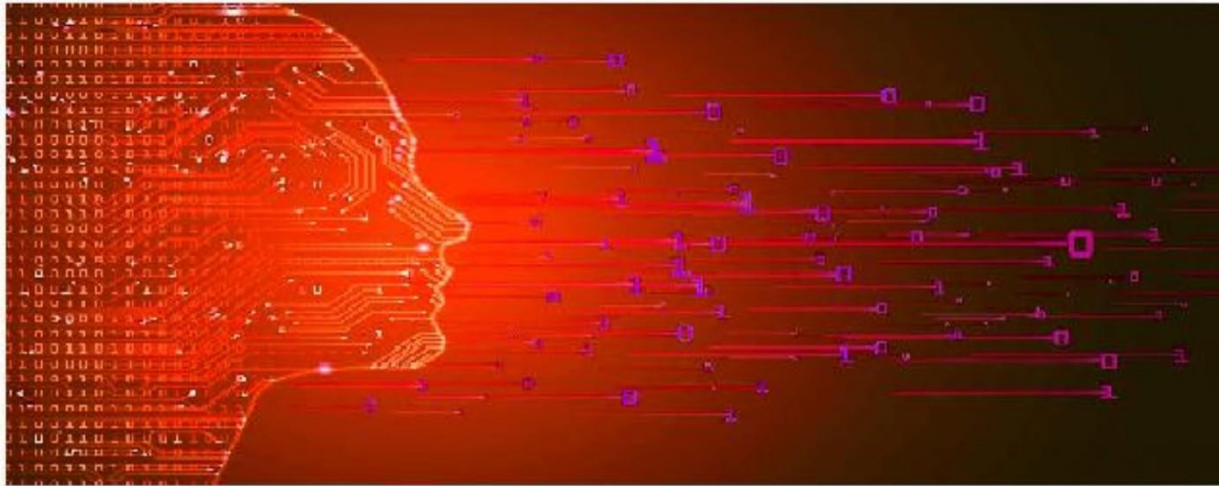




# DEPARTMENT HANDBOOK



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KINGDOM OF SAUDI ARABIA



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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

*In the Name of Allah, the Most Merciful  
Most Gracious*

## **Declaration**

This handbook is applicable to all the programs being offered by Department of Computer, College of Computer Science and Information Technology;

**Prepared by:**

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**Revised Version Approved by:**  
**Department Council**  
**Dated:**

**Date of Implementation**  
**Version No: 03 15/11/2020**  
**Amendment No :04**

**DEPARTMENT HANDBOOK**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**COLLEGE OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY**  
**JAZAN UNIVERSITY**

## 1. MESSAGE FROM THE HEAD OF THE DEPARTMENT



Welcome to the Department of Computer Science, College of Computer Science & Information Technology, Jazan University. Vision of the department is to be recognized for imparting quality education, conducting research, serve the industry and community for the betterment of the nation. Department of Computer Science is committed to provide quality education and focus not only on technical knowledge but on empowering our graduates with skill

to be at the forefront of our nation's growth. We prepare students for current trends of the job market and enhance student skills through collaborative student centric teaching and learning process. Majority of courses in our department have laboratory components, which will deepen their understanding by allowing them to be exposed to theory and practice. The students exhibit their learning through mini projects and final year projects.

In order to provide real-time learning, the department is fully furnished with laboratories equipped with the latest tools and technologies. Our Department has a team of highly experienced and motivated faculty members who are ready to impart quality education and train the young minds. Our graduates are highly recruited within government agencies, and private industry.

**Dr. Mohammed Abdul Hameed**  
**Head**  
**Department of Computer Science**

## 2. INTRODUCTION

### JAZAN UNIVERSITY

Jazan University was established by royal decree no. 6616 /M B dated 19-06-2005 (12/5/1426 AH). The university is the result of the merger of many colleges, which were created and supervised by King Abdul Aziz University and King Khalid University. The colleges of Medicine, Engineering, Computer Science and Information Systems and the Community College formed the nucleus of the university.

Then, the Teachers College, established in 1401 AH (1981 AD), and the Education Colleges for Girls that were established in 1412 AH (1992 AD). Existing colleges in the region, and other colleges that continue their development were added to it, to reach the number of colleges at the end of the year 1432 AH-2011AD.

Four (4) university agencies were established at the university, and 9 (9) support deanships. Other colleges established subsequently were an addition to the university to bring the total number of colleges at the end of 1432H (2011) to 26. Aside from these, four deputyships for the university and nine support deanships were set up.

A big site reaching 9 million square meters in area on the Red Sea coast north of Jazan city was allocated for the University campus. King Abdullah, Custodian of the Two Holy Mosques laid the foundation stone for the University campus on 14/10/1427H (15/11/2006G). Several projects in the campus have been completed, several others are about to be completed while many others are still being carried out.

### UNIVERSITY FACULTIES / COLLEGES

Jazan University has 26 colleges. Of these, 25 colleges award bachelor's degrees and one college awards diplomas. The colleges and their departments are as follows:

1. Faculty of Medicine
2. Faculty of Dentistry
3. Faculty of Pharmacy
4. Faculty of Applied Medical Sciences
5. Faculty of Science
6. Faculty of Public Health and Tropical Medicine
7. College of Engineering

8. Faculty of Business Administration
9. Faculty of Education
10. Faculty of Computer Sciences and Information Systems
11. Faculty of Sharia and law
12. Faculty of Arts and Humanities
13. Faculty of Architecture and Design
14. Community College
15. College of Applied Industrial Technology (CAIT)
16. University College Abo Arish
17. University College Sabya
18. Faculty of Science and Arts in Darb
19. Faculty of Science and Arts in Farasan
20. Faculty of Science and Arts in Samtah
21. Faculty of Science and Arts in Al-Aarda
22. Faculty of Science and Arts in Al-Dayir.
23. Community College.

This is in addition to other colleges that have been restructured. These include the Teachers' College, College of Education for Women – Science, College of Education for Women – Arts, Female Teachers' College, College of Education in Farasan, and Community College for Women.

## **SUPPORT DEANSHIPS OF THE UNIVERSITY**

There are nine support deanships in Jazan University, and they are as follows:

- Deanship of Scientific Research
- Deanship of Graduate Studies
- Deanship of Academic Development
- Deanship of Preparatory Year
- Deanship of Admission and Registration
- Deanship of e-Learning and Distance Learning
- Deanship of Students' Affairs
- Deanship of Library Affairs
- Deanship of Community Service and Continued Education

### **University's Vision:**

Jazan University will be a gateway to the future for Jazan Province and the Kingdom, recognized nationally and internationally for academic excellence, competent graduates, high impact research, and service that deliver social and economic impact to the region and the world

### **University's Mission:**

Achieve academic excellence and prepare graduates to become regional and national leaders in business, industry, health, education, and government.

Serve the community by addressing its problems and supporting its social and economic development.

Produce internationally recognized research and new knowledge that meet the needs of Jazan Province, the Kingdom, and the world.

### **ABOUT THE COLLEGE OF COMPUTER SCIENCE & IT**

The College was established according to the approval of His Majesty the King, No. 7 / B / 24 232 dated 11/5/1425 H. It began under the umbrella of King Khalid University, the Dean of the College at that time was Dr. Abdullah Bin Yahya Al-Hussein. The College was separated from King Khalid University and joined Jazan University on 01/12/1427 H. First decision was issued by the appointment of first Dean of the college at the University of Jazan on 04/06/1429 H Dr. Omar Al Mushayt. The College began to admit students in the first semester of the academic year 1426 - 1427H. The number of students admitted in the first semester was 68 students. At the present time the number of students reached 1762, 160 of them being students at the female section. The College started with only two specializations, Information systems and Computer Sciences. The Department of Computer Networks was established at the beginning of the first semester of the academic year 1429/1430 H. The female students section was opened at the beginning of the first semester of the academic year 1431/1432 H with two departments, Information systems and Computer Science.



## **College Vision**

To building a competitive environment in education, research, innovation and entrepreneurship in the field of Computer Science and Information Technology to serve the community.

## **College Mission**

The Mission of the college of Computer Science and Information Technology is to:

- 1 Prepare technologists and skilled graduates for attaining academic excellence in the field of Computer Science and Technology.
- 2 Serve the community by using computing technologies to support social and economic development.
- 3 Produce nationally and internationally recognized research in computing technology.

## **Department of Computer Science**

College of Computer Science and Information Systems was established by the consent of the Royal Decree No. 7 / b / 24 232 as on 11/5/1425 H. At first it was under the patronage of King Khalid University, Abha, later in 1428 was under the guardianship of King Abdul Aziz University. In 12/01/1427, Royal Decree issued for the establishment of Jazan University. Several significant events have marked the university's growth. The first decision to appoint the dean of the college was issued in 04/06/1429 AH.

In 2006, the Computer science department was established. The first curriculum plan for BS Computer Science was developed with 146 credit hours. At that time, the total number of computer laboratory was six. In 2008, the second edition of curriculum plan was developed with the 145 credit hours.

