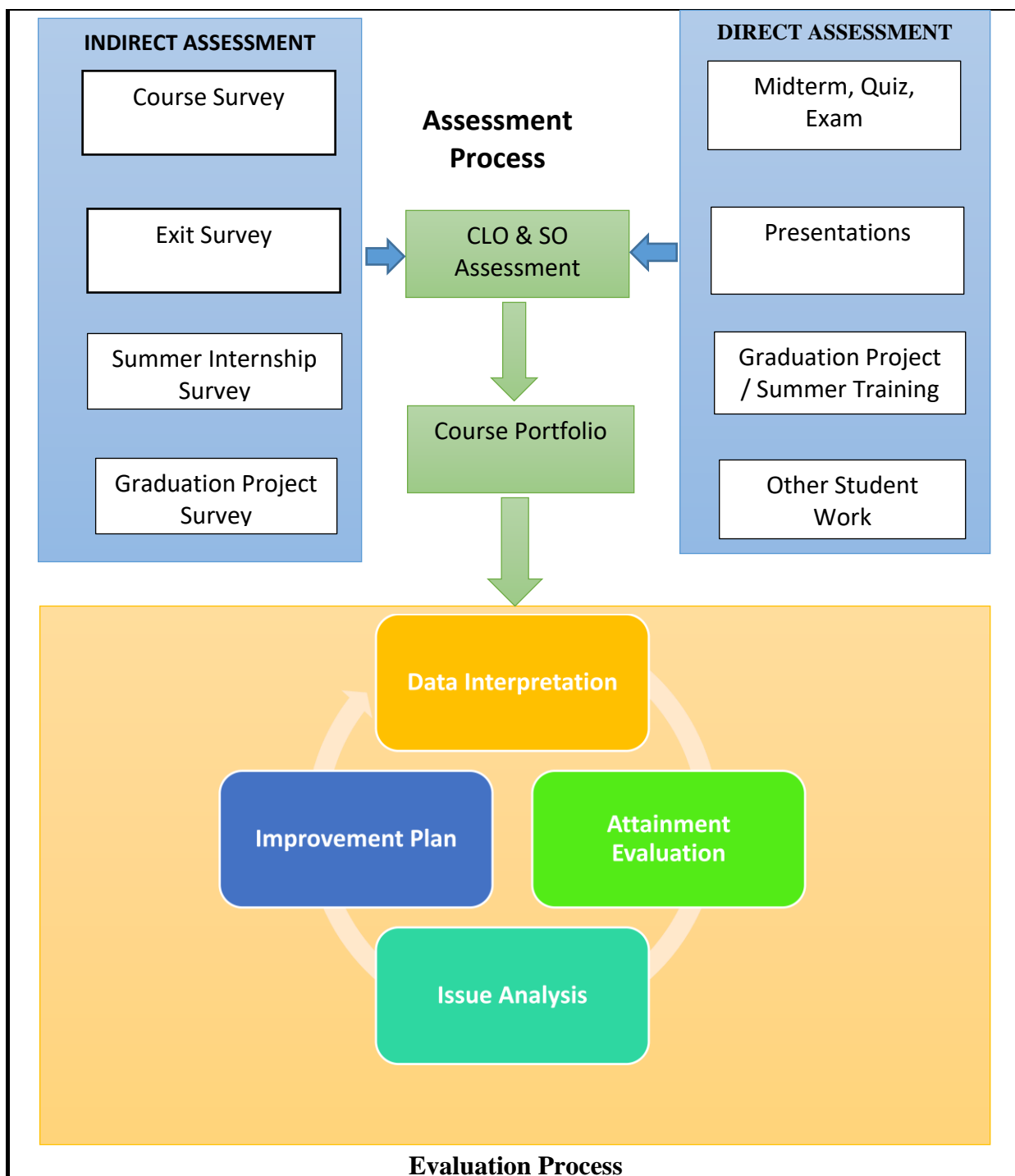
Figure 6.1: Assessment and Evaluation Processes

A. Student Outcomes

It is recommended that this section include (a table may be used to present this information):

1. A listing and description of the assessment processes used to gather the data upon which the evaluation of each student outcome is based. Examples of data collection processes may include, but are not limited to, specific exam questions, student portfolios, internally developed assessment exams, senior project presentations, nationally-normed exams, oral exams, focus groups, industrial advisory committee meetings, or other processes that are relevant and appropriate to the program.

2. The frequency with which these assessment processes are carried out

3. The expected level of attainment for each of the student outcomes

4. Summaries of the results of the evaluation process and an analysis illustrating the extent to which each of the student outcomes is being attained
5. How the results are documented and maintained

A.1. Description of the SO assessment process

The assessment of student outcomes is performed every semester through direct and indirect assessments. All student outcomes are considered to be attained when the average score reaches 60% and above.

Direct assessment:

o The assessment is performed on the defined assessment tools for all the courses. The assessment tools are provided in the course portfolio.

Indirect assessment:

o This is mainly used as a supplementary assessment measure and is done through the following surveys:

- Course surveys
- Summer internship survey
- Graduation project survey
- Exit survey

Figure 6.2 illustrates the various direct and indirect assessment
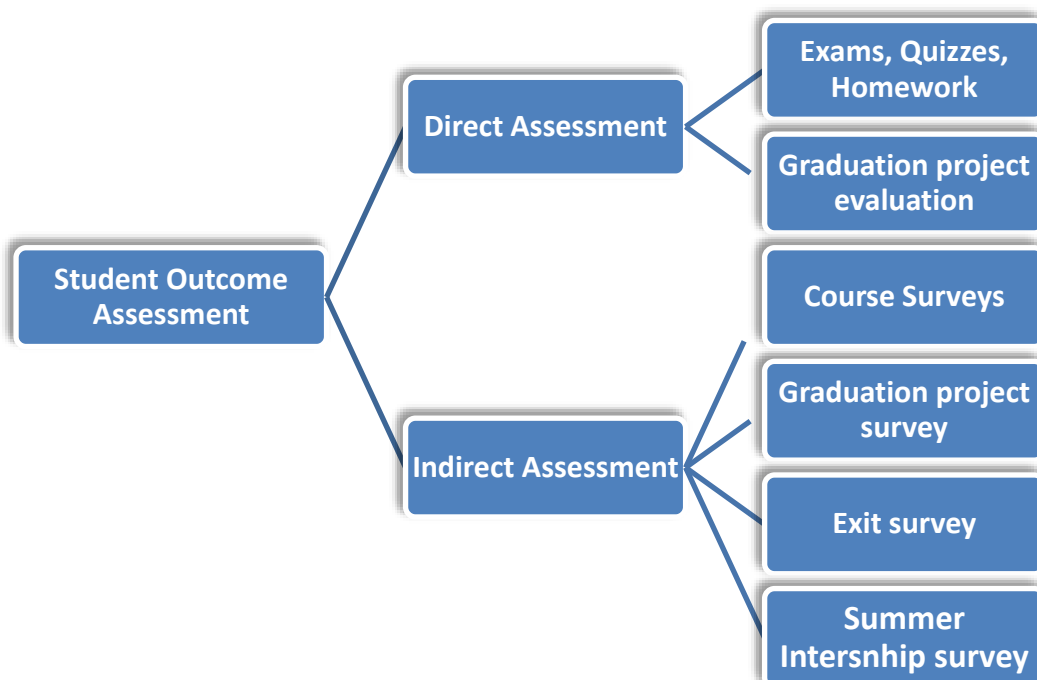
Figure 6.2 Student outcomes assessment

Table below describes the instruments that are used in direct and indirect assessment of student outcomes.

