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2020

Program Specification

Program Name: Bachelor in Computer Science (BCS)	
Qualification Level : Bachelor (6th Level according to latest NQF)	
Department: Computer Science	
College: Computer Science and Information Technology	
Institution: Jazan University	

Content

A. Program Identification and General Information

1. Program Main Location:
Campus 1: Department of Computer Science, Main Campus, Jazan University (For Boys) **Campus 2:** Department of Computer Science, Mahaliya Campus Girls, Jazan University (For Girls)
2. Branches Offering the Program:
None
3. Reasons for Establishing the Program: (Economic, social, cultural, and technological reasons, and national needs and development, etc.)

As Information Technology (IT) has grown, it has had a greater impact on human society than any other technology in history. Also, the next 10-15 years could bring more change to the world than has ever been witnessed in the history of humanity. Computer science professionals are in demand in almost every sector and country in the world. There are many great reasons to study computer science at university, such as career opportunities, high earning potential and the opportunity to make the world a better place. Studying a computer science degree will equip with skills, knowledge and values required to step into an exciting, ever-developing society and industry.

Saudi Arabia's Vision 2030 seeks to empower citizens with knowledge and skills to fulfill future labor market demands. Information and Communication Technology (ICT) can be a crucial enabler of governmental programs specified in Saudi Vision 2030 and detailed in the National Transformation Plan 2020. However, the ICT sector has a substantial supply-demand gap. This is reflected in the Ministry of Communications and Information Technology's (MCIT) strategic goal of "rehabilitating specialized Saudi human capital and employing it to alleviate the supply-demand gap in the ICT sector". The CIT Commission recently reported that while Saudi universities, colleges, recruitment organizations, and domestic training institutions continue to supply hundreds of new ICT professionals, the demand-supply imbalance will widen. In 2017, the ICT talent gap topped 37,000. Software/application developer/manager, for example, is ranked as one of the most challenging skills to find by employers. Thus, the Bachelor in Computer Science program strives to bridge the ICT industry gap by producing qualified graduates who can contribute to Saudi Arabia's economy and social betterment.

The College of Computer Science and Information Systems was established by the consent of Royal Decree No. 7 / b / 24 232 on 11/5/1425 H. At first, it was under the patronage of King Khalid University, Abha and later, in 1428, it was under the guardianship of King Abdul Aziz University. On January 12, 1427, a Royal Decree was 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 on 04/06/1429 AH. In 2006, the computer science department was established. The first curriculum plan for a Bachelor in Computer Science was developed with 146 credit hours. At that time, the total number of computer laboratories was 6. In 2008, the second edition of the curriculum plan was developed with 145 credit hours.

The program was updated to comply with the country's Vision 2030 for sustainable development and to provide quality youth education in order to succeed in global society. The new curriculum plan (third edition) was approved and implemented in 2019-2020. The latest trends and job market requirements were incorporated into the redesigned plan, which now comprises 160 credit hours. At the time of designing the new plan, benchmarking for the courses was done with the top universities of the world and Saudi Arabia. When it comes to English, Mathematics, and Sciences courses, ACM guidelines and accreditation organization regulations, such as NCAAA and ABET regulations, were strictly followed. The Department has well-qualified faculty members with a sizeable number of PhD holders with specialization in the various fields of computer science. The Saudi government is also promoting online applications and a digital revolution in every aspect of the country that will require more and more computer science graduates and will result in the high employability of passed out students.

The program was established with the following economic, technological, social and cultural reasons -

- Economic reasons
    1) Software industries development 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) Create more opportunities for Saudis to pursue careers as software engineers and thereby contribute to the development of the kingdom.
    2) Safety awareness of Computer hardware and software industries in and around the Kingdom of Saudi Arabia.
    3) Safety awareness in computer manufacturing industries.
    4) Give students a place to learn how to be socially conscious and responsible in their careers.
    5) Understand the ethical, legal, and professional responsibilities in the field of IT, which has a direct impact on 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.

4. Total Credit Hours for Completing the Program: (145 Cr. Hours)

5. Professional Occupations/Jobs:

Graduates of the Bachelor in Computer Science program may pursue the following career paths but not limited to:

- Computer Scientist
- Data Scientist
- Software Engineer
- Software Developer
- Systems Analyst
- System Developer
- Software project manager
- Software Quality Assurance Specialist
- Software Tester
- Technical support specialist
- Web Developer
- Web Designer
- Network Architect
- Database Administrator
- Information Security Analyst
- Machine learning engineer
- Artificial intelligence specialist
- Health Information Technician
- Video Game Developer
- Information Researcher
- Computer Programmer
- Mobile Application Developer
- Academia

https://www.computerscience.org/careers/
https://www.naukrigulf.com/computer-science-jobs-in-saudi-arabia

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

Major track/pathway	Credit hours (For each track)	Professional Occupations/Jobs (For each track)
1.		

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

Intermediate exit points/awarded degree	Credit hours
1.	

B. Mission, Goals, and Learning Outcomes

1. Program Mission:

Bachelor in Computer Science program is to provide best practices of education, research, innovation and entrepreneurship to our students in the field of Computer Science, so they contribute in building a vibrant society.

2. Program 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.

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

University Mission	College Mission	CS Program Mission
We teach, research and innovate to contribute for building a vibrant society.	The mission of the College of CS & IT is to provide best practices of education, research, innovation and entrepreneurship to our students in the field of Computer Science and Information Technology, so they contribute in building a vibrant society.	Bachelor in Computer Science program is to provide best practices of education, research, innovation and entrepreneurship to our students in the field of Computer Science, so they contribute in building a vibrant society.

University Goals	College Goals	CS Program Goals
1 Infrastructure development 2 Developing an IT infrastructure 3 Developing university governance 4 Improving human capacity 5 Improving academic programs 6 Development of administrative processes 7 Increase support for scientific research and innovation. 8 Promoting the best use of resources 9 Enhancing investment partnerships 10 Improving the student experience 11 Improving the university outcomes 12 Improving community service and quality of life 13 Improving the university's ranking	1 Enhance infrastructure for supporting excellent computing education. 2 Endeavor governance and proper utilization of resources. 3 Establish state-of-the-art curricula to cover the scientific knowledge and professional needs of the students. 4 Emphasis on student-centric learning to seek better career in industry, business or government sector. 5 Empower faculty development and research activities. 6 Maintain relations with industry and other academic institutes for benchmarking and technology-sharing. 7 Improve community service and quality of life.	1 To impart innovative teaching to enrich students with sound computing knowledge by utilizing state of the art infrastructure. 2 To prepare students for the job market by strengthening their problem solving and professional skills. 3 To train students by providing an environment for lifelong learning and entrepreneurship. 4 To support faculty and students in multidisciplinary research. 5 To inculcate students with professional ethics and social responsibilities to contribute in society's economic growth.

Relevance: Program mission and goals are aligned with the college mission, goals and subsequently college mission and goals are aligned with university mission and goals, and this way department is committed and working towards achieving the mission and goals of the university. Bachelor in Computer Science program has been designed to produce quality graduates that can fulfil the IT requirements of industry and society and propel the large-scale adaptation of IT tools and provide better job opportunities to the students. Bachelor in Computer Science program is very much consistent and relevant with the Jazan University mission and goals.

4. Graduate Attributes:

These are the following attributes expected from the graduates of the BS Computer Science Program:

1. Sound computing knowledge
2. Critical thinking and problem solving
3. Strong work ethics and continuous professional development
4. Leadership and teamwork
5. Effective verbal, non-verbal and digital communication

Program Mission	Graduate Attributes	Program Goals
Bachelor in Computer Science program is to provide best practices of education, research, innovation and entrepreneurship to our students in the field of Computer Science, so they contribute in building a vibrant society.	1 Sound computing knowledge 2 Critical thinking and problem solving 3 Strong work ethics and continuous professional development 4 Leadership and teamwork 5 Effective verbal, non-verbal and digital communication	1 To impart innovative teaching to enrich students with sound computing knowledge by utilizing state of the art infrastructure. 2 To prepare students for the job market by strengthening their problem solving and professional skills. 3 To train students by providing an environment for lifelong learning and entrepreneurship. 4 To support faculty and students in multidisciplinary research. 5 To inculcate students with professional ethics and social responsibilities to contribute in society's economic growth.