The Computer Science Department at Jazan University, Faculty of Computer Science and Information Systems integrates the study of important theoretical foundations in Computer Science with the study of powerful scientific methodologies that are central to the field, providing excellent preparation for under graduate (B.S.) study in computer science. In addition to offering a full program of core computer science courses, Computer Science Department offers a wide range of courses in areas relevant to advance curriculum, including Cloud Computing, Mobile Computing, Neural Computing, Computer Graphics and Visualization, and Software Engineering. The Computer Science Department is an

active participant in student and staff research in collaboration with University scientific research unit and National level King Abdulla city for Science and Technology (KACST). Currently, the department houses more than 15 specialized computer laboratories including GIS Lab, Computer Vision and Advance AI Lab containing machines running the Linux, Red Hot Unix and Windows version 7 and 8 operating systems. Several on-going research projects within the department offer students and staff, the opportunity to work on real problems both during the academic year and over the summer semester.

Department has well qualified faculty members with sizeable number of Ph.D. holders with specialization in the various fields of Computer Science. Saudi Government is also promoting online application and digital revolution in every aspect of country that will require more and more Computer Science graduates and will result in high employability of passed out students.

### 3. Degree Programs

Departments	Degree Programs(Old)	Duration & Credit Hrs.
Computer Science	Bachelor in Computer Science	5 Year Program Total 145 Cr. Hrs.

Departments	Degree Programs(New)	Duration & Credit Hrs.
Computer Science	Bachelor in Computer Science	5 Year Program Total 160 Cr. Hrs.

### 4. Branches / Locations offering the program:

**Offered in:**

**Campus 1:** Main Campus, Jazan University (For Boys)

**Campus 2:** Female Campus, Academic Campus-1 for Girls, Jazan

**Branch 1:** Department of Computer Science, Sabya Educational College, Sabya

### 5. Rationale for Establishment:

Following are the reason for the establishing the program

### **·Economic Reasons**

- 1) Development of Software industries in the Kingdom of Saudi Arabia.
- 2) Serving the commercial, business, software, hardware and industries.
- 3) Supplying highly qualified software engineers' / computer programmers for research and development laboratories.
- 4) Shortage of qualified Software Engineers and Software Programmers /Developers.
- 5) Predictable demand for Software Engineers due to economic growth in and around the Kingdom.
- 6) Solving the information technology related problems, which pertain to the immediate needs of the country.
- 7) Creating a chance for the students to pursue their higher studies in various domains of computer science.

### **·Social / Cultural Reasons**

- 1) To provide greater opportunity for Saudi peoples to become software engineers and participate in the growth of the Kingdom.
- 2) Safety awareness on Computer hardware and software industries in and around the Kingdom of Saudi Arabia.
- 3) Safety awareness on computer manufacturing industries.
- 4) To provide greater prospect for Saudis to become software engineers and contribute in the growth of the kingdom.
- 5) To provide a good platform for the students who will function in their profession with social awareness and responsibility.
- 6) Understand the ethical, legal, and professional responsibilities in the field of IT, which has a direct impact in the society.

### **·Technological Developments**

- 1) Develop software engineers who can serve the Kingdom by solving the ongoing real-time problems in the country.
- 2) Encourage the establishment of research and development centers in a variety of computer science domains.

- 3) By acquiring advanced degrees, students can determine their research career path.
- 4) Create a software development hub where the outsourcing of work for various concerns can be carried out.
- 5) Graduates will be software professionals, innovators or entrepreneurs engaged in technology development with the state-of-the-art technologies.
- 6) Preparing professionals empowered with the knowledge, skills, values and confidence to take a leadership role in the development of the Kingdom in the field of Computer Science.

## 6. Vision

To be recognized for imparting quality education, conducting research, serve the industry and community for the betterment of the nation.

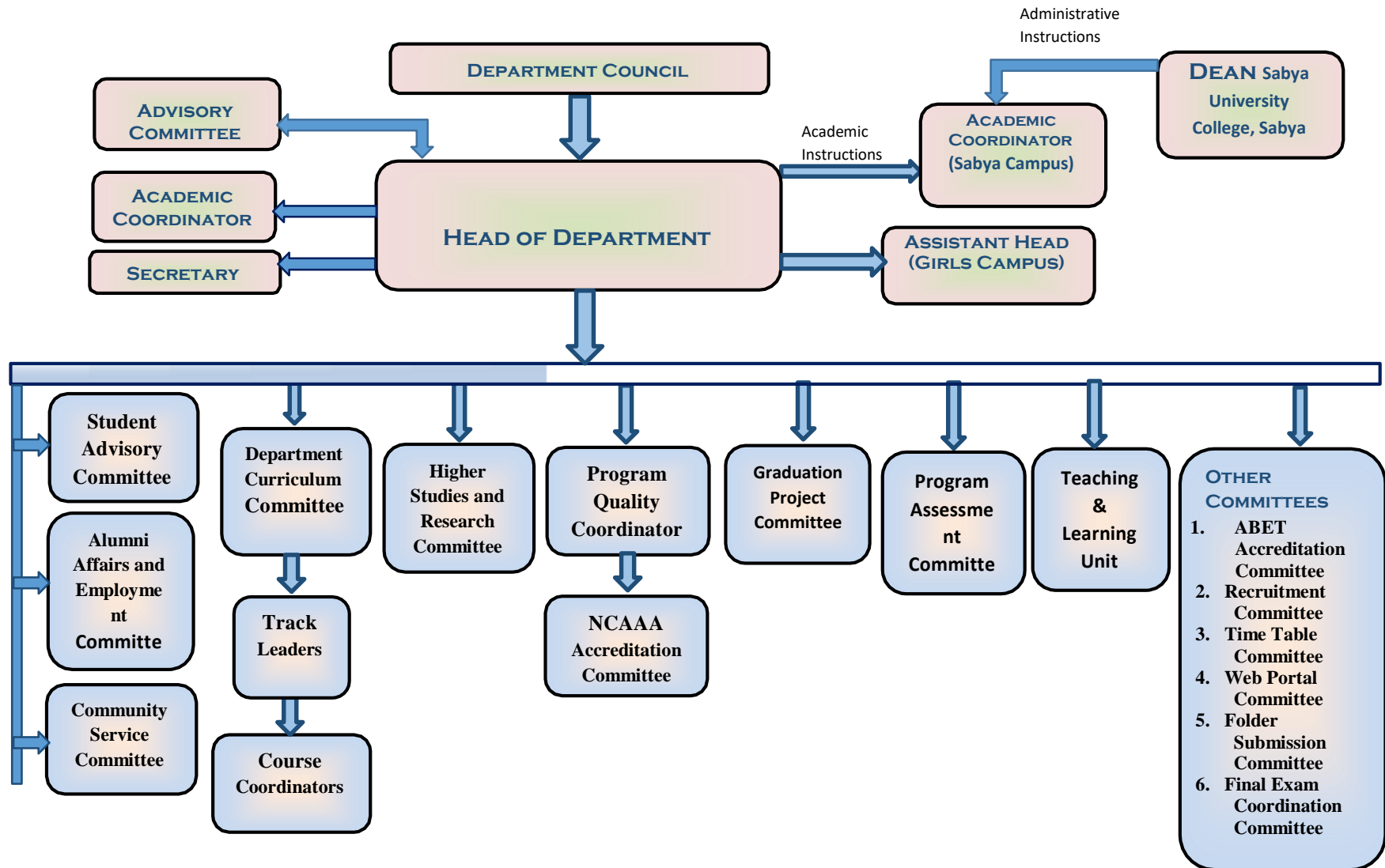
## 7. Mission

The Mission of the BS Computer Science program is to provide best practices of education, research, innovation and entrepreneurship in the field of Computer Science to contribute in building a vibrant society.

## 8. Goals

- Goal 1:** To impart innovative teaching to enrich students with sound computing knowledge by utilizing state of the art infrastructure.
- Goal 2:** To prepare students for the job market by strengthening their problem solving and professional skills.
- Goal 3:** To train students by providing an environment for lifelong learning and entrepreneurship.
- Goal 4:** To support faculty and students in multidisciplinary research.
- Goal 5:** To inculcate students with professional ethics and social responsibilities to contribute in society's economic growth.