Table 6.1 : Students outcomes assessment tools – Direct and Indirect						
	Assessment Tool	Frequency	Media	How Collected	Source	Collected by	Evaluated by
Direct	Mid exam, Class test, Quiz, Assignment, Final Exam	Every Semester	Course Assessment Report	Electronic	Faculty Members	Quality Unit	Measurement and Evaluation Unit
Indirect Assessment	Course Surveys	Every Semester	Survey	Paper / Electronic	Faculty Members	Faculty Members	Measurement and Evaluation Unit
	Exit Surveys	Every Semester	Survey	Paper	Faculty Members	Quality Unit	Measurement and Evaluation Unit
	Graduation Project Surveys	Every Semester	Survey	Paper	Faculty Members	Graduation Project Coordinator	Measurement and Evaluation Unit
	Summer Internship Surveys	Every year	Survey	Paper	Summer Training and Employability Unit	Summer Training and Employability Unit	Measurement and Evaluation Unit

A.2. Direct Assessment

In the IT program, each course targets a subset of the student outcomes with a certain percentage. These outcomes are directly assessed in every course using pieces of student work (questions in exam, homework, project, etc.,) Specific questions from the desired assessment tools are designed to assess a targeted outcome in the course. The designated level of performance (60% and above) indicates the achievement of SOs in the course.

In every course, the faculty member is expected to assess the achievements of the relevant student outcomes in the course. The final assessment is preferably done close to the end of the semester.

The faculty member prepares a direct assessment report and evaluates the student outcome achievement in each course. If the assessment revealed any weaknesses in a specific student outcome, the faculty should identify the cause and propose corrective action plan that can be implemented in the course or in one of the prerequisite courses in order to improve that specific outcome achievement in the future.

The proposed corrective actions are implemented in the following semester and their impact on the specific outcome achievement shall be assessed.

The measurement and evaluation unit aggregates the outcomes achievement in all courses in IT program and computes the average score. If an outcome achievement appears to be unsatisfactory, the faculty member/department propose corrective action plan at the course level, the curriculum level, or both.

Different courses contribute to a specific outcome achievement at the program level depending on their number of credit hours and the percentage by which they target that specific outcome.

The student outcomes' assessment process is conducted every semester.

Each course instructor provides direct assessment reports and outcome evidences:

- o Brief description of the student works used to measure the achievement of student outcomes (assignments, projects, exams, etc.),

- o A description of which specific work is meant to assess which outcome.

- o Student outcomes achievement.

- o Analysis of the student outcomes achievements and identifying strengths and weaknesses.

- o Proposals to fix any identified weaknesses to be applied during the following semester.

- o Samples of students' work.

The measurement and evaluation unit reviews the provided material and checks:

- o to what extent did the students demonstrate they attained every outcome,

- o whether the work evidence is appropriate for the assessment and

- o the adequacy of the improvement proposals with regards to the identified improvement area.

The measurement and evaluation unit then writes a report to the quality unit with their findings. The findings are processed by the quality unit and forwarded to department.

The measurement and evaluation unit keeps track of the improvement proposals and checks the achieved improvement at the end of the following semester.

A.3. Indirect Assessment
The indirect assessment consists of the following processes:

- o Course survey

- o Summer internship survey

- o Graduation project survey

- o Exit survey

The surveys are described in the following sections.

A.3.1. Course survey

Faculty are required to conduct course survey to assess the course learning outcomes(CLOs) achievement from the students' point of view.

Faculty members need to analyze the survey data in order to assess the achievement of the CLOs of their courses and consequently the student outcomes. The students' perception should also be discussed in the light of the direct assessment results obtained from students' work. Faculty write an indirect assessment report, where they identify issues and their causes (if any) and suggest corrective actions or improvements to be applied in the following semester. The assessment report is submitted to the measurement and evaluation unit to check adequacy of the proposed actions and follow up their implementation. All

courses' surveys and their results are available with the faculty members.

A.3.2. Summer internship survey

After the students finished their summer internship, they are asked to fill in a survey to assess their summer internship experience and outcomes. The measurement and Evaluation unit analyses the survey data, where in which corrective actions may be suggested.

A.3.3. Graduation project survey

After the students present their graduation projects, they are asked to fill in a survey to assess their project experience and outcomes. The graduation project coordinator analyzes the survey data and submits a report to the measurement and evaluation unit, where in which corrective actions may be suggested.

A.3.4. Exit survey

An exit survey is filled in by the graduates at the end of their graduation semester. The exit survey contains questions that directly target every one of the student outcomes. At the end of every semester, the survey data are analyzed by the measurement and evaluation unit and a report identifying weaknesses is produced and submitted to the department.

Based on the students' outcome direct and indirect assessment reports, the assessment will compute the program outcomes achievement at the program level. In addition to keeping track of the identified weaknesses at the course levels, the measurement and evaluation unit will identify weaknesses that may need a global corrective action at the program level. It may propose corrective actions to the accreditation and quality unit and department council. Those actions may relate to the curriculum by changing some courses or adding new ones in order for the IT program to better achieve the student outcomes.

A.4. Frequency of Assessment

The assessment frequency is detailed in Table given below

Table 6.2: Assessment frequency

Assessment process	Frequency
Formative	Every semester
Summative	
Course survey	
Graduation project survey	
Exit survey	

Summer internship survey	Every year

A.5. Expected levels
The expected levels of satisfaction are defined as follows:

For direct assessment:
For direct assessment, when evaluating an outcome achievement using students' work, the evaluated outcome is considered to be attained, if the student achieved a score of 60% or above in the corresponding work.
Five levels of satisfaction have been defined:
- **Excellent** is given to a student whose score in a specific outcome is above 90%.
- **Very Good** is given to a student whose score in a specific outcome is between 80% and
- **Good** is given to a student whose score in a specific outcome is between 70% and 80%,
- **Fair** is given to a student whose score in a specific outcome is between 60% and 70%,
- **Unsatisfactory** is given to a student whose score in a specific outcome is 60% or lower,

For indirect assessment:
For indirect assessment (surveys), an outcome is considered to be attained if the student answer to the corresponding question is "Agree" or "Strongly Agree". Five levels of satisfaction have been defined:
- **Excellent**: corresponds to **Strongly Agree** in a specific outcome.
- **Very Good** corresponds to **Agree** in a specific outcome.
- **Good**: corresponds to **Neutral** in a specific outcome.
- **Fair**: corresponds to **Disagree** in a specific outcome.
- **Unsatisfactory**: corresponds to **Strongly Disagree** in a specific outcome.