Graduate Attributes	Program Goals	Program Learning Outcomes
1 Sound computing knowledge 2 Critical thinking and problem solving 3 Strong work ethics and continuous professional development 4 Leadership and teamwork 5 Effective verbal, non-verbal and digital communication	1 To impart innovative teaching to enrich students with sound computing knowledge by utilizing state of the art infrastructure. 2 To prepare students for the job market by strengthening their problem solving and professional skills. 3 To train students by providing an environment for lifelong learning and entrepreneurship. 4 To support faculty and students in multidisciplinary research.	K1. Describe the sound knowledge of principles of Computing, Science and Mathematics required in the field of Computer Science. K2. Relate recent trends and current research in the field of Computer Science. S1. Analyze complex computing problems to apply principles of computing and other relevant disciplines to identify solutions. S2. Evaluate problem-solving strategies to propose a large number of solutions and come up with the best possible solution. S3. Design and implement computing-based solutions to meet a given set of computing requirements in the context of the program's discipline.

| | 5 | To inculcate students with professional ethics and social responsibilities to contribute in society's economic growth. | S4. **Apply** computer science theory and software development fundamentals to produce computing-based solutions.

S5. **Communicate** effectively in a variety of professional contexts for technical and non-technical audiences.

V1. **Recognize** professional and social responsibilities to make informed judgments in computing practice based on legal and ethical principles.

V2. **Demonstrate** the ability to function effectively as a member or leader of a team engaged in activities appropriate to the field of Computer Science.

V3. **Identify** the need for and an ability to engage in continuing professional development and entrepreneurship. |

*Relationship between missions, goals, graduate attributes of program, college and institution.

5. Program learning Outcomes*

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

* 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	7	15	10.34
	Elective	-	-	
College Requirements	Required	19	64	44.14
	Elective	-	-	
Program Requirements	Required	18	54	37.24
	Elective	2	6	4.14
Capstone Course/Project	Final Project	1	3	2.07
Field Experience/ Internship	Cooperative Training	1	3	2.07
Others				
Total		**48**	**145**	**100**

2. Program Study Plan

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 1	101CSC-3	Introduction to Computer	R	None	3	Institute
	103ENGL-6	Intensive English Course 1	R	None	6	College
	101SLM-2	Islamic Culture I	R	None	2	Institute
Level 2	100MATH-3	Mathematics	R	None	3	College
	102SLM-2	Islamic Culture II	R	None	2	Institute
	104ENGL-6	Intensive English Course 2	R	103ENGL-6	6	College
Level 3	011COMP-3	Programming 1	R	None	3	College
	103SLM -2	Islamic Culture III	R	None	2	Institution
	102MATH-3	Matrix Algebra	R	100MATH-3	3	College
	104 ENGL-4	Intensive English Course 3	R	103ENGL-6	6	College
Level 4	112COMP-3	Programming 2	R	011COMP-3	3	College
	201PHYS-4	Principles of Physics	R	None	4	College
	111INFS-3	Introduction to Information System	R	None	3	College
Level 5	201MATH-3	Differentiation & Integration	R	100MATH-3	3	College
	104SLM-2	Islamic Culture IV	R	None	2	Institution
	101ARB-2	Arabic Language Skills	R	None	2	Institution
Level 6	102ARB-2	Arabic Writing	R	None	2	Institution
	151COMP-3	Computational Geometry	R	None	3	Department
	114COMP-3	Programming of Statistics & Probabilities	R	None	3	Department
	206MATH-3	Discrete Mathematics	R	102MATH-3	3	College

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 7	213CNET-3	Computer Organization & Architecture	R	None	3	College
	213COMP-3	Object Oriented Programming	R	112COMP-3	3	College
	221COMP-3	Algorithms & Data Structures 1	R	None	3	Department
	252COMP-3	Data Modeling & Simulation	R	None	3	Department
Level 8	111CNET-3	Digital Logic	R	None	3	Department
	241COMP-3	Artificial Intelligence	R	None	3	Department
	221INFS-3	Database Systems 1	R	111INFS-3	3	College
Level 9	222COMP-3	Algorithms & Data Structures 2	R	221COMP-3	3	Department
	231COMP-3	Operating Systems	R	None	3	College
	241INFS-3	Internet Technology	R	None	3	College
Level 10	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
Level 11	324COMP-3	Computer Data Security & Privacy	R	None	3	Department
	332COMP-3	Advanced Operating Systems	R	None	3	Department
	334INFS-3	Software Engineering	R	None	3	College
Level 12	336COMP-3	Computer Graphics	R	None	3	Department
	390COMP-3	Summer Training	R	None	3	Department
	323INFS-3	Data Warehousing & Data Mining	R	221INFS-3	3	Department
	336INFS-3	Human Computer Interaction	R	None	3	College
Level 13	426CNET-3	Mobile Computing	R	None	3	Department
	**4COMP-3	Elective 2	E	None	3	Department
	433COMP-3	Theory of Compilers	R	None	3	Department
Level 14	433INFS-3	Software Project Management	R	None	3	Department
	443INFS-3	Multimedia Applications	R	None	3	Department
	442COMP-3	Artificial Neural Networks	R	241COMP-3	3	Department
Level 15	495COMP-3	Final Project	R	None	3	Department
	452INFS-3	Computer Ethics & Society	R	None	3	College
List of Elective Courses:						
Level 10	334COMP-3	Operating System Pragmatics	E	None	3	Department

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
	316COMP-3	Unix & Shell Unix and Programming	E	None	3	Department
	353COMP-3	Graph Theory and Application	E	None	3	Department
	315COMP-3	Visual Programming	E	None	3	Department
	326COMP-3	Cryptographic Techniques	E	None	3	Department
	343COMP-3	Fuzzy Logic	E	None	3	Department
Level 13	452COMP-3	Advance Algorithm Design & Analysis	E	None	3	Department
	419COMP-3	Web Technology	E	None	3	Department
	471COMP-3	Java Programming	E	None	3	Department
	435COMP-3	Real Time Systems	E	None	3	Department
	462COMP-3	Computer Vision	E	None	3	Department
	444COMP-3	Genetic Algorithm	E	None	3	Department
	418COMP-3	Game Programming	E	None	3	Department

3. Course Specifications
Insert hyperlink for all course specifications using NCAAA template

Course Specification 2020-2021

Course Specification 2021-2022 (Old & New Plan)

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**)

Course code & No.	Program Learning Outcomes									
	Knowledge and understanding		Skills					Values		
	K1	K2	S1	S2	S3	S4	S5	V1	V2	V3
101CSC-3	I		I		I				I	
103ENGL-6							I	I	I	
100MATH-3	I					I				
101SLM-2							I	I		
011COMP-3	I		I		I	I			I	
104ENGL-6							I		I	
102MATH-3	I			I						
102SLM-2							I	I		
101ARB-2							I	I		
112COMP-3	I		I	I	I	I			I	
111INFS-3	I		I			I		I		
201PHYS-4	I					I				
103SLM -2							I	I		
102ARB-2							I	I		
114COMP-3	I		I			I			I	
151COMP-3	I		I			I			I	

Course code & No.	Program Learning Outcomes									
	Knowledge and understanding		Skills					Values		
	K1	K2	S1	S2	S3	S4	S5	V1	V2	V3
201MATH-3	P			P						
206MATH-3	P			P						
104SLM-2							I	P		
213CNET-3	P	I	I	P					P	
213COMP-3	P		P		P	I			P	
252COMP-3	P		P		P	P			P	
221COMP-3	P			P		P			P	
221INFS-3	P		P	P		P			P	
111CNET-3	P		P	P		P			P	
231COMP-3	P	P	P	P		P		P	P	
222COMP-3	P		P	P		P			P	
241COMP-3	P	P	P	P	P		P	P	P	
241INFS-3	P		P		P	P	P		P	I
331CNET-3	P		P		P	P				I
315CNET-3	P		P	P		P			P	
323COMP-3	P		P	P		P			P	
**3COMP-3	P	P	P		P		P			P
324COMP-3	P	P	P	P	P			P	P	
332COMP-3	P	P	P			P	P		M	
336COMP-3	P	P	P	P	P		M		M	
323INFS-3	P		P			P			M	
334INFS-3	M	P	M	P	P		M		M	P
336INFS-3	M		M	M			M			P
390COMP-3	M	M	M		M		M	M		M
426CNET-3	M	M	M	M		M		M		
**4COMP-3	M	M		M	M	M	M		M	M
433INFS-3	M	M	M		M	M		M	M	M
443INFS-3	M	M	M		M	M	M		M	M
433COMP-3	M	M	M		M	M			M	
442COMP-3	M	M	M	M	M	M		M	M	
495COMP-3		M	M		M	M	M	M	M	M
452INFS-3		M	M			M	M	M		

| **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. |
| The program policies of the Computer Science and Information Technology, Jazan University are aimed at providing ICT based education and professional development. This starts from the planning of the program and individual courses, implementation and periodic evaluation to ensure that best practices are being followed so that the college will accomplish its task with maximum in learning outcomes. Also promotes consistency between the program learning outcomes, teaching and learning strategies |

and the methods of assessment. The subsequent section provides the standards in adaptation of policies in the process of teaching-learning.