## 9. Department Organizational Structure open



## 10. Total Number of Enrolled and Graduate Students

<b>Year</b>	<b>2018-19</b>	<b>2019-20</b>	<b>2020-21</b>
Male Campus	327	410	426
Academic Campus-1 for Girls	924	863	905
Sabya Campus	441	467	366
<b>Total Students</b>	1692	1740	1697

<b>Total Number of Graduated Students</b>			
<b>Year</b>	<b>2018-19</b>	<b>2019-20</b>	<b>2020-21</b>
Male Campus	34	32	35
Academic Campus-1 for Girls	160	141	183
Sabya Campus	38	114	103
<b>Total Students</b>	232	287	321

## 11. BS Computer Science Curriculum Plan (old)

Level	Course Code	Course Title	Required or Elective	* Pre-Requisite Courses	Credit Hours	University, College or Department
<b>Level 1</b>	101CSC-3	Introduction to Computer	R	None	3	University
	103ENGL-6	Intensive English Course 1	R	None	6	College
	100MATH-3	Mathematics	R	None	3	College
	101SLM-2	Islamic Culture I	R	None	2	University
<b>Level 2</b>	011COMP-3	Programming 1	R	None	3	College
	104ENGL-6	Intensive English Course 2	R	103ENGL-6	6	College
	102MATH-3	Matrix Algebra	R	100MATH-3	3	College
	102SLM-2	Islamic Culture II	R	None	2	University
<b>Level 3</b>	101ARB-2	Arabic Language Skills	R	None	2	University
	112COMP-3	Programming 2	R	011COMP-3	3	College
	111INFS-3	Introduction to Information System	R	None	3	College
	201PHYS-4	Principles of Physics	R	None	4	College
	103SLM -2	Islamic Culture III	R	None	2	University
<b>Level 4</b>	102ARB-2	Arabic Writing	R	None	2	University
	151COMP-3	Computational Geometry	R	None	3	Department
	114COMP-3	Programming of Statistics & Probabilities	R	None	3	Department
	201MATH-3	Differentiation & Integration	R	100MATH-3	3	College
	206MATH-3	Discrete Mathematics	R	102MATH-3	3	College
	104SLM-2	Islamic Culture IV	R	None	2	University
<b>Level 5</b>	213CNET-3	Computer Organization & Architecture	R	None	3	College
	213COMP-3	Object Oriented Programming	R	112COMP-3	3	College
	252COMP-3	Data Modeling & Simulation	R	None	3	Department
	221COMP-3	Algorithms & Data Structures 1	R	None	3	College
	221INFS-3	Database Systems 1	R	111INFS-3	3	College
	111CNET-3	Digital Logic	R	None	3	Department
	231COMP-3	Operating System	R	None	3	College

<b>Level 6</b>	222COMP-3	Algorithms & Data Structures 2	R	221COMP-3	3	Department
	241COMP-3	Artificial Intelligence	R	None	3	Department
	241INFS-3	Internet Technology	R	None	3	Department
<b>Level 7</b>	331CNET-3	Computer Networks	R	None	3	College
	315CNET-3	Microprocessor & Assembly Language	R	213CNET-3	3	Department
	323COMP-3	Analysis & Design of Algorithms	R	222COMP-3	3	Department
	**3COMP-3	Elective 1	E	None	3	Department
	324COMP-3	Computer Data Security & Privacy	R	None	3	Department
<b>Level 8</b>	336COMP-3	Computer Graphics	R	None	3	Department
	332COMP-3	Advanced Operating Systems	R	None	3	Department
	390COMP-3	Summer Training	R	None	3	Department
	323INFS-3	Data Warehousing & Data Mining	R	221INFS-3	3	Department
	334INFS-3	Software Engineering	R	None	3	College
	336INFS-3	Human Computer Interaction	R	None	3	Department
<b>Level 9</b>	426CNET-3	Mobile Computing	R	None	3	Department
	**4COMP-3	Elective 2	E	None	3	Department
	433INFS-3	Software Project Management	R	None	3	Department
	443INFS-3	Multimedia Applications	R	None	3	Department
<b>Level 10</b>	433COMP-3	Theory of Compilers	R	None	3	Department
	442COMP-3	Artificial Neural Networks	R	241COMP-3	3	Department
	495COMP-3	Final Project	R	None	3	Department
	452INFS-3	Computer Ethics & Society	R	None	3	College



## ELECTIVE COURSES

LEVEL - 7				LEVEL - 9			
No.	Course Code	Course Name	Credits	No.	Course Code	Course Name	Credits
1	334COMP-3	Operating System Pragmatics	3	1	452COMP-3	Advance Algorithm Design & Analysis	3
2	316COMP-3	Unix & Shell Unix and Programming	3	2	419COMP-3	Web Technology	3
3	353COMP-3	Graph Theory and Application	3	3	471COMP-3	Java Programming	3
4	315COMP-3	Visual Programming	3	4	435COMP-3	Real Time Systems	3
5	326COMP-3	Cryptographic Techniques	3	5	462COMP-3	Computer Vision	3
6	343COMP-3	Fuzzy Logic	3	6	444COMP-3	Genetic Algorithm	3
				7	418COMP-3	Game Programming	3

### 11. BS Computer Science Curriculum Plan (New)

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 1	COMP 111	Introduction to Computing	Required	None	3	College
	MATH 105	Calculus	Required	None	4	College
	ENG 101	English - 1	Required	None	6	Institute
	ARB 102	Arabic Writing	Required	None	2	Institute
	SLM 101	Islamic Culture – 1	Required	None	2	Institute
Level 2	COMP 112	Programming – 1	Required	COMP 111	3	College
	MATH 107	Discrete Mathematics	Required	MATH 105	3	College
	MATH 106	Matrix Algebra	Required	MATH 105	3	College
	ENG 102	English - 2	Required	ENG 101	6	Institute
Level 3	COMP 213	Programming – 2	Required	COMP 112	3	College
	ITEC 211	Database Concepts and Design	Required	None	3	College
	SLM 102	Islamic Culture - 2	Required	None	2	Institute
	PHYS 204	Principles of Physics (1)	Required	None	4	College
	MATH 262	Statistics and Probability	Required	None	3	College
Level 4	COMP 214	Object Oriented Programming	Required	COMP 213	3	College
	COMP 231	Digital Design	Required	None	3	Department
	ITEC 251	Data Communication and Computer Networks	Required	None	3	Department
	PHYS 205	Principles of Physics (2)	Required	PHYS 204	3	Department
	ITEC 212	Database Management System	Required	ITEC 211	3	Department

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 5	COMP 321	Data Structures and Algorithms	Required	COMP 214	3	Department
	COMP 332	Computer Architecture	Required	COMP 231	3	Department
	COMP315	Web Programming	Required	None	3	Department
	ITEC 321	Human Computer Interaction	Required	None	3	Department
	MATH 326	Linear Algebra	Required	MATH 106	3	Department
Level 6	COMP 316	Principles of Programming languages	Required	None	3	Department
	COMP 322	Design and Analysis of Algorithm	Required	COMP 321	3	Department
	COMP 323	Computer Security and Privacy	Required	ITEC 251	3	Department
	COMP 333	Operating System	Required	None	3	Department
	COMP 371	Software Engineering	Required	None	3	College
	COMP 324	Graph Theory and Applications	Required	None	3	Department
Level 7	COMP 441	Artificial Intelligence	Required	None	3	Department
	COMP 434	Parallel and Distributed Computing	Required	COMP 333	3	Department
	COMP 452	Cloud Computing	Required	None	3	Department
	COMP 417	Enterprise Architecture	Required	None	3	Department
	COMP 453	Data Science	Required	None	3	Department
Level 8	COMP 4**	Elective – 1	Elective	None	3	Department
	COMP 461	Computer Graphics	Required	None	3	Department
	COMP 472	Software Project Management	Required	COMP 371	3	Department
	COMP 451	Data Modeling and Simulation	Required	MATH 262	3	Department
	COMP 454	Data Mining	Required	ITEC 212	3	Department
Summer	COMP 481	Cooperative Training	Required	None	3	College
Level 9	COMP 582	Project Phase - 1	Required	COMP 371	3	College
	COMP 5**	Elective – 2	Elective	COMP 4**	3	Department
	COMP 555	Mobile Computing	Required	None	3	Department
	COMP 525	Cryptography	Required	COMP 323	3	Department
	COMP 593	Seminar	Required	None	1	Department
	COMP 535	Theory of Computation	Required	None	3	Department
Level 10	COMP 583	Project Phase - 2	Required	COMP 582	3	College
	COMP 5**	Elective – 3	Elective	COMP 5**	3	Department
	COMP591	Computer and Professional Ethics	Required	None	2	Department
	COMP 5**	Selected Topics in Computer Science	Required	None	3	Department
	COMP 592	Entrepreneurship and Innovation	Required	None	2	Department
	COMP 556	Internet of Things (IoT)	Required	None	3	Department
<b><u>ELECTIVE KNOWLEDGE DOMAIN COURSES</u></b>						

APPLICATION DEVELOPMENT						
Level 8	COMP 418	Concurrent Programming	Elective	None	3	Program
Level 9	COMP 519	Game Programming	Elective	None	3	Program
Level 10	COMP 510	Mobile Application Development	Elective	None	3	Program

ARTIFICIAL INTELLIGENCE						
Level 8	COMP 442	Machine Learning	Elective	None	3	Program
Level 9	COMP 543	Artificial Neural Network	Elective	None	3	Program
Level 10	COMP 562	Computer Vision	Elective	None	3	Program

CLOUD COMPUTING						
Level 8	COMP 457	Big Data	Elective	None	3	Program
Level 9	COMP 558	Cloud Architecture and Design	Elective	None	3	Program
Level 10	COMP 559	Cloud Management	Elective	None	3	Program