For a whole course:
Four levels of outcome achievement at section or course level have been defined. For a section or whole course, the final judgment of the attainment of the student outcomes by all students enrolled in a course or a section is evaluated as follows:

Table6.3: Assessment Attainment Level

Exceeds Expectations (EE)	Meets Expectations (ME)	Progressing Towards Expectations (PE)	Does Not Meet Expectations (DNME)
>=80% or more of students are achieving the satisfactory level or above	>=70% and <80% of students are achieving the satisfactory level or above	>=60% & <70% of students are achieving the satisfactory level or above	< 60% of students are not achieving the satisfactory level

D. Student Admission and Support:

1. Student Admission Requirements

2. Guidance and Orientation Programs for New Students

- Orientation day is arranged for the newly admitted students in Level 3 ,to explain the important aspects of the university, college and the department and provide him/her with needed information to understand the program and department objectives..
- Workshops offered by the Different Units.
- Academic Advising - Freshmen students are considered under the academic advising of the Academic Advising unit until they join a program. Once joined to one of the available programs, the student is assigned to a faculty member of the same program as an advisor.

3. Student Counseling Services
(academic, career, psychological and social)

A faculty advisor will be assigned to each student at College of Computer and Information Sciences at Majmaah University. The role of the advisor with student begins since the student joined the university until graduation. The Guidance and Advisory Unit in accordance with departments assign a group of students for each faculty member who is responsible for guiding them in their academic life. The purpose of academic advising is to improve the student's performance and to help him/her to understand the college environment. The advisor will do the following
1.The academic advisor prepare the student file as following:
i)Student information form.
ii)Program curriculum and graduation requirements.
iii)Registration form.
iv)Admission notice in the program.
v)Updated academic record.
vi) All other forms based on academic progress of the student (adding and dropping courses, probation and suspension transfer, study postponement and suspension…)
2.Announcing the office hours for academic advising.
3. Setting up regular meeting with his students and explaining the importance of academic advising.
4.Reviewing the study plan of the student.
5. Reviewing the graduation requirements of senior students and their accordance to the rules and regulations.
6.Following up his students, their schedule, and their academic progress.
7.Advisors may assist students in:
a) Understanding and planning their academic programs at College of Computer and Information Sciences during early registration or throughout the academic year.
b)Courses registration including adding and dropping courses at the beginning of each semester.
c) Choosing mandatory and elective courses in the desired sequence with minimum of 12 credit hours.
d) Course withdrawal: The student can withdraw from a course within the period of beginning third week and the end of eighth week after getting the advisor signature.

Withdrawal from a course will result a grade of "W". After course withdrawal, the total of enrolled credit hours must not be fewer than 12 hours.

e) Understanding their own program curriculum, course prerequisites, course management, graduation requirements.

f)Developing student's communication skills with faculty members and their colleagues.

g) Developing students skills in studying, time management, dealing with examinations, and decision making.

h) Understanding and interpreting the rules and regulations that are important for the student (e.g. probation and suspension, midterms, final exams, attendance, absences, and warnings, withdrawal from the university, transfer, study postponement and suspension…)

i)Planning for graduation.

j)Planning for summer training.

k)Planning for student's career

l)Solving personal and studying problems of the student.

4. Special Support
(low achievers, disabled, gifted and talented)

The performance of the student in his/her courses is evaluated by the instructor using course assessment tools such as final exams, midterms, quizzes, homework, projects, reports etc. that fulfill the course/student outcomes. The instructors are invited to submit list of students who suffer difficulties in their classes to academic advisors. This will help the advisors to present assistance to those students in order to improve their performance in the class. In addition, students are encouraged to stop by their instructor's office during the office hours to discuss with them any concerns regarding the course. Special Care of low achievers, disabled, gifted and talented students by Academic Advisor.

E. Teaching and Administrative Staff

1. Needed Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professors	2			1	1	2
Associate Professors	4			2	2	4
Assistant Professors	8			4	4	8
Lecturers	6			3	3	6
Teaching Assistants	4			2	2	4
Technicians and Laboratory Assistants						

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Administrative and Supportive Staff						
Others (specify)						

2. Professional Development

2.1 Orientation of New Teaching Staff

Describe briefly the process used for orientation of new, visiting and part-time teaching staff

•Faculty orientation handbook is sent to the new staff before arriving.

•Orientation day is arranged for the new staff to explain the important aspects of the university, college and the department and provide him/her with needed information to understand the program and department objectives.

•Workshops offered by the university for new staff.

2.2 Professional Development for Teaching Staff

Describe briefly the plan and arrangements for academic and professional development of teaching staff (e.g., teaching & learning strategies, learning outcomes assessment, professional development, etc.)

- Workshops for various aspects of academic development and quality assurance are frequently conducted over the academic year.
- Conducting Seminars by faculty members
- Attending national and international scientific conferences.
- Inviting Experts and industry professionals for delivering sessions on special topics

F. Learning Resources, Facilities, and Equipment

1. Learning Resources.

Mechanism for providing and quality assurance of learning resources (textbooks, references and other resource materials, including electronic and web-based resources, etc.)

- Under the supervision of the Deanship of Students' Affairs, the university provides aid to the students under the Students Fund Board through several programs; examples are students loans, students employment, and academic text books.
- All library needs (textbooks, e-books, journals, publications, periodicals, databases, etc.) are available through the central library.
- In addition, 10 laptops and 6 iPADs are available in innovation center to access **Saudi Digital Library**(SDL) containing access to several e-text books and journal papers.
- In addition, the college has provided (286) textbooks serving (29) titles from our offered courses.
- **Student Information System (EduGate)-**The Deanship of Admission and Registration provides an electronic services portal (EduGate) for students and faculty, through which, students can perform online registration, review their academic progress, view and print transcripts/grades, and monitor their absence rates. While instructors can monitor students under their academic advising, view their academic progress and results, insert marks and absences for students in their class, edit self-profiles, view their academic schedules.

Learning Management System – BLACK BOARD-The Deanship of E-Learning and Distance Learning is providing a learning management system BLACK BOARD to manage courses electronically and provide other possible learning opportunities to the students. It provides, not only an easy way for course material management, but also a way of communication between faculty, colleagues, and students through virtually any device connected to the Internet, anytime, anywhere.