Teaching and learning strategies are designed to facilitate alignment with the Jazan University's policies and procedures, mission of the University and the College and the achievement of the BCS curriculum objectives. The curriculum content is the primary component of the teaching and learning strategies and has been designed to be up-to date with the growing demands of the IT industry. The curriculum of the program is based on the expected program learning outcomes. The contents of individual courses are developed by the course coordinator to be in line with the course learning outcomes and are mapped with the program learning outcomes. This is finally approved by the curriculum committee. Updating of the course contents in done annually and is based on the achievement of the course learning outcomes and the recommendations of previous course reports.

The following are the key principles of the teaching and learning strategies of BCS program;

- **Student-centered teaching and learning**: The curriculum addresses the learning needs of the students along with feedback.
- **ICT-focused teaching and learning** which prepares the students to be skilled in professional practice.
- **Value-based education** where students are responsible and are committed to be a lifelong learner.

In order to be effective in teaching, teachers will be given the opportunity to develop and apply the following characteristics with respect to the following categories:

A. Preparation and evaluation of course plan

    i. Plan the course delivery for the semester (14 - 15 WEEKS).

    ii. Course plan will includes Course learning objectives, Course contents, Course evaluation, Prerequisites, Technology usages and assessment strategies.

    iii. Design the course material/ lecture notes in pace with the plan.

    iv. New course proposals and major changes must be assessed and approved by the expert committee.

    v. Communicate the amendments to the course teachers.

    vi. Provision to evaluate the courses and programs annually and can alter the learning outcomes and teaching strategies.

B. Course material and teaching resources

    i. Ensure the availability of sufficient authenticated course material before the commencement of classes.

    ii. Select appropriate resources for the lesson; modify course materials and organization to accommodate students' special needs and abilities.

    iii. Provide timely report to course coordinators at different stages of the course delivery.

    iv. Review the course material at various intervals by the expert committee.

C. Learning outcomes/objectives

    i. Manage the learning process through effective planning

    ii. Have clear learning objectives for the lessons to be taught

    iii. Use time efficiently to cover sufficient topics in the subject.

  iv. Ensure that students are aware of learning objectives.

  v. Ensure that the students are fully aware of course requirements.

  vi. Encourage students to assess their own performance with learning outcomes time to time and strive for improvement.

D. Teaching strategies

  i. Maintain consistency with the Course plan.

  ii. Use teaching methods which engage, motivate and challenge all students, enabling them to progress at a suitable pace and to be aware of their learning outcomes.

  iii. Provide a variety of learning situations to suit the stage of the learning process: teacher/student; pair; group; individual.

  iv. Ensure an orderly and efficient approach to teaching and learning.

  v. Use spoken (presentation) and written assessment to improve students' performance.

  vi. Assess and review the teaching strategies in pace with the emerging trends, prevailing situations, special needs.

E. Teacher's professional competence

  i. Have a secure command of the subject

  ii. Be conscious of the theory of knowledge, learning and the learner's role, teaching and the teacher's role, which underlies teaching practice.

  iii. Able to update according to the technological developments.

  iv. Involve themselves in scientific research, so as to promote research attitude among students.

  v. Optimum use of library and laboratories.

  vi. Devising the mechanism to share knowledge among teachers.

F. Assessing and identifying individuals

  i. Judge the students' understanding with accuracy

  ii. Able to identify where student is, and provide necessary motivation.

  iii. Provide assessment opportunities which inform learning process.

G. Attitude / interpersonal skills

  i. Be aware of the importance of creating a non-threatening learning and teaching environment

  ii. Be able to show interest in students, motivate and enthuse them

  iii. Build up good relationships with students: show interest in them.

  iv. Establish positive relationships which promote students' motivation

  v. Ensure students to work with purpose and self-confidence.

Curricular Activities

- Visual & Verbal [Lectures / Presentations]
- Visual & Practical [Lab Session]/ Lab Demonstration
- Case-Studies & Group Discussion [Deductive | Inductive]

- Problem Solving [numerical | exercise questions]
- Active Class participation as Group Activity
- Interactive Class Participation [Cross Questioning]
- Presentation on Cutting edge Technologies
- Project development & presentation
- Mini Project development and demonstration
- Field training
- Technical Reports writing
- Tutorials
- Brainstorming
- Explanation through Interactive Videos

Co-curricular Activities

- Peer-Reviewing of each other's work
- Student's Computer Club Activities
- Inter College Mini-Project Competition
- Certification (AWS, JCP, Linux, Red hat, OCP & EMC) Training Programs
- Participation in Scientific seminar

Extra- curricular Activities

- Community Services @ Regional Public Places
- Indoor/Outdoor games
- Play/ drama/ theatre
- Cultural Events

PLO No.	Program learning Outcomes*	Teaching and learning strategies	Co-curricular Activities	Extra-Curricular Activities
Knowledge and Understanding				
K1	**Describe** the sound knowledge of principles of Computing, Science and Mathematics required in the field of Computer Science.	Visual & Verbal [Lectures / Presentations], Interactive Class Participation [Cross Questioning], Field training, Technical Reports writing, Explanation through Interactive Videos, Project development & presentation	Peer-Reviewing of each other's work, Inter College Mini-Project Competition, Certification (AWS, JCP, Linux, Red hat, OCP & EMC) Training Programs,	
K2	**Relate** recent trends and current research in the field of Computer Science.	Active Class participation as Group Activity, Presentation on Cutting edge Technologies, Interactive Class Participation [Cross Questioning], Tutorials, Field training, Technical Reports writing, Case-Studies & Group Discussion [Deductive | Inductive], Project development & presentation	Peer-Reviewing of each other's work, Inter College Mini-Project Competition, Certification (AWS, JCP, Linux, Red hat, OCP & EMC) Training Programs, Participation in Scientific seminar	
Skills				
S1	**Analyze** complex computing problems to apply principles of computing and other relevant disciplines to identify solutions.	Visual & Verbal [Lectures / Presentations], Active Class participation as Group Activity, Visual & Practical [Lab Session] / Lab Demonstration, Interactive Class Participation [Cross Questioning], brainstorming, Tutorials, Field training, Technical Reports writing, Problem Solving [numerical | exercise questions], Explanation through Interactive Videos, Case-Studies & Group Discussion [Deductive | Inductive], Project development & presentation	Peer-Reviewing of each other's work, Inter College Mini-Project Competition, Certification (AWS, JCP, Linux, Red hat, OCP & EMC) Training Programs, Participation in Scientific seminar	
S2	**Evaluate** problem-solving strategies to propose a large number of solutions and come up with the best possible solution.	Visual & Verbal [Lectures / Presentations], Active Class participation as Group Activity, Visual & Practical [Lab Session] / Lab Demonstration, brainstorming, Tutorials, Technical Reports writing, Problem Solving [numerical | exercise questions], Case-Studies & Group Discussion [Deductive | Inductive], Project development & presentation	Peer-Reviewing of each other's work, Inter College Mini-Project Competition,	
S3	**Design** and **implement** computing-based solutions to meet a given set of computing	Visual & Verbal [Lectures / Presentations], Visual & Practical [Lab Session] / Lab Demonstration, Tutorials, Field training, Project development & presentation	Student's Computer Club Activities, Inter College Mini-Project Competition, Certification (AWS, JCP, Linux, Red hat,	