SOFTWARE ENGINEERING						
Level 8	COMP 474	Software Requirements Engineering	Elective	None	3	Program
Level 9	COMP 575	Software Architecture & Design	Elective	None	3	Program
Level 10	COMP 576	Software Testing and Quality Assurance	Elective	None	3	Program

LIST OF COURSES UNDER SELECTED TOPICS						
Level 10	COMP 563	Virtual Reality	Elective	None	3	Program
	COMP 594	Cyber Law & Security Policy	Elective	None	3	Program
	COMP 544	Computational Intelligence	Elective	None	3	Program
	COMP 526	Digital Forensics	Elective	None	3	Program
	COMP 545	Natural Language Processing	Elective	None	3	Program
	COMP 595	Green Computing	Elective	None	3	Program
	COMP 550	Extreme Computing	Elective	None	3	Program
	COMP 556	Soft Computing	Elective	None	3	Program
	COMP 596	Biomedical Computing	Elective	None	3	Program
COMP 527	Ethical Hacking	Elective	None	3	Program	

## 12. Learning Outcomes

Knowledge :	
<b>K1</b>	<b>Demonstrate</b> the sound knowledge of principles of Computing, Science and Mathematics required in the field of Computer Science.
<b>K2</b>	<b>Relate</b> recent trends and current research in the field of Computer Science.
Skills	
<b>S1</b>	<b>Analyze</b> complex computing problems to apply principles of computing and other relevant disciplines to identify solutions.
<b>S2</b>	<b>Evaluate</b> problem-solving strategies to propose a large number of solutions and come up with the best possible solution.
<b>S3</b>	<b>Design and implement</b> computing-based solutions to meet a given set of computing requirements in the context of the program's discipline.
<b>S4</b>	<b>Apply</b> computer science theory and software development fundamentals to produce computing-based solutions.
<b>S5</b>	<b>Communicate</b> effectively in a variety of professional contexts for technical and non-technical audiences.
Values	
<b>V1</b>	<b>Recognize</b> professional and social responsibilities to make informed judgments in computing practices based on legal and ethical principles.
<b>V2</b>	<b>Demonstrate</b> the ability to function effectively as a member or leader of a team engaged in activities appropriate to the field of Computer Science.
<b>V3</b>	<b>Identify</b> the need for and an ability to engage in continuing professional development and entrepreneurship.

## 13. COURSE CATALOGUE

### CS Courses- Brief Description

#### 101-CSC-3 Introduction to Computer

This course introduces the fundamental concepts and features of Computer. It includes the basics of computer hardware, software, input/output devices, computer network, computer user/client, computer architecture, programming, data representation, advantages and applications. This course also covers Python 3 programming language. This is an introductory course designed for any student interested in using computation to enhance their problem-solving abilities. Students will use their problem-solving abilities to implement basic programs in Python.

#### 100 MATH-3 Mathematics

**Basic Algebraic Operations:** The set of real numbers, Operation on real numbers, Exponents and Radicals, Integer exponents, Roots of real numbers, Rational exponents and radicals, Simplifying radicals, Polynomials and Basic operations, Factoring

**Equations and Inequalities:** Linear equations, Linear inequalities, Absolute value in equations and inequalities, Complex Numbers, Quadratic equation and application by ( factoring -quadratic formula).

**Graphs:** Cartesian coordinate systems, (reflection-symmetry), Distance in the plane, (distance-midpoint-circle), Equation of a line, Slope, Special forms of line, Parallel and perpendicular lines

**Functions:** Definition of function, Domain, Even and odd function, Composition

**System of Linear Equations:** Solving System of Linear Equations (Graphical, Substitution and Elimination)

**Matrix:** Matrix operations (Equality, Addition Subtraction and Multiplication)

**System of Linear Equation by Gauss-Jordan method**

#### 011 COMP-3 Programming – I

This knowledge area consists of those skills and concepts that are essential to programming practice independent of the underlying paradigm and programming language for the beginners. Specific topics covered include: An Overview of Computers and Programming Languages, Basic Elements of Java, Variables, Types, Operators, Branching Mechanism, Iteration and loops, Methods, and Arrays.

#### 102 MATH-3 Matrix Algebra

**Concept of matrix,** rank of matrix, types of matrices, basic algebraic operations on matrices, inverse of square matrix  $A_{2 \times 2}$  and  $A_{3 \times 3}$ .

**Determinants** and their properties and methods of calculation.

**Linear equation** system homogenies and non-homogenies.

**Solving methods Linear equation systems:** Gauss method, simple row method, Cramer's Rule.

**Eigenvalues and Eigenvectors of matrices.**

**Linear Space and subspace.**

*PREREQ: 100 MATH-3 Mathematics*

### **112 COMP-3 Programming-II**

This course continues the coverage of the Programming I using the Java language. The concepts of object-oriented programming and design will be introduced. Topics include the concepts of Class and object, methods, overloading, constructors, recursion, single dimensional and multidimensional arrays, inheritance and polymorphism, exception and handling. , files inputs /outputs and interfaces with inner classes.

*PREREQ: 011-COMP-3 Programming-I*

### **111 INFS-3 Introduction to Information Systems**

This course aims to introduce students the types of careers available in information systems. Identify the role of the essential hardware and software components of a computer system, key issues and trends that have an impact on organizations and individuals. Explore data management concepts, terms, features and applications of popular end-user database management systems. Introduce the telecommunications components, networks, describe their functions, and services. Identify e-commerce types, it's applications and the basic activities common to all TPSs. Discuss different artificial intelligence characteristics and applications. Explain the types of computer crimes, preventive measures and privacy issues in information systems and the internet.

### **201 PHYS-4 Principles of Physics**

The course is a fundamental course in mechanics, properties of matter, electricity and sound. As an application to the theoretical part, there is an experimental part contains several experiments.

### **151 COMP-3 Computational Geometry**

The course begins by introducing the fundamentals of computational geometry as a new tool for modeling and designing algorithms, the application of the computational geometry in many different areas like geology and biology is also introduced. Graph theory is introduced in the next chapter including representing graphs, graph isomorphism, Euler graph, Hamilton path, shortest distance problems, adjacency matrix and distance matrix. The theory of trees is covered including binary search tree algorithm, decision tree and game tree. Tree traversal and spanning tree are also covered in the chapter.

### **114 COMP-3 Programming in Statistics & Probability**

This course provides an elementary introduction to statistics and probability with applications. This course also covers several topics specifically, basic definitions, graphs, measure of central tendency, measure of dispersion, theory of probability, random variables, probability distributions, correlation and linear regression.

### **201 MATH-3 Differentiation & Integration/Calculus**

**The functions:** Definition, Types of functions, domain of the functions, graph of functions, composite functions, different properties of functions, inverse function.

**Limits and Continuity:** Limit by definition, theorems, limits and continuity of trigonometric functions.

**Derivatives of Functions:** Techniques of differentiation, derivative rules, chain rule, implicit and parametric differentiation, higher order derivatives.

**Applications of Differentiation:** The absolute, local maximum and minimum values of a function, Rolle's theorem, Mean Value theorem, critical points, increasing and decreasing functions, concavity and convexity, inflexion points, vertical and horizontal asymptotes and graph of curves.

*PREREQ: 100 MATH-3 Mathematics*

### **206 MATH-3 Discrete Mathematics**

**Mathematical logic:** Propositional logic and propositional equivalence

**Basic structures:** Function of integers

**Basics of counting:** Permutation and combinations, binomial coefficients, generalized permutation and combinations

**Advanced counting techniques:** Recurrence relation, solving linear recurrence relation and generating functions

**Graphs:** Digraphs and undirected graphs and representing graphs

**Trees:** Types of trees

**Boolean algebra:** Boolean functions, representing Boolean functions and logic gates

*PREREQ: 102 MATH-3 Matrix Algebra*

### **213 CNET-3 Computer Organization and Architecture**

This course is about the structure and basic function of computers. Its purpose is to present, as clearly and completely as possible, the nature and characteristics of modern-day computer systems. This course cover all aspects of computer, from the underlying integrated circuit technology used to construct computer components, to the increasing use

of parallel organization concepts. This course also focuses on different elements of Computer Organization and Major components which include processor, memory, I/O, control unit, registers, ALU, and instruction execution unit. It also discusses control signals for the operation and coordination of all processor components.

### **213 COMP-3 Object-oriented Programming**

This course provides the fundamental concepts of object-oriented design and implementation of software systems. The list of topics includes the fundamental concepts of classes, objects, methods, object orientation techniques such as abstraction and modularization, code coupling and refactoring, encapsulation, inheritance/subtyping and polymorphism, abstract data types, and defensive programming. Students will acquire basic knowledge on how to translate problem statement into an object-oriented software that is easy to maintain (change a feature, remove a feature, fix a bug etc.) and extend.