2. Facilities and Equipment
(Library, laboratories, medical facilities, classrooms, etc.).

The College of Computer and Information Sciences building is spread over four floors in addition to the main lobby, which contains offices for the Dean, Vice-Dean for Educational Affairs, administrative staff (including Dean's and Vice-Dean's secretaries), and other educational and managerial facilities. The Computer Science Department's faculty offices are in the second floor which is shared with the other departments as well; Information Technology, Information Systems, and Computer Engineering departments. All other infrastructure (including classrooms, labs) are distributed among the rest of the building, which are also accessible to all departments.

Attached to the Dean's office is a meeting room enough to hold up to 25 people and equipped with a modern teleconference/presentation facility to conduct national and international meetings and/or interviews.

Offices (administrative, faculty, clerical, and teaching assistants)

The department main facilities reside in the second floor, which comprises the department head's office, department secretary, ten offices (four faculty, four TAs, and 2 shared offices for lecturers), one shared meeting room equipped with presentation facilities and enough to hold up to nine people, all offices are around 9′×9′ in size, equipped with large working desk area, book shelves, folders cabinet, chairs to conduct students' meetings, desktop (or laptop) computer with regular software installed (Windows, MS Office, etc.), office stationeries (messages keeper, stapler, puncher, pen holder), IP phone, wired and wireless Internet access, and air-conditioned. Most offices are also equipped with desk-size printers, in addition to a large shared networked printer in the same floor. All offices have access to fresh air and daylight. In addition, there are two large shared offices in the female side (33′×16′ and 23′×23′) for TAs (7 and 4 TAs, respectively).

Other shared resources are spread over the lobby and fourth floor include: six large displays for important announcements, rest area, general meeting room that can hold up to 90 people, prayer room, recreation area, and cafeteria. All the shared resources are air-conditioned and have access to fresh air and daylight.

Classrooms

There are total twenty-two classrooms (11 for the male side and same for the female side) to conduct lectures distributed over the second and third floors shared between all the departments. Classrooms are of various sizes and capacities; they can accommodate

students ranging from 30 to 50 students each. All classrooms are equipped with presentation podiums, wired (dedicated to the podiums) and wireless Internet access, single students' chairs (right- and left-handed), and fully air-conditioned. All classrooms have access to fresh air and most of them have daylight access.

In addition to the above regular classrooms, there is a e-learning classroom used mainly to conduct faculty seminars, general assembly meetings between male & female sections, and is used to communicate lectures to the female side in some courses.

Laboratories

Seven laboratories equipped with dual operating systems (Windows and Mac) are being used to conduct tutorials, experiments and/or lectures. Some of these labs are for special courses only while the others are for general programming courses. In addition to two labs available in the female side for certain courses that require lab work.

Currently, the CS program has full access to Image Processing, Robotics, Network, Computer Engineering, Database, and Operating Systems Labs totaling a capacity of (116) seats in addition to instructors' seats.

Research Laboratories

Some of the laboratories in are utilized for research purposes as well as educational courses. They contain all necessary equipment, hardware, and software needed for faculty to conduct research in different areas, including:

- Image Processing
- Robotics
- Computer Engineering

Computing Resources

A total of (8) servers, (13) switches, (2) core switches, (2) routers are used to manage the whole network of all labs, administrative staff offices, and faculty offices totaling (504) Ethernet nodes. In addition, a total of (28) wireless access points are distributed all over the CCIS facility as an open source for the students to access the Internet using their own usernames and passwords.

In addition to the above, the building is equipped with e-classroom used to conduct seminars/workshops and/or classes between both male & female sides and equipped with two TV and camera sets and two desktop sharing screens with fast meeting capability. Also, a telepresence room attached to the Dean's office for meetings and interviewing new faculty members. All internal communication is managed through IP phones. The building

is equipped with (63) ready-use IP phones, but only (45) are used by faculty, TAs, and administrative staff.

The CCIS building is secured with total of (19) indoor/outdoor networked surveillance cameras distributed all over the building floors and labs.

Library Facilities

The Central Library hosts between its borders all the necessary materials, equipment, and software appropriate to serve the attendees of the library, including (but not limited to) adequate furniture, bookshelves, reading desks, private reading and Internet areas. Online access to the library index is possible through the Koha system.

Services provided by the library:

- Access to SDL (Saudi Digital Library) which constitutes the largest gathering of e-books in the Arab World with more than 114K full text e-books in multiple scientific disciplines, and more than 300 publishers worldwide (Elsevier, Springer, Pearson, Wiley, Taylor & Francis, McGraw-Hill and contain books of publishers such as world-class academics: Yale University, Oxford University, Harvard University)
- Free inquires capability (keywords, full text, title, author, subject, date of publication)
- Electronic citation service
- Access to daily newspapers "Al-Riyadh" and "Al-Jazirah"
- Information awareness
- Single access to the digital library
- Interlibrary loans
- Scan and print services for the students for educational purposes
- Access to thirty-one (31) global electronic databases
- Automated search service in the electronic catalog for the University Libraries

3. Arrangements to Maintain a Healthy and Safe Environment (According to the nature of the program)

- Fire Extinguisher
- Fire Alarm
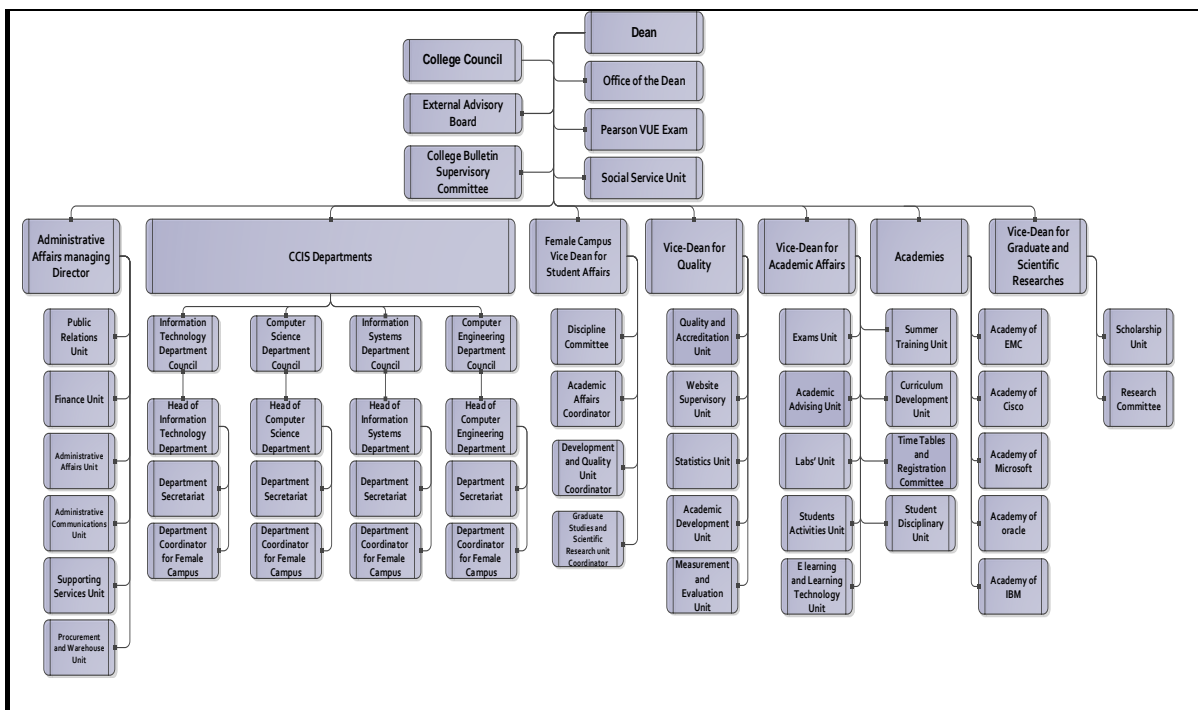- Cleaning of Faculty rooms and classrooms every day