	requirements in the context of the program's discipline.		OCP & EMC) Training Programs,	
S4	**Apply** computer science theory and software development fundamentals to produce computing-based solutions.	Visual & Verbal [Lectures / Presentations], Visual & Practical [Lab Session] / Lab Demonstration, brainstorming, Tutorials, Field training, Project development & presentation	Student's Computer Club Activities, Inter College Mini-Project Competition, Certification (AWS, JCP, Linux, Red hat, OCP & EMC) Training Programs,	
S5	**Communicate** effectively in a variety of professional contexts for technical and non-technical audiences.	Active Class participation as Group Activity, Presentation on Cutting edge Technologies, Interactive Class Participation [Cross Questioning], Field training, Technical Reports writing, Case-Studies & Group Discussion [Deductive	Inductive], Project development & presentation	Student's Computer Club Activities, Inter College Mini-Project Competition, Certification (AWS, JCP, Linux, Red hat, OCP & EMC) Training Programs,	Community Services @ Regional Public Places, Play/ drama/ theatre/ Cultural Events and Games
Values				
V1	**Recognize** professional and social responsibilities to make informed judgments in computing practices based on legal and ethical principles.	Visual & Verbal [Lectures / Presentations], Presentation on Cutting edge Technologies, brainstorming, Field training, Project development & presentation	Peer-Reviewing of each other's work, Student's Computer Club Activities, Participation in Scientific seminar	Community Services @ Regional Public Places, Indoor/Outdoor games, Play/ drama/ theatre/ Cultural Events and Games
V2	**Demonstrate** the ability to function effectively as a member or leader of a team engaged in activities appropriate to the field of Computer Science.	Active Class participation as Group Activity, Visual & Practical [Lab Session] / Lab Demonstration, Presentation on Cutting edge Technologies, Interactive Class Participation [Cross Questioning], brainstorming, Field training, Technical Reports writing, Case-Studies & Group Discussion [Deductive	Inductive], Project development & presentation	Peer-Reviewing of each other's work, Inter College Mini-Project Competition, Certification (AWS, JCP, Linux, Red hat, OCP & EMC) Training Programs	Indoor/Outdoor games, Play/ drama/ theatre/ Electronic games/ Cultural Events and Games
V3	**Identify** the need for and an ability to engage in continuing professional development and entrepreneurship.	Visual & Practical [Lab Session] / Lab Demonstration, Tutorials, Field training, Technical Reports writing, Project development & presentation	Inter College Mini-Project Competition, Certification (AWS, JCP, Linux, Red hat, OCP & EMC) Training Programs	Indoor/Outdoor games, Play/ drama/ theatre/ Cultural Events and Games

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.

College of Computer Science and Information Technology, Jazan University adopting an effective system to assess and assure that PLOs are achieved or not. Assessment is the process of forming a judgment about the quality and extent of student achievement or performance, and therefore by inference a judgment about the learning itself. Assessment inevitably shapes the learning that takes place; that is, what students learn and how they learn it should reflect closely the purposes and aims of the course of study. For this purpose, direct and indirect assessment and analysis is conducted.

Assessment methods are the strategies, techniques, tools and instruments for collecting information to determine the extent to which students demonstrate desired learning outcomes.

Methods will vary depending on the learning outcome(s) to be measured. **Direct methods** are when students demonstrate that they have achieved a learning outcome or objective. **Indirect methods** are when students (or others) report perceptions of how well students have achieved an objective or outcome.

PLO's will be tested in both ways (Direct and Indirect Assessment Methods).

Direct Assessment: The table given in section-4 reflects the mapping table between courses and the domain of PLO's.

PLO's will be further mapped with CLO's in a more rigorous way. Achievements of student grades in certain CLOs of particular courses will reflect the achievement level of individual PLO.

Direct assessments of PLOs include:

🞢 **Assessment of Knows: Knowledge and understanding**

Student outcomes attainment assessment: Courses outcomes achievement assessment through a combination of written exams (**Quizzes, midterm examinations, and final examination**), **homework, class participation, oral presentation, project work, viva voce, research and literature search assignments and summary reports of seminars** attended by the students.

🞢 **Assessment of Knows How: Skills**

Student outcomes attainment assessment: Courses outcomes achievement assessment through a combination of **written exams, homework, quizzes, laboratory performance and reports, oral presentation, project development and demonstration, viva voce, mini project development and demonstration, research and literature search assignments and summary reports of seminars and project reports** by the students.

- Through exams performing, the student should learn to manage the time and respect deadlines.
- Assessment of assignments within the relevant courses that have elements of Cognitive skills should include an individual component for the contribution of each student. Concentration on problem solving skills
- The individual project assignments in relevant courses should contain independent study skills and include this element in the assessments of those assignments.
- Assessments of assignments include portion of grade for effectiveness of investigation processes.
- In field training, assessment is evaluated by the training firm, training Program Specifications, committee and the supervisor.
- Graduation project development, report writing and presentation.

➕ **Assessment of Shows: Communication and Interpersonal Skills**

Student outcomes attainment assessment: Courses outcomes achievement assessment through the demonstration of learning **oral presentation, project demonstration, viva voce, mini project demonstration, research and literature summary reports of seminars and project reports** by the students.

- Assessment of group assignments within the relevant courses that have elements of interpersonal skills should include an individual component for the contribution of each student.
- Graduation project report writing and presentation.
- Mini project report writing and presentation
- Demonstration of developed projects

➕ **Assessment of Does (performance assessment): Value**

Student outcomes attainment assessment: Courses outcomes achievement assessment through a combination of written exams, homework, laboratory performance and reports, oral presentation, testing of the project work, , mini project development and demonstration, research and literature search assignments and summary reports of writing individually or as a member of a group.

- Strong work ethics. Workplace-based assessment.
- Lifelong leaner, continuous professional development

Indirect Assessment. Indirect measures compliment direct measures by providing supportive evidence, information, and student perspective. In other words, Indirect Assessment Methods are methods for assessing secondary information on student learning that do not rely on actual samples of student work.

Indirect Assessment of PLOs include:

Gathering information through means other than looking at actual samples of student work. The student, graduates and alumni decides what he or she learned and how well it was learned. Course Evaluation Survey

- University Experience Survey (Mid-Level Students)
- Program Evaluation Survey (Final Level Survey)
- Exit Student Survey (Final level – Exit student)
- Employer Survey
- Alumni Surveys

An exit Survey is pertinent to the achievement of PLO's. In the final year feedback of the graduating students will be recorded to measure their satisfaction with PLOs.

Target Benchmark

Targets are the expected level of aggregated student achievement, for each measurement method (direct and indirect). Targets are usually expressed in terms of the number or percentages. For example, the target benchmarks for all PLOs was adopted as follows: 70% - 90% achievement depending on specific PLO through direct assessment method and converted to 5 Likert scale. PLO's achievement through indirect assessment i.e., surveys, satisfaction at 3.5 out of 5.

#	Program Learning Outcomes	Assessment Method	
		Direct	Indirect
Knowledge and Understanding			
K1	**Describe** the sound knowledge of principles of Computing, Science and Mathematics required in the field of Computer Science.	Exams, Assignments, Viva voce, Quizzes, Classroom participation, Viva Voce	Exit student survey
K2	**Relate** recent trends and current research in the field of Computer Science	Research Assignments, Mini Project, Case Studies, Class participation, GP report, Viva Voce	Exit student survey, Alumni survey
Skills			
S1	**Analyze** complex computing problems to apply principles of computing and other relevant disciplines to identify solutions.	Exams, Assignments, Lab Exams, Problem Solving Questions, Final Project development.	Exit student survey,