*PREREQ: 112 COMP-3 Programming II*

### **252 COMP-3 Data Modeling and Simulation**

This course provides an overview of models and simulations and of modeling and simulation techniques. Techniques include time-driven, event-driven dynamic models/simulations and Monte Carlo Simulation. Classification of models: discrete or continuous, stochastic or deterministic, static or dynamic. The course also provide thorough understanding of random number generation, Queuing models, Simulation of queuing systems, inventory systems input modeling and verification & validation of simulation models.

### **221 COMP-3 Algorithms & Data Structures-I**

This course focuses on the study and implementation of linear Data Structures-Arrays, Stacks, Queue, and Linked List. The course gives the introduction to asymptotic complexity and performance measurement of simple algorithms. The topic includes the concepts of Recursion, implementation and analysis of Sorting algorithms-Bubble Sort, Insertion Sort, Selection Sort and Searching algorithms- Linear Search, Binary Search.

### **221 INFS-3 Database Systems-I**

This course aims to discuss the basic concepts and designs of the database. It covers topics such as database system architecture, data model, levels of abstraction, data independence, and concurrency control. It focuses on how to design databases for given problems, and how to use database effectively, including ER modelling, key and participation constraints, weak entities, class hierarchies, aggregation and conceptual DB design using the ER model. Relational model: creating and modifying relation using query language, enforcing



integrity constraints, ER to relational and view. Schema refinement and normal forms: Functional dependencies, reasoning about functional dependencies, normal forms, decompositions and normalization. Relational Queries: Relation algebra operation and commercial query languages. Students will be trained on one of the software tools: Oracle, Sybase, and DB2.

*PREREQ: 111 INFS-3 Introduction to Information Systems*

### **111 CNET-3 Digital Logic**

This course presents the various binary systems suitable for representing information in digital systems and binary codes are illustrated. It introduces the basic postulates of Boolean algebra and shows the correlation between Boolean expressions and their corresponding logic diagrams. It covers the map method for simplifying Boolean expressions. The map method is also used to simplify digital circuits constructed with AND-OR, NAND or NOR gates. The procedures for the analysis and design of Combinational & Sequential circuits. It deals with various sequential circuit components such as registers, shift registers and counters with memory circuits.

### **231 COMP-3 Operating Systems**

This course introduces a detailed description about operating system objectives, functions and core concepts. Topics include operating system principles, file management systems, memory management, processes and threads, scheduling algorithms and deadlocks.

### **222 COMP-3 Algorithm and Data Structures- II**

The course teaches basic techniques for data abstractions, access algorithms, and manipulation of the abstract structure, as well as an introduction to complexity analysis of space and time allocation in implementing the algorithms. The topics covered are: Abstract Data Type Concept, Linear Data Model: Arrays and Dynamic Lists, Hierarchical Data Model, Binary Tree, Heap, Binary Search Tree, AVL-Tree, Graph Model, Hashing

*PREREQ: 221 COMP-3 Algorithms & Data Structures-I*

### **241 COMP-3 Artificial Intelligence**

This course offers basic concepts of the intelligence, innovations, achievements and advanced development in the areas of AI. It covers modern techniques for computers to represent task-relevant information and intelligent decisions system, solving problems by searching towards the achievement of goals. It covers some advanced topics namely Planning, Learning, Robotics and Multi-Agent Systems basics.

### **241 INFS-3 Internet Technology**

This course introduces World Wide Web Consortium (W3C) standard markup language and services of the Internet. Topics include creating web pages using HTML, CSS, and

integrating JavaScript into site structure, Introducing PHP to develop dynamic web sites and other related topics, and emphasizes the important role standards play in Web Site development. Upon completion, students should be able to deploy a hand-coded website created with mark-up and scripting languages.

### **331 CNET-3 Computer Networks**

This Course introduces the fundamentals of Computer Network. It is based around the TCP/IP Reference Model, and explains the working and protocols of upper two layers (Applications and Transport). The course also discusses the bottom three (Physical, Data Link and Network) layers of the model with the emphasis on routing algorithms, error detection, multiple access, link layer protocols, IEEE 802.3 Ethernet, Switching, Bridging, Media and Signal, data encoding and wireless network.

### **315 CNET-3 Microprocessor & Assembly Language**

The purpose of this course is to teach students the fundamentals of microprocessor and microcomputer systems. The student will be able to incorporate these concepts into their electronic designs for other courses where control can be achieved via a microprocessor/controller implementation. Topics include number system conversions, Logic devices, ALU and Memory, Microcomputer architecture, Microprocessor Evolutions, 8086 Microprocessor Architecture, 8086 Signals and Pin configuration, addressing modes, 8086 Instruction set, Assembly language programming, Interrupt handling, Types of Interrupts, 8259 Priority Interrupt Controller. Laboratory exercises will be based on the microprocessor (Intel 8086).

*PREREQ: 213 CNET-3 Computer Organization and Architecture*

### **315 COMP-3 Visual Programming**

This course introduces the .Net framework and Visual C# language basic concepts (Statements, Exceptions, Methods, Arrays, Class, Objects, Interface, and Namespaces) to develop windows applications. This course also covers C#'s event driven programming concepts, windows forms, controls, multithreading, and data handling. Also introduces the web application development with ASP.NET.

### **323 COMP-3 Analysis and Design of Algorithms**

This course provides to the students a techniques for designing and analyzing algorithms such as brute-force and divide-and-conquer. They acquire some understanding on design techniques and algorithms that address an important set of well-defined problems: DFS and BFS; shortest-path algorithms (Dijkstra's and Floyd's algorithms); transitive closure (Floyd's algorithm); minimum spanning tree (Prim's and Kruskal's algorithms); topological sort. In addition, the course will provide different complexity characteristics P and NP classes, NP-completeness and reduction techniques.

*PREREQ: 222 COMP-3 Algorithm and Data Structures- II*

### **324 COMP-3 Computer Data Security and Privacy**

This course provides an integrated, comprehensive and up-to-date coverage of topics in Computer Security. The list of topics covers the basics of Computer Security, Cryptographic Tools, User Authentication, Access Control, Malicious Software, Denial-of-Service Attacks, Intrusion Detection and Message authentication.

### **336 COMP-3 Computer Graphics**

In this Course Computer Graphics theory and applications will be covered. Topics taught are classified as Fundamentals of computer graphics programming, Graphics hardware and software standards, 2D geometric primitives and raster images, 3D object representations. Data structures, algorithms, and the graphics pipeline. Graphical user interfaces. Underlying concepts in computer graphics systems including games, animation, modelling, rendering and paint systems.

### **332 COMP-3 Advanced Operating Systems**

This course provides the detailed description of distributed system concepts and its applications. It includes synchronization, concurrency, distributed scheduling algorithms and distributed file systems. It also covers the fundamental concepts, structure, characteristics and scheduling algorithms of multi-processor & real time operating system.

### **390 COMP-3 Summer Training**

The primary goal of the summer training / field experience is to obtain and enhance the students computer technology skills that help students to:

- 1) Familiarize with a particular real life work environment.
- 2) Observe and practice practical computer based problem solving techniques.
- 3) Gain skills to collaborate, work in groups and communicate effectively to share ideas with working team and supervisors.
- 4) Apply ethical principles and commit to professional ethics, responsibilities and norms of Computer Science practice.

### **323 INFS-3 Data Warehousing & Data Mining**

An overview of data warehousing and data mining concepts included cycles of business intelligent system architecture, data mining methodology, measurements of the extracted knowledge effectiveness and its applications. It provides some background knowledge of data mining to the students for understanding the roles in data mining and data warehousing like machine learning, pattern recognition, database technology, knowledge based systems, artificial intelligence, high performance computing and data visualization. It will discuss planning of logical and physical design, implementation, maintenance and evolution of data warehouse systems. The course introduces various data mining techniques for data preprocessing, mining frequent patterns, associations, data classification, and cluster

analysis. Students will be trained on some software tools such as: SPSS, Weka, Matlab, Oracle, DBMiner e.t.c to solve case studies on business solutions from the real world.

*PREREQ: 221 INFS-3 Database Systems-I*

### **334 INFS-3 Software Engineering**

Software engineering is a major branch of computing science that deals with the development of software systems as practical and cost-effective solutions for individuals and society. This course covers the fundamentals of software engineering like software life cycle, requirements engineering, system development paradigm, and system modeling using UML. It also covers software verification & validation, important implementation issues, open source development and concepts of software re-engineering. The course has a strong technical relation with graduation project providing the opportunity to practice software engineering knowledge, skills, and practices in a realistic development setting with a real client.

### **336 INFS-3 Human-Computer Interaction**

This course provides a comprehensive introduction to the usability methods in the dynamic field of human-computer interaction (HCI). Students will learn principles, guidelines and theories needed to develop high quality interface designs. Different interaction methods will also be addressed. Numerous examples of direct manipulation give students an understanding of excellence in interaction and related design principles. The advancements in virtual environments and their applications are also dealt with. Studying various aspects of social media and collaborative technologies will understand the usability of technologies among human diversity. It also provides updates on current HCI topics, interaction devices and interfaces. Study cases are also designed for higher learning with different scenarios in human-computer interaction.