G. Program Management and Regulations

1. Program Management
1.1 Program Structure
(including boards, councils, units, committees, etc.)

1.2 Stakeholders Involvement

Describe the representation and involvement of stakeholders in the program planning and development. (students, professional bodies, scientific societies, alumni, employers, etc.)

Our department's external stakeholders are well-represented by the department's *External Advisory Board*, including representatives from academia, representatives from the employers of the CS program, other representatives from industry, and representatives from our program alumni.

Specifically, the review and revision process of the program educational objectives is undertaken every three years by the assessment committee. Review consists of discussions amongst the members of the assessment committee, discussions with the Department's External Advisory Board, discussions with the Department's Student Advisory Board, and discussions during faculty meetings. After review, the assessment committee carries out recommended changes and submits the revised PEOs to the faculty for approval. This process has resulted in ongoing improvements to the objectives. These improvements are documented by our annual assessment report, maintained by the assessment committee.

2. Program Regulations

Provide a list of related program regulations, including their link to online version: admission, study and exams, recruitment, appeals and complaint regulations, etc.)

A. Student Admissions

Summarize the requirements and process for accepting new students into the program.

B. Study and exams-

After assigning an academic advisor for each student in the program, the student is required to meet his/her academic advisor for the purpose of registration based on his/her study plan, addressing any academic or career issues, and meeting graduation requirements. Each student has his/her own study plan based on the progress in his/her academic study and his/ her choice of the program's tracks. The student is required to maintain an updated study plan each semester to help him/her in choosing appropriate courses for registration in the following

semester and to easily follow up the academic progress. The study plan is available for both students and academic advisors[1].

The student can add/drop courses during the first week of each semester after obtaining the permission from the academic advisor. The student is allowed to register up to 18 credit hours per semester but not less than 12. Exceptions to this rule can be made after getting the approval of academic advisor and Department Chair.

The performance of the student in his/her courses is evaluated by the instructor using course assessment tools such as final exams, midterms, quizzes, homework, projects, reports etc. that fulfill the course/student outcomes. The instructors are invited to submit list of students who suffer difficulties in their classes to academic advisors. This will help the advisors to present assistance to those students in order to improve their performance in the class. In addition, students are encouraged to stop by their instructor's office during the office hours to discuss with them any concerns regarding the course.

Examination and Grading

Grade Distribution
The full mark for every course is 100, which is typically distributed as follows:
20 Marks for Midterm Exam
40 Marks for Final Exam that covers the entire course contents.
40 Marks for Semester work such as: verbal and written tests, reports or research work or additional studies, experimental lab, and weekly or monthly homework.

Instructors could alter this distribution given that the grade of the Final Exam does not exceed 60% of the total course grade, in addition to at least one midterm exam for no less than 20% of the total course grade.

Examination
The overall marks of any course is calculated as following
   1. Sixty (60) marks out of one hundred (100) for student work during the semester that includes at least one written midterm and one or more of the following choices
      ▪ Written midterm
      ▪ Quizzes
      ▪ Oral exams
      ▪ Projects
      ▪ Presentations
      ▪ Class Activities
      ▪ Laboratory work
      ▪ Research
   2. Forty (40) marks for the final examination that designated during the last week of each semester of the academic year.

Table 1.1 shows the grading system used at Majmaah University. The table shows that each letter grade has a numeric value represented by points. The points of each course are based on this number value and the credit hour value of that course. The following table shows the letter grades and their related points, course grade, and mark.

Table 1.1: Grading System at Majmaah University

Grade	Points	Course Grade	Mark
A+	5.00	Excellent Plus	95 – 100
A	4.75	Excellent	90 less than 95
B+	4.50	Very Good Plus	85 less than 90
B	4.00	Very Good	80 less than 85
C+	3.50	Good Plus	75 less than 80
C	3.00	Good	70 less than 75
D+	2.50	Pass Plus	65 less than 70
D	2.00	Pass	60 less than 65
F	1.00	Fail	Less than 60
IC		Incomplete	
IP		In process	
W		Withdrawal	
DN	0.00	Deprivation	

Courses with a grade of IC, IP, and W carry no grade value. The grade of incomplete (IC) initially carries no grade value for courses that require more than one semester. The Department Council responsible for that course may allow the student to complete the requirements of any course in the following semester on the basis of a recommendation by the instructor of the course. The student then receives (IC) grade in his/her academic record and it is not calculated in his/her semester average nor in his/her accumulative average unless he/she fulfills the requirements of that course. If one academic semester passes without changing the (IC) grade in the student's record due to not fulfilling the course, the (IC) grade is replaced by (F) which is calculated in his/her semester average and in his/her accumulative average.

The grade of In Process (IP) initially carries no grade value for research courses that require more than one semester. The student then receives (IP) grade in his academic record and it is not calculated in his semester average or in his accumulative average. If the requirement of that course is not finished within the proposed period, the Department Council which is responsible for that course may replace (IP) grade by (IC) grade.

The deprivation (DN) grade, resulted from more than 25% absence rate in a course, carries a "0" points and included in the accumulative average.

Semester and Accumulative Average
Semester GPA (or GPA in short) is resulted by dividing the sum of the points obtained by the student in all courses he/she studied during any individual semester by the total number of credit hours of those courses.

Accumulative GPA (or AGPA) is resulted of dividing the sum of points obtained by the student in all the courses that he/she has studied during his study in all semesters by the number of units representing those courses.

Table 1.2, Table 1.3, and Table 1.4 show how semester average grade and accumulative grade point average over the two semesters are calculated.