S2	**Evaluate** problem-solving strategies to propose a large number of solutions and come up with the best possible solution.	Laboratory Exercises, Lab Exams, Case Studies, Problem Solving Questions, Exams, Assignments,	Exit student survey, Alumni, Employer, Course evaluation, Program evaluation survey, University survey
S3	**Design** and **implement** computing-based solutions to meet a given set of computing requirements in the context of the program's discipline.	Laboratory Exercises , Lab Exams, Mini Projects, Graduation Project development,	Exit student survey, Alumni survey, Employer survey
S4	**Apply** computer science theory and software development fundamentals to produce computing-based solutions.	Exams, Assignments, Laboratory Exercises, Lab Exams, Mini Projects, Exam, Field Training, GP development	Exit student survey, Alumni survey, Employer survey
S5	**Communicate** effectively in a variety of professional contexts for technical and non-technical audiences.	Mini Project Presentation, Final Projects Defense Viva & presentation, technical report writing	Exit student survey, Course evaluation survey, Program evaluation survey, University survey, Employer survey
Values			
V1	**Recognize** professional and social responsibilities to make informed judgments in computing practice based on legal and ethical principles.	Field Training Assessment, Community Services Participation	Exit student survey, Alumni survey, Employer survey
V2	**Demonstrate** the ability to function effectively as a member or leader of a team engaged in activities appropriate to the field of Computer Science.	Group Assignments, Mini Projects, GP presentation, Case studies	Exit student survey, Alumni survey, Employer survey, Course evaluation survey
V3	**Identify** the need for and an ability to engage in continuing professional development and entrepreneurship.	Observations, and judgments about technology views, Mini Project Presentation, Graduation Project demonstration	Exit student survey, Course evaluation survey, Program evaluation survey, University survey

D. Student Admission and Support:

1. Student Admission Requirements

Admission Requirements

1) The student should be a Saudi national or his mother should be a Saudi national or a non-Saudi woman married to a Saudi and have children (at least 2)

2) The student must have obtained a high school diploma or academic equivalent from inside the Kingdom or abroad.

3) Must not have received high school or its equivalent for more than five years. (Other than colleges that require the least number of years).

4) The student must not have been dismissed from the university or any other university due to academic or behavioral reasons. It is required of any student who has previously studied at any university or college to provide documentation that he has not been dismissed academically.

5) The student must obtain permission from the concerned party that he is free to study if he is employed eitherin the government sector or the private sector.

6) Successfully passed the test or interview by the University Council. Be medically fit.

7) That meets any other conditions determined by the Board of the University and at the time of submission.

8) Acceptance is based on the set percentage that is determined by the University

9) Any other conditions set by the university at the time of document submission.

Admission and Registration

1) Upon primary online nomination, applicant will see three options:

A. (Accept and Confirm)

Pressing this option means that the applicant is accepting the offered primary nomination and confirms it as final acceptance without any competition for other specialty in case seats are available.

B. (Accept and Upgrade)

Pressing this option means that the applicant is accepting the offered primary nomination with and authorizes the university to upgrade their admission to another program if a seat becomes available.

C. (Withdraw)

Pressing this option means that the applicant does not accept the offered primary nomination. This is considered a final withdrawal and a withdrawal form can then be printed online.

2) Not confirming primary nomination within the allowed time means that the applicant does not wish to join Jazan University. This will cause the applicant to lose their right to admission and as will as their access to their online account.

3) At the end of acceptance process applicant's state online is changed to (primarily accepted) or (finally accepted) and receives college, specialty, and student number online.

4) An applicant can withdraw after receiving student number by printing a Withdrawal form (a Clearance form) online. In this case the current admission will be terminated and the applicant will be eligible for admission after two academic years.

5) Accepted students should complete the final acceptance procedure by making reservation for issuing University Student card following these steps:

- *Sign in to the online account.*

- *access the University Student Card page (using student number or national id number)*

- *select a date for issuing student card*

- *print out student card issue date slip*

- *Print out notice of admission slip having met these conditions, the final admission is confirmed.*

Re-admission

A dropped-out student can apply for readmission at the Deanship of Admission and Registration according to these rules:

- *A readmission request should be submitted prior to the intended readmission semester*

- *A readmission request has to be approved by the student's college council or any third party authorized by this council.*

- *If the expulsion occurred four semesters prior to the intended readmission semester (or two academic years in colleges that follow the full year system), a student can then apply for a new admission where admission conditions apply and a new university ID is issued.*

- *Readmission is allowed only once and University Board has authority to make exceptions.*

- *Readmission is not allowed for students expelled for academic or disciplinary reasons.*

Transfer Policies

A. Transfer from National and International Universities

1. Transfer to Jazan University is allowed by acceptance of Dean of Faculty to which transfer is required according and the rules:

- *Applicant was enrolled in an approved college/university.*

- *Applicant was not dismissed for academic or disciplinary reasons from*

college/university of origin.

- *Applicant meets requirements set by Faculty Board and has GPA no less than 3.0 out of 5.00.*

- *Application is made during time set for transfer during academic calendar.*

- *Applicant should have at least 60% of units left to study in Jazan University.*

2. Applicant will be denied admission in case it was revealed that he/she was dismissed foracademic or disciplinary reasons from university of origin.

3. A student is transferred in any given semester from one university to another according toannounced procedures and dates in the target university and within general transfer regulations.

4. Courses completed in university of origin and valued by Department Board and are approved byFaculty Board and added to applicant's academic record and accounted for in GPA.

B. Internal Transfer

1. Internal transfer in Jazan University is granted upon approval of Deans of both Faculties.

2. Internal transfer is allowed only once.

3. Applicant should have GPA not less than 2.00 out of 5.00.

4. Applicant should not have exceeded 4 semesters in Faculty of origin.

5. Applicant should fulfill requirements for Faculty to which internal transfer is required.

6. Applicant finished courses are added to academic record including grades and GPA.

The applicants fulfilling all the requirements are admitted in the program, the number depends on the number available seats identified on the basis of the college capacity. In 2019, "Student Guide", was published, which is a comprehensive guide for all students admitted to various programs run under Jazan University. The booklet intended to serve as a guide for students helpful to understand the regulations. The guide contains important information related to academic, student related activities and services, rights and duties of the students. It clearly describes the mechanisms of admission for male and female students. It also explains the transfer rule from other universities or colleges running bachelor in computer science program.

These regulations are available on the portal of

http://deanships.jazanu.edu.sa/sites/en/adm/Pages/Default.aspx

http://edugate.jazanu.edu.sa/jazan/files/app_terms.pdf

2. Guidance and Orientation Programs for New Students

As the new students joining the program are coming from school level to the university level (higher education level), therefore, they required to properly understand the difference between two levels of study and their responsibilities and duties associated with this transition.

Consequently, Unit for student affairs is directly working under the dean at the college level and is responsible for conducting Orientation Program for the new entering students in the first or second week. Regulations and material provided by the Deanship of student affairs are passed on to students in form of handouts or electronic presentations. Students are taken for a campus visit to main places for their different needs throughout the degree program duration. Dean, HOD's, Unit Heads, and Committee Heads explain their roles, responsibilities, teaching and learning activities and working nature, so new students get aware of environment? In this way, they can easily and smoothly adapt to the system. Students are provided access to electronic access to the Edugate and Blackboard system so they can easily start their academic activities right from the beginning. The College web site also display information regarding academic activities and environment in the college. It explains about laboratories, class rooms, library facilities, and staff members. The Blackboard platform offers excellent method of approaching students in terms of online lecturing, conducting quizzes and other assignments.

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

Department has an arrangement for **"Academic Counseling and Support"** for each student by the department. The Department Coordinator will nominate faculty members for the "**Student Academic Advisory Committee"** every semester. These **"Academic Advisors"** are responsible for student counselling and advising a group of a fixed number of students (around10-15 students) and maintaining students' files. At the beginning of the semester and at the time of course registration all students take counselling from the Academic Advisor according to his previous grades and coverage of pre-requisite course and follow-up.

In addition, students with GPA below 2.28 remain under deep observation and continuous meetings with respective course teachers about their performance are arranged to help and support the students. The course teacher is to be associated with this course to provide proper guidance for students who are looking to focus on their future career based on their intellectual interests, identify better opportunities related to this course and connections in their academic fields.

The course teacher will commit to a minimum scheduled time for student consultation equivalent to

3 HOURS PER WEEK and will have prescribed times set aside for individual appointments with students. The students will be advised at the commencement of every semester for teacher consultation hours for seeking advice and support.

The appointments may also be arranged outside of the prescribed time, at a time mutually convenient to the staff member and student. The group consultation appointments should also be scheduled outside of the prescribed time, to allow individual appointments to be made as necessary at that time.

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

Low achievers: When the students' performance is inadequate, tutorial / remedial coaching is provided to the students to improve their performance. Students Affairs Unit was formed by the College Council to assist the students. It has been assigned the job to assist the students in every aspect of educational assistance, including orientation programs, academic advising, course registration, office hours, examination issues, supervision of student assessment performance, etc.