### **426 CNET-3 Mobile Computing**

This course provides a comprehensive overview of mobile computing along with its security issues and mobility. The course will give an understanding of mobile agent systems and platforms, multiple access schemes and of various communication satellite systems. The course broadly covers the standard issues and physical mobility's of wireless LANs, mobile IP and mobile TCP. This course focuses on the Routing protocols and issues associated with mobile ad hoc and wireless sensor networks. This course will aware the students with latest trends and technologies of mobile operating systems and build understanding for developing the mobile applications.

### **471 COMP-3 Elective-II (Java Programming)**

This course aims to introduce the development of stand-alone and dynamic web applications with respect to solve real world problems using one to many tier architectures. In order to construct the stand-alone and web applications, it mainly focuses on techniques

to design and implement front-end, back-end and business logics using various java-based technologies.

### **443 INFS-3 Multimedia Applications**

This course is designed to provide the fundamental concepts and techniques of multimedia system components e.g. text, image, sound, animation, and video. Some of the key areas covered by the course are: Multimedia authoring and tools, hypertext and hypermedia content creation and delivery, media representations, user interfaces design and development, multimedia skills, animation principle, multimedia project requirements, planning, costing, designing and producing, and recent trends in multimedia. The techniques and tools for producing, designing, and implementing interactive multimedia applications will also be covered. Students will be trained on a range of authoring, editing, and scripting tools for multimedia development.

### **433 COMP-3 Theory of Compilers**

This course presents an introduction to compilers phases –analysis, synthesis, lexical analysis, regular expressions, finite automata NFA and DFA. Syntax Analysis, context-free grammar, ambiguity, top-down parsing - recursive descent and LL(K), bottom-up parsing, shift reduce parsing, introduction to LR parser, semantic analysis, syntax directed translation, intermediate code generator-three address code, storage organization, heap management, code generation, and code optimization.

### **442 COMP-3 Artificial Neural Networks**

This course provides an introduction to artificial neural networks. It reviews biological neural networks, and presents a general framework to construct their mathematical models with a view to study their applications. It gives a historical view to the McCulloch-Pitts model, application of Rosenblatt's Perceptron learning model in both linear and non-linear classification problems and the Widrow-Hoff's ADALINE model. It discusses important issues in the design, training, troubleshooting, and testing of neural network applications.

*PREREQ: 241 COMP-3 Artificial Intelligence*

### **495 COMP-3 Final Project**

This is a capstone course emphasizes team collaboration and application of modern software engineering approaches to software construction. The development by each team of an original, industry strength software product is the main objective of the course. The instructors will present lectures on the Unified Modeling Language (UML) and its application to object-oriented analysis and design and the teams will report on their project's progress by giving presentations and submitting deliverables related to the project. The teams will deliver and present project parts at the following stages: topic proposal (concept), software specification (requirements), design (model), and implemented

software (final product). At the end of the semester, there will be a final Project presentation where students will demonstrate and presentation the outcome and findings of the project work.

### **452 INFS - 3 Computer Ethics & Society**

This course covers the fundamentals of computer ethics & society. It also covers Legal, social, and ethical issues surrounding use of computers and the internet. The course will stress ethical decision making as well as legal and social responsibility in connection with technology-related concerns. This course covers the areas such as security, crime, privacy and intellectual property in the context of computer use. It also deals with computer and information ethics, social implications of technology current trends in computer science and information technology applications and development, professional issues, emerging trends and current topics in computer science research.

## 14. Departmental Committees and Units

- i. Advisory Committee
- ii. Program Assessment Committee
- iii. Development and Quality Committee
- iv. Department Curriculum Review Committee
- v. NCAAA Accreditation Committee
- vi. ABET Accreditation Committee
- vii. Final Exam Coordination Committee
- viii. Graduation Project Committee
- ix. Strategic Plan Committee
- x. Time Table Committee
- xi. Laboratories, Equipment and Services Committee
- xii. The Higher Studies and Research Committee
- xiii. Folder Submission Committee
- xiv. Student Advisory Committee
- xv. Web Portal Committee
- xvi. Departmental Teaching and Learning Unit (TLU)
- xvii. Community Service Committee
- xviii. Alumni Affairs and Employment Committee
- xix. Library Affairs Unit

### **ADVISORY COMMITTEE**

#### **Responsibilities:**

- Assess the current program and ensure that it's up to date and serving the requirements of industry and following the standard guidelines of relevant professional bodies.
- Advise about required attributes, skills and suitable outcomes for the pass out students necessary for their success.
- Help the program / department in assessing the job market requirements and provide suggestion for improvement in the program based on these requirements.
- Provide advice on the technological trends and changes in industry.
- Provide advice on opportunities to introduce new programs in response to the needs of a specific profession, industry or sector

- Promote good relationships with local community and businesses, industry and professional associations
- periodically (semester wise / yearly) review the outcomes, enrollment data, services and support facilities and progress of the program
- Provide support and assistance in the development of new programs and its review process.
- Assist in training and placement of graduates.

## **PROGRAM ASSESSMENT COMMITTEE (PAC)**

### **Responsibilities:**

- To develop, administer and follow up the processes of Quality Control in the Department.
- To follow up and select the benchmarks of the Department Program.
- To supervise and follow up the schemes for development and future planning in the Department.
- To review and approve assessment and action plans from departments and programs.
- To verify implementation of approved assessment and action plans.
- To receive and review annual progress reports based on the progress of action plan and activities of various committees.
- Monitoring the achievements of Program Learning Outcomes (PLOs) and Program Educational Objectives (PEOs).
- Monitoring the various feedbacks received from various stakeholders and plan activities accordingly.
- Advising the department in the review process of programs (s).
- Provides assessment training and dissemination of assessment information.
- Provides support for development, implementation and evaluation of current and proposed programs.
- Ensure that the program meets its stated mission and addresses the strategic direction of the college.
- Appraisal of faculty members based on defined tasks and guidelines by the department.



- Selection of Track -Leaders and Course Coordinators for next semester

## **DEVELOPMENT AND QUALITY COMMITTEE**

### **Responsibilities:**

- To develop, administer and follow up the processes of Quality Control in the Department.
- To follow up and select the benchmarks of the Department Program.
- To supervise and follow up the schemes for development and future planning in the Department.
- To follow up modern trends of teaching means, methodology and techniques.
- To set training programs in each department for the development of teaching, research and technical skills.
- To prepare, distribute and collect questionnaires from Bachelor's Degree students concerning the extent of usefulness attained from the Training Program during study years, the extent of compatibility of the courses with practical life and their suggestions for the maximization of its usefulness. The Committee is to classify and prepare the results statistically.

## **DEPARTMENT CURRICULUM REVIEW COMMITTEE (CRC)**

### **Responsibilities:**

- Preparation and review of Course Descriptions & Course Specification with the help of Course Coordinators and Track leaders.
- To review and recommend to the department council on existing and proposed curricula, courses, prerequisites, co-requisites, advisories and programs.
- Periodically review and enhance the learning objective and outcomes of the program and courses to make sure that they coincide the needs of job market and accreditation bodies.

- Make sure that textbooks references, lab manuals of all courses are current and up to date and periodically reviewed.
- Development of new curriculum based on industry requirements and review of existing curriculum (if any).
- Benchmarking of courses with local and international universities while designing and reviewing the curriculum.
- Consideration of JU program designing guidelines, NCAAE, ABET and ACM guidelines any other relevant body while reviewing the current curriculum or designing the new curriculum.
- Consideration of human, technological and learning resources availability and planning for future requirements if any.
- To solicit and review the expert opinion from different stakeholders in review and development of Curriculum plan and contents.
- Preparing documents and supports department in review and approval of current as well proposed curriculum.
- Ensure the Teaching Plan is prepared and delivered timely according to the approved academic calendar with the help of Course Coordinators and Track leaders.

## **NCAAA ACCREDITATION COMMITTEE**

### **Responsibilities:**

- Develop a timeline for training faculty members on NCAAE requirements and NCAAE accreditation.
- Increase faculty awareness of accreditation systems, criteria and updates through planned workshops, invited speakers and short courses inside and outside university.
- Revise course outcomes with different program outcomes according to NCAAE Systems.
- Collect course outcome assessments per semester and prepare an overall assessment report.

- Develop a NCAAE Pre-SSR report for Computer Science Department for outside review.

## **ABET ACCREDITATION COMMITTEE**

### **Responsibilities:**

- Develop a timeline for training faculty members on ABET requirements and ABET accreditation.
- Increase faculty awareness of accreditation systems, criteria and updates through planned workshops, invited speakers and short courses inside and outside university.
- Revise course outcomes with different program outcomes according to ABET systems.
- Collect course outcome assessments per semester and prepare an overall assessment report.
- Develop a ABET Pre-SSR report for Computer Science

## **FINAL EXAM COORDINATION COMMITTEE**

### **Responsibilities:**

- Announcement of the final exam question preparation at the beginning of semester
- Collect and give to the subject expert for vetting
- Ask lecturer to revise the final exam questions according to the expert comments.
- Proof read for final exam
- HOD do final revise
- Send for printing
- After the exam, choose a few papers for external vetting. Purpose for CQI

## **GRADUATION PROJECT COMMITTEE**

### **Responsibilities:**

- Produce a template for project title and description, evaluation form, evaluation rubric, log book, thesis writing guidelines
- Collect project topics from the staff members and display the topics to the students.
- Allocate student to supervisor
- Reminder to student and supervisor about the timeline of the progress submission, presentation, thesis submission.
- Collect project student registration details from the supervisors.
- Gather project activity reports from the students.
- Coordinate with the GPC committee during the semester to schedule midterm, pre- presentation and final project presentations.