Table 1.2: GPA Calculation for First Semester

Course	Credit hours	Grade	Points
Islam and society	2	C+	7.00
Programming 1	4	B	16.00
Calculus1	3	D	6.00
Discrete Mathematics	3	D	6.00

Course	Credit hours	Grade	Points
Technical English 1	2	C	6.00
Sum	14		41
Semester average	41/14 = 2.92		

Table 1.3: GPA Calculation for Second Semester

Course	Credit hours	Grade	Points
Islamic Culture	2	A	9.00
Programming 2	4	B+	18.00
Calculus2	3	C	9.00
Physics	3	D	6.00
Technical English 2	2	C+	7.00
Sum	14		49
Semester average	49/14 = 3.5		

Table 1.4: AGPA Calculation for First and Second Semesters

Semester	Credits	Points
First Semester	14	41
Second Semester	14	49
Sum	28	90
AGPA	90 /28 = 3.21	

The following conditions must be met for a student to be granted honors:

1. The student should not fail in any course taken at Majmaah University or any other university.
2. The student must fulfill the graduation requirements within the standard period for his/her program (which is 5 years for the information technology program).
3. The student must study at least 60% of courses required for graduation at Majmaah University.

Attendance
Absences are counted from the first day of the semester. The student must regularly attend all lectures and practical lessons. The student will not be allowed to participate in the final examinations if his/her percentage of attendance is less than (75%) of the lectures and practical lessons allotted for the course.
The student who is deprived of attending the final examination will fail that course and have grade DN, unless he/she provides an excuse accepted by the College Council under the condition that he/she was not less than 50% of attendance.

Probation
The student is required to maintain a AGPA of at least 2.0 out of 5.0. The student will receive an academic warning if his/her accumulative average is less than (2.00). Those who fail to maintain this AGPA will be placed on scholastic probation and are given two semesters in which they must improve their AGPA to at least 2.0. If this condition is not met and the student received three consecutive warnings (two semesters of probation), the student may then be dismissed from his/her study program.

Handling Prerequisites
Under normal circumstances, all students are registered automatically through the university registration system, EduGate. Each student is automatically enrolled in all level courses he/she is allowed to register for. The system may allow the student to make changes to his/her registration under the condition that no violations to any of the prerequisites, no conflicts between courses timetables, and the student does not exceed the allowed number of credit

load per semester. This process is handled automatically through the university's registration system without any manual interference.

The student is allowed to make changes to his/her schedule by either adding or dropping courses only for up to the end of the first week of study. Course withdrawals, however, are allowed before the end of the tenth week of study of the semester. A student is allowed to withdraw for only one course per semester under the condition that he/she does not withdraw for more than three courses during his/her full study plan. A student can also withdraw the whole semester, usually no later than the end of the twelfth week of study pending department head and vice-dean for academic affairs approvals.

Transfer from a University to Another
The student may transfer from other institutions or universities into College of Computer and Information Sciences at Majmaah University after meeting the following conditions:

Article Forty Two
A student's transfer from another university may be accepted according to the following regulations:

1. The student must have studied at a recognized university.
2. He must not be dismissed from the university he referred from for disciplinary reasons.
3. Terms of transfer, determined by the University Council, must be applicable to him.

The Executive Rule of Majmaah University:
A student's transfer from another university may be accepted according to the following regulations:

1. He should have an academic record with a cumulative average of at least one semester and studied in a college or university recognized by the Ministry of Higher Education .
2. He should not have failed in the GPA.
3. He should not have been dismissed from the university for disciplinary reasons.
4. Transfer should not be from the lower academic degree to the higher.
5. Conditions of transfer , determined by the college board, must be applicable to him.
6. Credit hours required from the transferred student to study, must not be less than 60% of the total credit hours for obtaining the Bachelor degree from Majmaah University.
7. The total period spent by the student from the university he transfers from and the remaining period for him in Majmaah University should not be more than the average period between the minimum and the maximum for remaining in the college.
8. Procedures of transfer must be completed before the end of the first week from the beginning of the semester, or the beginning of the year for the colleges that adopt the annual system. If the procedures exceed this period, transfer shall be effective next semester.
9. Transfer must be written on the student's academic record.

Article Forty Three

The college board equates the courses the student studies in another university, according to a recommendation of the Department Board that provides the courses. The courses equated are written on the student's record. They are not included in the calculation of cumulative GPA.

The Executive Rule of Majmaah University:
The concerned college board equates the courses the student passes in another university, according to a recommendation of the Department Board that gives the courses, provided the equated courses should not exceed 40% of the credit hours of the syllabus of the specialization transferred to. The courses equated are written on the student's record. They are not included in the calculation of cumulative GPA, on condition that the content of the course the student passes is equivalent to the course(s) to be equated.

Article Forty Four
If it appears after the student's transfer, that he had previously been dismissed for disciplinary reasons, his registration shall be deemed canceled from the date of acceptance of his transfer to the university.

Article Forty Five
A student may be transferred in any semester, from a university to another, according to the procedures and declared schedules in the university transferred to, in the light of the general guidelines for transfer.

Transfer from College to another within the University
Article Forty Six
The student may transfer from one college to another within the university in accordance with the regulation approved by the University Council.

The Executive Rule of Majmaah University:
Firstly, transfer of a student from one college to another within the university is done according to the following regulations:

1. Acceptance of the students by deanship of the college is according to the regulations set by the college board.
2. A student must not have spent more than four semesters, provided that the preparatory programs such as extensive language courses are not counted within that period.
3. Procedures of transfer should be completed within the first week of the semester or the academic year, for the colleges that adopt the annual system. If the procedures exceed this period, transfer shall be effective the following semester.
4. Transfer shall not be allowed except after a student spends at least one semester in the college he wishes to transfer from.
5. A student is allowed to transfer once during his university studies, or twice if one of these is the preparatory year or the intensive course of English.
6. A student transferred to the preparatory year or the intensive course, will be returned to his previous department if he does not pass, only once.
7. Specialization after passing the preparatory programs is not counted within the transfer movements.

Secondly, transfer of a student from the qualifying programs to the corresponding college that awards Bachelor programs within the university is according to the following regulations:

1. No student may transfer from BA to one of the qualifying programs.
2. A student is allowed to move to the corresponding college, if he finishes all the courses of the qualifying program, with the Grade Point Average 2/5 (two out of five).
3. If a student completes 50% of the total credit hours of the qualifying program, with a Grade Point Average of 4 to 5, or more, he can transfer to the corresponding college.
4. If a student completes the qualifying program but six hours remain for him, he may transfer to the corresponding college, provided, his Grade Point Average is not less than 2.5 to 5.

Article Forty seven
All the previously studied courses shall be written in the academic record of the student who transfers from a college to another. This includes Grade Point Averages, and Cumulative Grade Point Averages, during his study in the university.

Transfer from Specialization to Another
Article Forty Eight
On the approval of the dean, a student may transfer from one specialization to another within the college, according to the regulations set by the University Council.