The academic advisory provides academic assistance such as tutorship or extra classes of the particular courses to weak students which succors them in enhancing their performances during exams.

Policy and procedure for tutorship which mentions, the students know of a particular course that can guide the students with low grades. Interested students give their details and fill the form for tutorship. A weekly office schedule is displayed in each faculty member's office, and office hours are specified for the students to provide them with extra assistance in solving their academic problems. The underachievers are supported by the Academic Advising Unit throughout the semester.

Disabled: The college has many facilities for the special need of its students like Special parking, Ramp for wheelchair facility, elevators, washrooms for special needs etc. The facilities are provided as per International Standards with the quality and adequacy and are monitored by the specialized team on a regular basis. The proper notices and equipment's for the health and safety have been provided in due locations.

1) Ramps have been made at the entrance of each gate of the college building so that they can easily enter the building especially classrooms and lab buildings.
2) Classes and Labs are arranged on the ground floor and if possible at a suitable time for those sections in which special needs students are enrolled (as per request).
3) Lift facilities have been provided for a student for easy accessibility.
4) Car parking for special needs students.
5) Separate washroom with suitable equipment's for special needs students

Gifted and talented: The college administration and faculty are proud to support and motivate the gifted, creative and talented students undertaking the program. These students are identified based on their GPA and various activities conducted by the college, and they are awarded on a yearly basis by the Dean of the college and by the university.

The students are also motivated to take part in competitions at the national level and college(s) level (inter-college completion). The students are being trained for these competitions and Mini projects throughout the semester.

The Computer Club also works in these activities by making arrangements for the exhibition and competitions where students are participating from the college as well as from other local institutions of the JAZAN city. The College of Computer Science & Information Technology has conducted the inter-level college competition the competition aimed to foster creativity, teamwork, and innovation in building new software programs and enabling students to test their ability to perform under pressure.

Department encourages the students to participate in programming competitions conducted by the universities of the Saudi Arabia.

E. Teaching and Administrative Staff

1. Teaching and Administrative Staff

Academic Rank	Available Staff Details		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professors	0	0		2	2	4
Associate Professors	0	2		2	2	4
Assistant Professors	0	25	Artificial Intelligence, Cloud Computing, Data Science Software Engineering, Security	15	15	30
Lecturers	44	16		25	35	60
Teaching Assistants	2	0		3	3	3
Technicians and Laboratory Assistants	1	0		2	2	4
Administrative and Supportive Staff	15	0		2	10	12
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

The orientation program is aimed and conducted to promote a positive experience for the new staff and to acclimatize them with the necessary information. This is essential to make a smooth transition in order to blend in with the new work environment. The goal of the orientation program is to bring consistency across the University with regards to their roles and responsibilities, the faculty in which they work and the available resources. The objectives of the orientation program are directed towards improving the work performance, adapting and implementing the teaching and learning strategies in accordance with the policies of Jazan University and the College along with a commitment to life-long learning. At the end of the program, the new faculty members will be aware of the teaching strategies, administration system, research concepts & responsibilities, and continuous professional development.

The orientation program is managed by the office of academic affairs in coordination with the office of Vice-dean for Development. The program is conducted at the beginning of the academic year and is announced through the Head of the departments to their staff.

Dean, HODs, Unit Heads, and Committee Heads explain their roles, responsibilities and working nature, so that, the new faculty member can easily and smoothly adapt the system and become more aware of the environment system.

A new faculty member will be given a copy of the Faculty Handbook that contains all information about the duties and responsibilities of the faculty, including the rights, privileges and code of conduct.

Department handbook copy is also produced to the new member to now about the committees in detail, Study Plan, Course Catalogue, Organizational Structure of the Department etc.

The agenda is structured in a way to familiarize the staff with-

- Functioning of the program
    - Introduction to the College
    - The vision and mission of the college along with the goals of the strategic plan
    - Alignment of mission, goals, graduate attributes and PLO's with college mission and goal.
    - Reporting relationships
    - Administrative workflow
- Attendance policies of Jazan University for faculty.
- Academic policies and procedures, program curriculum, teaching and learning strategies and assessment methods.
- Quality management system.
- Research goals and opportunities.
- Facilities (Jazan University Edugate system, Blackboard, Saudi Digital Library and Zoom Software)
- General staff affairs (Code of conduct, annual evaluation, health and safety requirements)

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.)

Continuing professional development is focused towards a self-directed, systematic and ongoing approach to be life-long learner and its application to practice. It encompasses formal and informal learning activities that aid in development and maintenance of competencies along with enhancement of professional practice.

These professional development activities are designed to enhance the professional knowledge and skills of individual faculty member's academic discipline or professional by the excellence unit. Training needs survey conducted in the beginning of the academic year to prepare the plan based on the requirements of the faculty members. As well as training surveys provides information about the expertise of the faculty members and their welling to present/ or conduct the workshop or training for technical and non-technical staffs.

The staff member's performance should not be affected by her/his part-time consultation especially with regard to the following:

a. The staff member's teaching load.

b. The staff member's presence for her/his office hours, or in clinics, laboratories, and computer centers according to the nature of the work.

c. Actively participating in the University councils and committees. Conferences, Symposia, and Seminars Attendance

The University may grant tickets and transfer allowance to staff member participating in a conference or symposium or can only allocate tickets or attendance permission without any financial commitment. Delegation and Secondment.

The major activities include, but are not limited to:

Orientation Program:

- To provide an orientation program for all new personnel.
- To identify personnel who excel in their respective disciplines or departments from the college level.
- The excellence unit conducts a faculty orientation program every new academic year as a periodic event for the newly joined faculty.

Professional Development:

- To provide opportunities for the improvement of professional competence among faculty.
- To provide professional development activities for all faculty related to technology (ICT).
- The excellence unit provides online freelancer courses on recent technologies. To encourage the awareness of all faculty/staff of the value of diversity.
- The college is granting permission to attend seminars/workshops/ conferences national or International.
- To provide opportunities to discuss course-related challenges with experts in their department.
- The faculty provides a platform for the entire teaching faculty to discuss freely with the senior faculty either department or inter-department of the college to enhance their knowledge.

Teaching & Learning:

- The excellence unit provides training related to advanced teaching and learning technologies like Blackboard training and other ICT related tools for effective teaching.
- Faculty those who multidimensional knowledge on different technology are identified and utilized for academic growth like domain experts, course coordinators, tack leaders, project supervisors and certification trainers etc.

- To encourage the faculty to discuss the student-related dispute with the Head of their department.
- The faculties are advised to discuss the student-related dispute with the Head of their parent department to solve the issues immediately.

Learning Outcome:

- Designing and developing activities based on identification of professional gaps and educational needs.
- Specific and measurable learning outcomes
- Ensuring that the content is evidence-based and free of bias and conflicts of interest.

Evaluation of faculty:

- To annually review current faculty and staff qualifications and discuss professional development plans and activities with each employee.
- End of every academic year, all the faculty profile is evaluated in the name of the faculty appraisal by their respective department.

Faculty training needs:

- In the beginning of each academic year training need survey is conducted to plan the training and workshops based on their feasible requirements and on recent trends and technologies.
- To provide faculty to participate in industrial certification training and certification.
- The excellence unit is providing a platform for the entire faculty who are willing to enrich their knowledge in recent technologies like networking, database, operating systems and cloud technologies in the name of certification training from various industry experts like CISCO, ORACLE, EMC, Red Hat and ORACLE JAVA.
- To promote wellness, by providing opportunities for faculty and staff participation in planned activities like workshops, seminars, and conferences etc., (National / International).

Other professional development including knowledge of research:

- The research coordinator of the department on a weekly basis to improve their learning and teaching, research and development skills conducts a series of research seminars.
- A series of workshops was given to the faculty members on how to draft a funded project proposal.
- A series of technical seminars given by the faculty members on their area of expertise to other faculty members for their specific courses and lab work.

F. Learning Resources, Facilities, and Equipment

1. Learning Resources.
The mechanism for providing and quality assurance of learning resources (textbooks, references and other resource materials, including electronic and web-based resources, etc.)

The requirements of textbooks, references and other resource material including electronic and web-based resources for teaching are identified by the instructor teaching the course.