## **STRATEGIC PLAN COMMITTEE**

### **Responsibilities:**

- Making recommendations to Head of Department related to the departments Mission, vision, strategic initiatives and strategic direction
- Identify and analyze critical strategic issues being faced by department and planning for alternative solutions.
- Development of a three to five-year strategic plan with measurable goals and time targets and monitoring strategic plan processes as well as the department's performance against measurable targets (KPIs).
- Periodically / annually reviewing the mission, vision, and strategic plan and action plan and recommending changes if any to the Head of Department.
- Keeping up-to-date on industry and local market trends and advances in technology and other related issues.

## **TIME TABLE COMMITTEE**

### **Responsibilities:**

- Preparation of Lecture Schedule in the start of every semester
- Preparing exam schedule
- Preparation of Exam duties schedule for the lab exams
- Identify the exam requirement from lecturers.
- Preparation schedule for the faculty members posted in other colleges

## **LABORATORIES, EQUIPMENT AND SERVICES COMMITTEE**

### **Responsibilities:**

- Check the lecture requirement in term of hardware and software before the semester started.
- Identify any new and renew requirement of hardware and software and report to program coordinator.
- Manage the purchasing or license renew of hardware and software.
- Record lecture relates assets for asset management.
- Monitor the usage of lab and classroom.
- Reporting software & hardware related issues to Head of the lab administration.
- Monitoring of class rooms & labs on special instructions given by the Dean or HOD.

## **THE HIGHER STUDIES AND RESEARCH COMMITTEE**

### **Responsibilities:**

- Encourage, monitor and announce research activities
- Establish research KPI that reflects the university KPI

- Grant announcements (internal & external).
- Monitor internal and external grants application from the staff
- Organize Research Colloquium or Seminars
- Produce report on research performance among staffs in term of grants, publication, IP, professional bodies, collaboration etc.
- Establish field of expertise among the staff. It important for postgraduate mapping and research purpose.

## **FOLDER SUBMISSION COMMITTEE**

### **Responsibilities:**

- Produce the checklist for teaching folder content and teaching folder checking
- Announcement on the Folder preparation before the semester started
- Lecturers submit the folder at the end of the semester.
- Check on the folder submission according to the checking list.

## **STUDENT ADVISORY COMMITTEE**

### **Responsibilities:**

- Assign lecturer as academic advisor to a group of students.
- Announce reminder about the meeting between advisor and advisee
- Monitor student attendance record.
- The academic advisor is expected to deal with student's academic, career, and personal problems.
- The academic advisor helps his/her students examine the course offerings in their major and understand their graduation requirements.

- The academic advisor helps the student explore the career fields within his/her major, and obtain related career information and survey job opportunities.
- The academic advisor serves as a link between the student and the administration by counseling the student on matters of failure, on the procedures for dropping and adding courses, course scheduling, and academic progress.
- The academic advisor must alarm students of the exclusion procedure well in advance, and of any subsequent changes that might be enforced during the course of their studies.

## **WEB PORTAL COMMITTEE**

### **Responsibilities:**

- Gathering staff information in the beginning of every semester.
- Gather faculty recent activities to be published in the portal.
- Updating various staff information on the college web portal in Arabic and English.
- Revise the content from time to time.

## **TEACHING AND LEARNING UNIT (TLU)**

### **Responsibilities**

- Provide consultation and guidance in teaching and learning process to academic staff.
- Prepare teaching preparation documentation according to outcome based learning
- Help in identifying the suitable online resources related to teaching & learning process.
- Help in review and development of Program Specifications as stated in NCAAA requirements with Quality Assurance Unit (QAU).
- Help in review and development of Course Specifications as stated in NCAAA requirements

- Collaborate with Curriculum Review Committee and provide guidance in course design, content development and curriculum development of academic programs.
- Help and encourage in identifying and formulating best teaching and learning best practices.
- Conduct evaluation of teaching on academic staff & provide feedback
- Encourage research in identifying suitable methodology and innovative techniques for effective teaching and learning.
- Conduct Faculty Orientation Program for new faculty members
- Organize workshops and seminars for faculty members on Outcome- based Teaching & Learning, Personal Development Skills and other relevant topics in collaboration with other units at college and department level.

## **COMMUNITY SERVICE COMMITTEE**

### **Responsibilities:**

- To collect and classify the projects executed by the Department and its members and the results of the contributions of these projects to the community service and the Development plans.
- To encourage and develop the spirit of entrepreneurship in the students to maximize the return of the community service role through seminars and leaflets in coordination with the relevant committees in the Department.
- To deepen communication between the College and the bodies in charge of the Development plans in the Kingdom of Saudi Arabia.
- To set practical programs to enhance the relation between the Department and the local society and to pursue its implementation.

## **ALUMNI AFFAIRS AND EMPLOYMENT COMMITTEE**

### **Responsibilities:**

- To collect and classify students' personal data in the Department and means of communicating with them (Particularly Bachelor's Degree students).



- To collect and classify data pertaining to employers and means of communicating with them.
- To set programs for strengthening the ties between the graduates and employing bodies.
- To prepare, distribute and collect questionnaires pertaining to the extent of satisfaction of this group with their study program. The committee is to classify and prepare the results statistically upon which it offers advice to the Program.
- To establish an effective mechanism to make available employment opportunities in their fields of specialization (e.g. Via the convening of employment meetings – Exploration of the employers' views on the levels of the graduates from the College-Exploration of the employers' views on the important courses for the Program and the Department.
- To activate means of communication with the graduates (e.g. A Students' Association of the Department of Computer Science).
- To explore the views of the already employed graduates pertaining to their evaluation of the extent of the usefulness of the relevant program and the contents of the courses they studied previously

## **LIBRARY AFFAIRS UNIT**

### **Responsibilities:**

- Cataloguing the available books and educational resources for easily providing access to these resources.
- Maintaining the records of issue and return details of books and other educational resources.
- Liaising with department administration and faculty members and collect the requirements for further procurement of books.
- Ensuring that library services meet the needs of staff.

## 15. DEPARTMENT FACULTY MEMBERS

### Male Campus (Main Department)

1. Dr. Baseem Ibrahim Assiri, Assistant Professor, Ph.D. in Computer Science, Parallel and Distributed Computing, Louisiana State University, USA
2. Dr. Abdullah Sheneamer, Assistant Professor, Ph.D. in Computer Science, Software Engineering, University of Colorado at Colorado Springs, USA
3. Dr. Muath Alhussain Khawaji, Assistant Professor, Ph.D. in Computer Science, Human Computer Interaction, IOWA State University, USA
4. Dr. Mousa Khobrani, Assistant Professor, Ph.D. in Computer Science, Mobile Applications, Brighton University, UK
5. Dr. Faisal Mohammedalamen AlShanketi, Assistant Professor, Ph.D in Information Systems Security, Mobile Security, University of Victoria, Canada
6. Mr. Megrin Hakami, Lecturer, Masters in Computer Science, Newcastle University, UK
7. Mr. Adel Mohammed Gharawi, Lecturer, Masters in Computer Science, Artificial Intelligence, DePaul University
8. Mr. Ibrahim Mohsen Khromi, Lecturer, Masters in Computer Science, Information Technology, Sacred Hart University, U.S.A
9. Mr. Abdulrehman Al Harbi, Lecturer, Masters in Computer Science, Saint Joseph's University, USA
10. Mr. Zaid Hakami, Lecturer, Masters in Computer Science, Software Engineering, Manmott University, U.S.A
11. Mr. Adel Salem Al gahtani, Lecturer, Masters in Computer Science, Security, University of Colorado, U.S.A
12. Mr. Hamad Zogan, Lecturer, Masters in Computer Science, Saint Joseph University, USA
13. Mr. Mnassar Alyami, Lecturer, Masters in Computer Science, Kentucky State University, USA
14. Dr. Mohammed Fakherdin, Assistant Professor, Ph.D. in Computer Science, Web applications, University Malaysia Pahang, Malaysia