The Executive Rule of Majmaah University:
1. A student may transfer from one specialization to another within the college after the approval of the dean of the college, according to regulations set by the College Board.
2. The remaining period for him in the university should be enough to finish graduation requirements.
3. Transfer procedures should be completed within the first week of the beginning of the semester or year for the colleges that adopt the annual system. If procedures exceed this period, transfer will be effective the following semester.
4. A student is allowed to transfer once during his university study.

Article Forty Nine
All the previously studied courses shall be written in the academic record of the student who transfers from one specialization to another. This includes, Grade Point Averages, and Cumulative Grade Point Averages, during his study in the university.

Transfer of Students within the College
The student may transfer from one major to another major inside the college after obtaining the acceptance of department to which the student is transferring to and the acceptance of the College Council. The transferring student maintains the previous credits, grades, and GPA for completed courses at his/her previous major in his/her academic record.

Transferring Credits
The College Council equates the courses of the student passes in another university, according to a recommendation of the Department Council that gives the courses, provided the equated courses should not exceed 40% of the credit hours of the syllabus of the specialization transferred to. The courses equated are written on the student's record. They

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are not included in the calculation of cumulative GPA, on condition that the content of the course the student passes is equivalent to the course(s) to be equated.

If it appears that after the student's transfer, that he/she had previously been dismissed for disciplinary reasons, his/her registration shall be deemed canceled from the date of acceptance of his/her transfer to the university.

A student may be transferred in any semester, from a university to another, according to the procedures and declared schedules in the university transferred to, in the light of the general guidelines for transfer.

Students who want to study courses in other universities must do the following:
- Fill in a course transfer form and submit it to the vice-dean for academic affairs.
- The vice-dean consults the convener of the course, or failing that, the most recent faculty member to teach the course.
- The faculty member compares the syllabus of the transfer course and the departmental course syllabus, and determines if the course is equivalent based on the syllabus and credits.
- The department head approves the equivalency and signs the form.
- The student should then get the approval of the vice dean.
- The student hands in the form to university registrar office and gets an official acceptance letter to study the course at the specified university.
- After studying the course, the student should get an official completion letter and the transcript from the registrar office of the university where the transfer course was completed.

Finally, the student should hand the official completion letter to the Majmaah registrar office.

Recruitment-

Administrative and technical staff members are recruited based on the college's nomination. The majority of faculty and staff employment processes are centrally managed by the Deanship of Faculty and Staff Affairs, which also provides all personnel services for the university.

Currently, college and department administrative and technical staff members are not adequate but the process of hiring new staff is under study. All college staff members are encouraged to regularly attend training and professional development workshops held either within the university, by the Deanship of Quality and Skills Development, or outside the university.

Faculty Hiring -The recruitment processes are unified across the university. Job announcements and interviews are performed at the department level. The Dean presents in the college council decisions and recommendations and the college final recommendation is then forwarded to the Vice Rector for Graduate Studies and Scientific Research for final decisions. Positions are publicly advertised in local newspapers, the university website, and international newspapers and websites. The advertisements include job title, means to apply and selection criteria. For hiring tenure teaching assistants and lecturers, committees at the department level write their recommendations, which must be approved by the department council, then by the college council, and then the final decision is made by the Committee of Teaching Assistants and Lecturers headed by the Vice Rector for Graduate Studies and Scientific Research. The same procedures are followed for the recruitment of assistant professors and higher academic ranks, except that the final decision of employment is made

at the university scientific council, and then to the Deanship of Faculty and Staff to issue the formal decision.

H. Program Quality Assurance

1. Program Quality Assurance System
Provide online link to quality assurance manual

Student outcomes (SOs) or Program Learning Outcomes(PLOs) are broad statements describing the characteristics that computer science graduates should have acquired on the day of their graduation, and their assessment and revision is managed by the quality assurance committee. Student outcomes are the guiding principles upon which the program is based, and consequently their revision requires feedback from the program's constituencies.

Figure 1.1 illustrates the student outcomes revision process. Student outcomes are assessed and revised using data from course learning outcomes achievement, surveys of alumni and employers, and through discussion and feedback at the department council (faculty), and EAB meetings (alumni, employers, graduate schools). The revision process is a loop consisting of the following steps:

1. The quality assurance committee gathers data from course learning outcomes achievement, surveys and discussions.
2. The quality assurance committee uses the data to propose changes to the student outcomes.
3. The department council discusses the changes to the student outcomes, and approves or rejects them.
4. The quality assurance committee and curriculum committee propose changes to the program (e.g., curriculum, data collection instruments, etc.) that may be needed due to the revision of the student outcomes.
5. The department council discusses the changes to the program, and approves or rejects them.
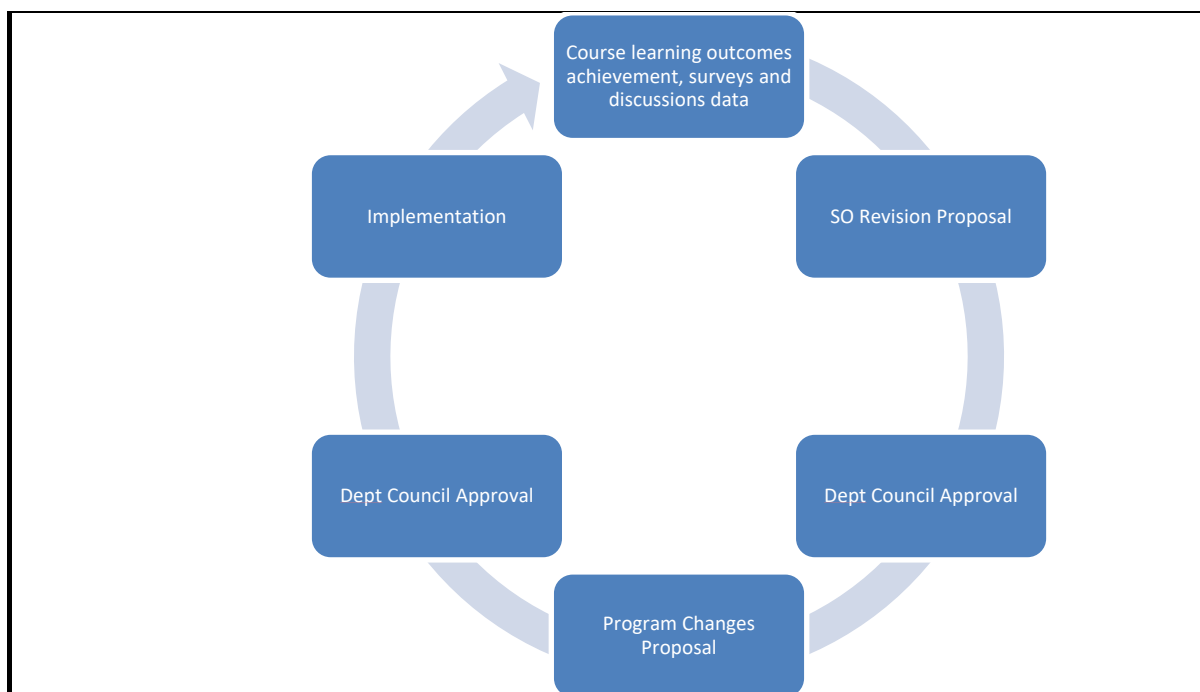6. The changes to the student outcomes and program are implemented.