The faculty and teaching staff for planning and acquisition of textbooks, references and other resource material including electronic and web-based resources are doing the following process:

- By the end of each academic year circular is sent to the Heads of Departments to raise their needs of textbook, references and other resource material including electronic and web-based resources.
- Each Head of Department assigns a member of teaching staff and to fill out forms to be approved by the Dean and sent to Deanship for Library for further process.
- Curriculum development and assessment committee advice and monitor acquisition of textbooks.

Every course has been appointed a coordinator called "Course Coordinator". His job is to take care of the entire responsibilities of the course such as design and maintaining the course curriculum, arranging the meeting with the Faculties to synchronize the course teaching material etc. In addition, this coordinator is responsible to select the textbook and other referenced teaching material for his course. The entire material is designed by the Course Coordinator and inspected by the Tract Leader in terms of Quality, Author and the old and the latest version of the said textbook.

Finally, the entire material is thoroughly inspected by the Course Curriculum Team / Academic Council and then the Final Syllabus and as well as the Text Book and other referenced teaching material is approved. Once the Text Books and other referenced teaching materials are approved then the students are informed that they can use the required Book for the said course.

- The Course Coordinator is responsible to upload the approved Text Book and other referenced teaching material online on Blackboard in LMS (Learning Management System) so that the students would be benefited from the online Text Book.
- Learning resources includes Saudi Digital library with access to national and international journals (peer reviewed, free access), dissertation, thesis, e-books for all courses.
- Classrooms with smart boards and projectors, laboratories with specialized equipment's and software etc available.
- Program conducts meetings via video conferencing to support teaching and learning process
- These selected books are forwarded to HOD to consult with the higher authority for acquisition at University and Library levels.
- They are required to consult the main University Library for the required textbook or reference.
- If the required text is not available, they are required to consult the College internal library for books.

- They are also required to check the online resources for text and reference on the e-books databases.
- Feedback from faculty and students, Curriculum development and assessment committee periodical evaluation.

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

The college has a committee (Facilities and Laboratory Committee) that has the responsibility to evaluating and planning for the requirement of resources including classrooms, laboratories, library and other resources through surveys submitted to students and staff. According to the evaluation results, a report is then sent to college's administration unit for further action. Faculty and staff members generally follow the procedures, which typically start by submitting their requests in appropriate forms through their Department Heads.

- In the faculty, laboratories are classified into two categories like General Purpose Labs & Special Labs. In general labs, computers are equipped with the most frequently required software for all courses for trio Programs (CS|IS|CNET).
- Special labs are equipped with special software's and hardware's and that are allocated according to course requirements.
- Labs are secured through Biometric Lock System and are accessible only for the registered faculty members in selected timings according to schedule.
- The same goes with the classrooms they are already installed with overhead projectors mounted with the ceiling and helpful during the lecturing, before that all faculty members are provided laptops to use electronic aid in the classes.
- To carry out a smooth running of all the courses, the classrooms are equipped with adequate number of seats, proper ventilation, lighting and state of the art facilities like multimedia projectors, internet connection, and white boards.
- Portable projectors are also available in the male and female sections for use in the laboratories and in classroom incase if any projector stops working.
- All classrooms are maintained and monitored regularly by the maintenance department.
- Stationary resources are divided amongst the faculty members at the beginning of each term by the department.
- The new campus has a well-established library in the building. The department achieved the library with the support of the college and university council.
- The CSIT College well-equipped library caters to the needs of faculty members and students. Library is ventilated, Wi-Fi enabled air-condition hall with a seating arrangement. Desktop computers are also available in the library. It also has a waiting area.
- The requisition is sent to the Department Head by conducting a staff meeting for the required Text Book. The HOD arranges the said course book.
- Any other requirement of acquisition of the material the requisition is sent to the HOD then he takes care of these materials whether it belongs to Class or Laboratories.
- Other support facilities are also provided such as photocopying and printing to help in study and research activities.

- Laboratories Administration Committee asks for required software resources at the Laboratory of Computer Science every semester and sends the process to the higher authority for the acquisition of required Laboratory Software and Hardware.

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

The campus is newly built and provides state of the art safety services. Fire safety and other safety equipment are available in the labs and building.

SAFETY REGULATIONS

I. Fire Safety

Policies dealing with fire safety are life and death matters. Everyone at the college campus must take the policies regarding this area with the utmost seriousness. Anyone violating these policies is subject to possible prosecution from both the college and local authorities. In addition, individuals can be legally liable for other civil and criminal negligence should a fire or other related problem occurs. Certain doors are designated for "Emergency Exit Only." These doors are clearly identified, and are to be used only in cases of a true emergency, such as a fire, fire drill, tornado, etc. Students who violate the "emergency exit only" restriction will be subject to disciplinary action

Fire safety equipment, including extinguishers, exit signs, fire doors, and smoke alarms should be in working order at all times. Tampering with these safety devices is a violation of state law and can endanger lives and property. Individuals found to be responsible for such actions as pulling fire alarms, dispensing fire extinguishers, and disabling smoke detectors will be dealt with severely, including possible criminal prosecution.

II. Door Access (Unauthorized entry)

Unauthorized entry or use of university facilities, the reproduction or unauthorized use of college keys, unauthorized accessing, destruction of, or interference with computer programs, computer data bases, computer files, or computerized information stored in college computer systems is prohibited. The use of force to open the main door of a building is considered vandalism. Students found doing this may be subject to this policy as well as costs associated with repair.
Range of sanction from disciplinary warning through expulsion. Certain doors on campus are locked for purposes of security. Some doors are also required by fire code to remain closed except when in immediate use. The propping of any of these doors can seriously compromise the safety and security of others, and therefore cannot be tolerated. Anyone found propping one of these doors open would be subject to disciplinary action.

III. Labs Security and safety measures

Safe working conditions help prevent injury to people and damage to computer equipment. A safe workspace is clean, organized, and properly lighted. Everyone must understand and follow safety procedures.

Follow the basic safety guidelines to prevent cuts, burns, electrical shock, and damage to eyesight. As a best practice, make sure that a fire extinguisher and first-aid kit are available in case of fire or injury. Poorly placed or unsecured cables can cause tripping hazards in a network installation. Cables should be installed in conduit or cable trays to prevent hazards.

This is a partial list of basic safety precautions to use when working on a computer:

- Turn off the power and unplug equipment before performing service.

- Never open a power supply or a monitor.
- Do not touch devices that are hot (soldering) or that use high voltage?
- Know where the fire extinguisher is located and how to use it.
- Keep food and drinks out of your workspace.
- Keep your workspace clean and free of clutter.

IV. Handling of Electricity in specialized labs

Follow electrical safety guidelines to prevent electrical fires, injuries, and fatalities in specialized labs. Power supplies and monitors, hardware and networking devices contain high voltage.

CAUTION

- Do not wear the antistatic wrist strap when repairing power supplies or monitors.
- Only experienced technicians should attempt to repair power supplies and monitors.
- Electrical devices have certain power requirements. For example, AC adapters are manufactured for specific machines or devices.
- Exchanging power cords with a different type of device may cause damage to both the AC adapter and the equipment in the lab.

G. Program Management and Regulations

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

The program has a well-structured organizational hierarchy of administration systems. The program has a well-structured organizational hierarchy of administration systems. The Dean, who is the head of the college, and the college administration also have Vice-Dean, HODs, and Manager to run the system effectively. Consistency in leadership, clear vision and commitment has seen tremendous progress in all functional areas of the college fulfilling its mission and goal. Department of Computer Science has well-structured committees that are responsible for different tasks within the department

- The program organization of the College of Computer Science and Information Technology begins with the dean who conveys the duties and has the legitimate expert in all parts of the program.
- The dean has the duty of dealing with scholarly organization cycle inside the college and departments.
- Program administrators are providing effective and responsible leadership for the development and improvement of the program.
- Program administrators anticipate any issues and opportunities and exercise initiative in response.
- Program administrators also provide leadership and encourage and reward initiative on the part of teaching and other staff.
- Regular feedback is given on performance of teaching and other staff by the Head of the department.

- Review and recommend to the department council on existing and proposed curricula, courses, prerequisites, co-requisites, advisories and programs.
- Support the planning, organization and delivery of a comprehensive range of staff development activities and ensure these activities are thoroughly tracked, monitored and evaluated.
- Ensure a safe and healthy environment for both staff and students, and full compliance with health and safety requirements.