15. Dr. Rajan John, Assistant Professor, Ph.D. in Computer Science, Data Mining, Karunya University, India
16. Dr. Sherif Tawfik Amin, Assistant Professor, Ph.D. in Computer Science, Computer Security & Bioinformatics, Assiut University, Egypt York University, UK
17. Dr. Shadab Alam, Assistant Professor, Ph.D. in Computer Science, Cryptography & Network Security, Aligarh Muslim University, India
18. Dr. Shams Tabrez Siddiqui, Assistant Professor, Ph.D. in Computer Science, Software Requirement Engineering, Aligarh Muslim University, India
19. Dr. Nasser Mohamed Anis Ebrahim Aisa, Assistant Professor, Ph.D. in Computer Science, Image processing, Cairo university, Egypt
20. Dr. Shanmuga Sundaram Marappan, Assistant Professor, Ph.D. in Computer Science, Digital Image Processing, Bharathiar University, India
21. Mr. Yaqoub Abbker Adam, Lecturer, Masters in Computer Science, Computer Sciences & Information, Gezira University, Sudan
22. Mr. Alfadil Ahmad Hamdan, Lecturer, Masters in Computer Science, Academy of Graduate Studies, Libya
23. Mr. Imad Al Sheikh, Lecturer, Masters in Computer Science, Bio-Inspired Systems & Object technology, Philadelphia University, Jordan
24. Mr. Ashfaq Ahmad, Lecturer, Masters in Computer Science, Databases, G.C University, Pakistan
25. Mr. Aasif Aftab, Lecturer, Masters in Computer Science, Aligarh Muslim University, India
26. Mr. Mohammed Shabbir Alam, Lecturer, Masters in Computer Science, Aligarh Muslim University, India
27. Mr. Shiraz Ahmed Maniyar, Lecturer, Masters in Computer Science, Osmania University, Hyderabad, India
28. Mr. Raj Kumar Masih, Lecturer, Masters in Computer Science, Software Engineering, Punjab Technical University, India
29. Mr. Mohammad Shahnawaz Nasir, Lecturer, Masters in Computer Science, Aligarh Muslim University, India
30. Mr. Khalid Ali Qidwai, Lecturer, Masters in Computer Science, IGNOU, India
31. Mr. Alighazi Siddiqui, Lecturer, Masters in Computer Science, India Gandhi National University, India
32. Mr. Wajid Ali Siddiqui, Lecturer, Masters in Computer Science, Dr. Babasaheb Ambedkar Marathwada University, India

33. Mr. Syed Ziauddin, Lecturer, Masters in Computer Science, Osmania University, Hyderabad, India
34. Mr. Khaja Raoufuddin Ahmed, Lecturer, Masters in Computer Science, Middlesex University, London
35. Mr. Mohammad Alamgir Hossain, Lecturer, Masters in Computer Science, Information Technology, Bengal Engineering and Science University, India
36. Mr. Abu Salim, Lecturer, Masters in Computer Science & Engineering, Jawaharlal Nehru Technological University, Kakinada, India
37. Mr. Mohammed Qamruddin, Lecturer, Masters in Computer Science & Engineering, Data Mining & Security, Jawaharlal Nehru Technological University, Hyderabad, India
38. Mr. Mohammed Shuaib, Lecturer, Masters in Computer Science & Engineering, Software Engineering, Aligarh Muslim University, India
39. Mr. Khalid Hasan Mahmoud Alsinglawi, Lecturer, Masters in Computer Science & Engineering, Computer Information System, Al-Yarmok University, Jordan
40. Mr. Mohammed Shahid Kamal, Lecturer, Masters in Computer Science, IGNOU, India
41. Mr. Fahad Ahmed Aati, Teaching Assistant, Bachers in Computer Science, Programming Languages, Jazan University, Saudi Arabia.

## Female Campus (Academics Campus for Girls-1)

1. Dr. Nada Hakami, Assistant professor, Ph.D. in Computer Science, Technology-Enhanced learning, University of Southampton, UK
2. Ms. Shatha Hakami, Lecturer, Masters in Computer Science, Advanced CS: NLP Sentiment Analysis, University of Birmingham, UK
3. Dr. Walaa Mohamed Abdelhafiez Hussein, Assistant professor, Ph.D. in Computer Science, Image Processing, Souhag University, Egypt
4. Dr. Sahar Eldeep, Assistant professor, Ph.D. in Computer Science, Electric power Control, Zagazig University,
5. Dr. Uma Perumal, Assistant professor, Ph.D. in Computer Science, Data Mining, Magadha University, India
6. Ms. Noha Mostafa, Lecturer, Masters in Education Technology, Cairo University, Egypt
7. Ms. Sahar Mansour Hassen Mohamed Ahmed, Lecturer, Masters in Computer Science, Biometrics, AlZaiem Algzharj University, Sudan
8. Ms. Nagla Babiker, Lecturer, Masters in Information Systems, Communication networks, AlZaiem Algzharj University, Sudan
9. Ms. Sameena Shaik, Lecturer, Masters in Computer Science, Andhra University, India
10. Ms. Sangeetha Komandur (Zainab Khan), Lecturer, Masters in Computer Science, Osmania University, India
11. Ms. Fazeelatunnisa, Lecturer, Masters in Computer Science, Wireless Networks, Osmania University, India
12. Ms. Saahira Banu Ahamed Maricar, Lecturer, Masters in Computer Science, Wireless Sensor Networks, Vels University
13. Ms. Benazir Ali, Lecturer, Masters in Electronics and Communication Engineering, Anna University, India
14. Ms. Subuhi Kashif Ansari, Lecturer, Masters in Computer Science, RGPV, Bhopal, India
15. Ms. Shermin Shamsudheen, Lecturer, Masters in Computer Science & Engineering, Wireless Sensor Networks, Anna University, India
16. Ms. Nusrat Hamid Shah, Lecturer, Masters in Computer Science, University of Pune, India.

17. Ms. Jaya Suriya Muthukrishnan Panchalingam, Lecturer, Masters in Computer Science & Engineering, Image Processing, Vinayaka Mission University, India
18. Ms. Nida Anjum, Lecturer, Masters in Computer Science, IGNOU, India
19. Ms. Doaa, Lecturer, Masters in Computer Science, Virtual reality, Mansoura University, Egypt
20. Ms. Roma Fayaz, Lecturer, Masters in Computer Science, University of Kashmir, India
21. Ms. Munleef Quadir, Lecturer, Masters in Computer Science, Central University of Kashmir, India
22. Ms. Pravitha, Lecturer, Masters in Computer Science, Bharathiyar, University, India
23. Ms. Rawia Ahmed, Lecturer, Masters in Computer Science, Artificial Intelligence, Sudan University
24. Ms. Remya Rajappan, Lecturer, Masters in Computer Science, Mahatma Gandhi University, India
25. Ms. Betty Elezebeth Samuel, Lecturer, Masters in Computer Science, Anna University, India
26. Ms. Afshan Kauser, Lecturer, Masters in Computer Science, Dr. Babasaheb Ambedkar Marathwada University, India
27. Ms. Arshia Arjumand Banu, Lecturer, Masters in Computer Science, Osmania University, India
28. Ms. Sabana Parveen, Lecturer, Masters in Computer Science, Jawaharlal Nehru Technological University, India
29. Ms. Anne Anoop, Lecturer, Masters in Computer Science, Sikkim Manipal University, India
30. Ms. Shama Kouser, Lecturer, Masters in Electronics and Communication Engineering, Jawaharlal Nehru Technological University, India
31. Ms. Umi Salma Basha, Lecturer, Masters in Computer Science, Information Security, Visvesvaraya Technological University, Belgum University, India
32. Ms. Layla, Teaching Assistant, Bachelors in Computer Science, Hail University, Saudi Arabia.

1. Dr. Mawahib Adam, Assistant Professor, Ph. D. in Computer Science, Computer Networks Sudan University for Science and Technology, Sudan
2. Ms. Samar Mansour, Lecturer, Masters in MIS, Alzaiem Alazhari University, Sudan
3. Ms. Sayyada Sara Banu, Lecturer, Masters in Computer Science, Osmania University, India
4. Ms. Vini Vidyadharan, Lecturer, Masters in Computer Science, Kerala University, India
5. Ms. Chaman Deep Kaur, Lecturer, Masters in Computer Science, Punjab Technical University, India
6. Ms. Afsana Anjum, Lecturer, Masters in Computer Science, Maharishi Dayanad University, India
7. Ms. Rejina Aziz, Lecturer, Masters in Computer Science, Manonmaniam Sundaranar University, India
8. Ms. Sunanda Kondapalli, Lecturer, Masters in Computer Science, Osmania University, India
9. Ms. Ayasha Siddiqua, Lecturer, Masters in Computer Science, Information Security and Management, Uttarakhand Technical University, India
10. Ms. Shaista Sabir, Lecturer, Masters in Computer Science, Hamdard University, India
11. Ms. Ahmed unissa, Lecturer, Masters in Computer Science, Osmania University, India
12. Ms. Roma Fayaz, Lecturer, Masters in Computer Science, Kashmir University, India
13. Ms. Amal Saad, Teaching Assistant, Bachelors in Computer Science, Bisha University, Saudi Arabia.
14. Ms. Afnan Sumaily, Teaching Assistant, Bachelors in Computer Science, Jazan University, Saudi Arabia.
15. Ms. Atyaf Hussain, Teaching Assistant, Bachelors in Computer Science, Jazan University, Saudi Arabia.