Figure 1.1 Student Outcomes Revision Process

2. Program Quality Monitoring Procedures

- The program is reviewed by External Advisory Board which include industry Experts
- The curriculum development and planning committee modifies the program based on the recommendation of the experts.
- Each faculty member or group of faculty members will review their courses and the program and provide curriculum development and planning committee with his/her suggestions.
- The curriculum development and planning committee presents its proposal for modification to Department council for approval.

3. Arrangements to Monitor Quality of Courses Taught by other Departments.

- Monitoring by Academic Development Unit CCIS.
- Reviewing faculty member course evaluation for all courses each semester.
- Reviewing student course evaluations for all courses each semester.
- Student interviews.
- Course file evaluation of the faculty members.

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

- **Vice Dean Academic Affairs**- The College Vice dean for academic affairs essentially focuses on the academic and educational affairs in the college (including male and female sections). Vice dean for academic affairs is responsible for supervising the academic and educational performance in the college.

Roles in Academic affairs

- Supervising the academic and educational performance in the college.
- Supervising student cultural, social and sport activities.
- Supervising the mission of students' rights in the advising council.
- Supervising field training.
- Supervising academic advising.
- Studying and following up of student affairs.

- **The Department Chair(HOD)** is appointed by the university rector with the recommendation of dean of the college for two renewable years.
- Head of Department (HOD) is responsible and accountable for setting and advancing the academic strategy of the Department in line with Faculty and University strategic plans and direction. HOD Chairs the Departmental Council and contribute to the overall leadership and management of the Faculty, also develop and sustain appropriate structures for management, consultation, decision-making and communication with staff and students.

- Course Conveners – Appointed by **Vice Dean Academic Affairs, Course Convener will be senior faculty among all teaching the same course in different section.**
  Course evaluation is a continuous process in which course is evaluated by faculty members and course conveners after mid exam as well as after final Exam.
  After mid examination, faculty members of the same courses fill the Course Evaluation Form 1 and will be submitted to the course convener with learning barriers and issues along with action plan. In addition, faculty members submit Form 2 (survey form) filled by students to the Course Conveners. After receiving both the forms course conveners analyze the course results and student outcomes (SOs) and communicate to Academic Development Unit through Form 3

- Quality Unit-To monitor the quality of teaching and learning
- Academic Development Unit-
  Academic development unit prepares a consolidated report and submit it to measurement and evaluation unit. Measurement unit prepare a report regarding student performance, student's outcome(SOs) achieved and submit it to Quality Unit. Quality unit send the report to Department. The issues raised by the Quality unit will be discussed in department council meeting.

5. Arrangements to Apply the Institutional Regulations Governing the Educational and Research Partnerships (if any).

Career and personal development at the college and the university provide faculty with opportunities to build productive and satisfying careers while contributing to the achievement of the university's mission. The university has established a Deanship of Quality and Skills Development which plays a major role not only in organizing the workshops and seminars, but also in identifying the staff needs and setting strategies to meet those needs.

MU tenure faculty members are eligible for one semester sabbatical leave every three years or one year every five years. Applications for sabbatical leave (research plan and its budget) should be submitted to the department 4-6 months prior to the end of the academic year for approval by the department council, the college council and then by the university scientific council. Requests are granted based on a sound application, as well as availability of faculty for courses to be fully covered. Faculty members should achieve at least one piece of research during their sabbatical leave.

6. Assessment Plan for Program Learning Outcomes (PLOs), and Mechanisms of Using its Results in the Development Processes

At the end of every semester PLO s will be measured and the actions required based on results will be incorporated in the next semester.

7. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness of Teaching & Assessment	Students	Exams and Survey	Beginning of semesters, Mid of semester and End of Semester
Availability of Learning Resources	Students	Exit Survey	End of every semester
Leadership	Assessment	Graduation Project Presentation	End of Level 11 and Level 12
Course Evaluation	Students	Exit Survey	End of Semester
Graduation Students Evaluation	Students	Graduation Project Survey	End of Semester

Evaluation Areas/Aspects (e.g., leadership, effectiveness of teaching & assessment, learning resources, partnerships, etc.)
Evaluation Sources (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others (specify)
Evaluation Methods (e.g., Surveys, interviews, visits, etc.)
Evaluation Time (e.g., beginning of semesters, end of academic year, etc.)

8. Program KPIs*

The period to achieve the target (2022-23) year.

No.	KPI Code	KPIs	Key Performance Indicators	Target	Measurement Methods	Measurement Time
1	KPI-P-01	Mission & Objectives	Percentage of achieved indicators of the program operational plan objectives	90%	Surveys	End of Year
2	KPI-P-02	Teaching & Learning	Students' Evaluation of quality of learning experience in the program	90%	Survey	End of Semester
3	KPI-P-03		Students' evaluation of the quality of the courses	90%		End of Semester
4	KPI-P-04		Completion rate	100%	Results	End of Semester

5	KPI-P-05		First-year students retention rate	100%	Results	End of Semester
6	KPI-P-06		Students' performance in the professional and/or national examinations	80%	Certification Exam Result	End of Semester
7	KPI-P-07		Graduates' employability and enrolment in postgraduate programs	60%	Placement Record recommendations.	End of Year
8	KPI-P-08		Average number of students in the class	20	Average number of students in the class	End of Year
9	KPI-P-09		Employers' evaluation of the program graduates' proficiency	80%	Survey	End of Year
10	KPI-P-10	Students	Students' satisfaction with the offered services	90%	Survey	End of Semester
11	KPI-P-11		Ratio of students to teaching staff	20:1	Ratio - Statistics	Beginning of semesters
12	KPI-P-12		Percentage of teaching staff distribution	50%-50%	Ratio - Statistics	Beginning of semesters
13	KPI-P-13		Proportion of teaching staff leaving the program	Nil	Ratio - Statistics	End of Year
14	KPI-P-14		Percentage of publications of faculty members	100%	Publication Statistics	End of Year

15	KPI-P-15		Rate of published research per faculty member	1	Publication Statistics	End of Year
16	KPI-P-16		Citations rate in refereed journals per faculty member	4	Citations rate	End of Year
17	KPI-P-17	Learning Resources, Facilities, and Equipment	Satisfaction of beneficiaries with the learning resources	100%	Survey	End of Semester

* including KPIs required by NCAAA

I. Specification Approval Data

Council / Committee	3
Reference No.	1
Date	3/1/1444 H