The diagram below explains the program structure of the Department of Computer Science in general and the Bachelor in Computer Science program structure in specific.
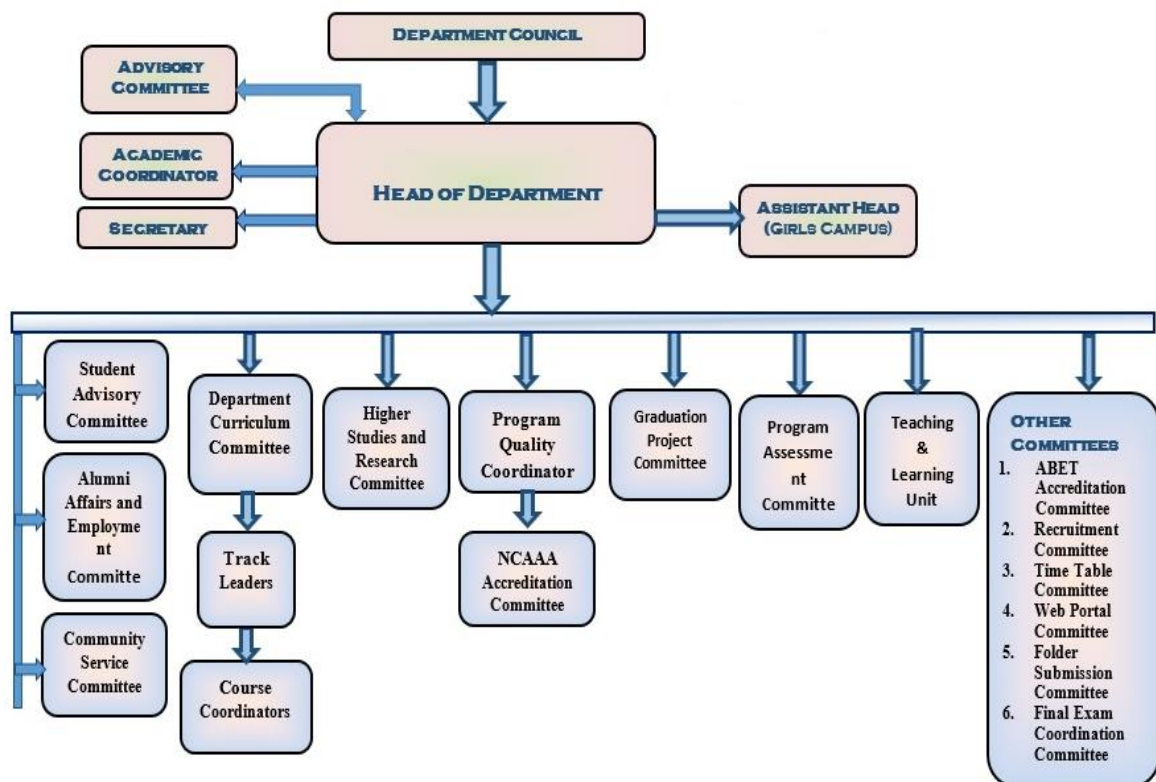
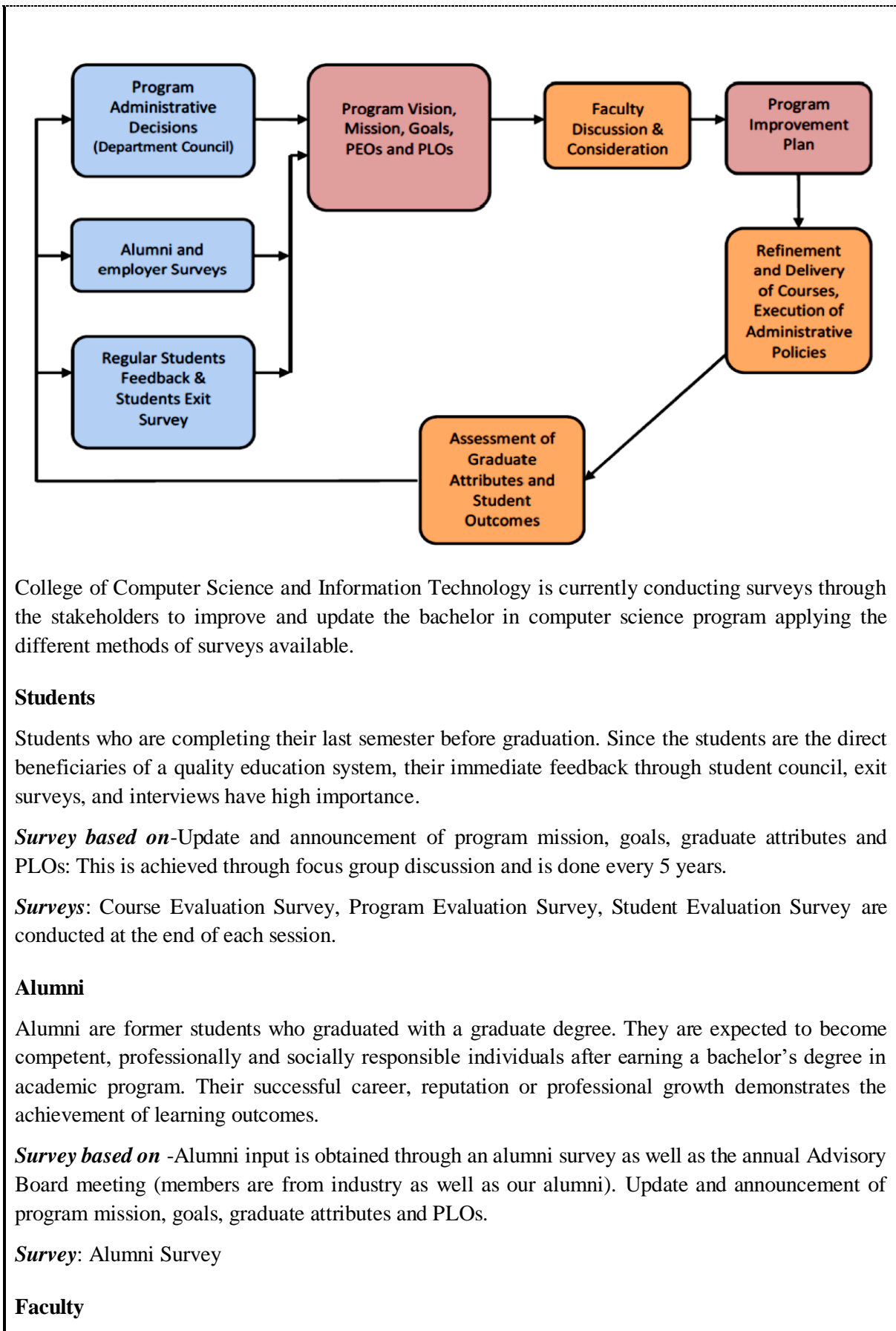**Program Committees, Units, Councils roles and responsibilities**:

https://drive.google.com/file/d/1VAx6_D6uAoGZlTCEIA5aifRrg9b8nLYr/view?usp=sharing

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.)

The stakeholders have their unique perspectives and interest in the assessment process, success and continued improvement of the education offered at Jazan University.

Stakeholders are continuously involved in the planning and review for assessing the program execution that is further used for the improvement plan. Feedbacks in form of surveys are gathered from faculty, students, alumni and employers.

College of Computer Science and Information Technology is currently conducting surveys through the stakeholders to improve and update the bachelor in computer science program applying the different methods of surveys available.

Students

Students who are completing their last semester before graduation. Since the students are the direct beneficiaries of a quality education system, their immediate feedback through student council, exit surveys, and interviews have high importance.

Survey based on-Update and announcement of program mission, goals, graduate attributes and PLOs: This is achieved through focus group discussion and is done every 5 years.

Surveys: Course Evaluation Survey, Program Evaluation Survey, Student Evaluation Survey are conducted at the end of each session.

Alumni

Alumni are former students who graduated with a graduate degree. They are expected to become competent, professionally and socially responsible individuals after earning a bachelor's degree in academic program. Their successful career, reputation or professional growth demonstrates the achievement of learning outcomes.

Survey based on -Alumni input is obtained through an alumni survey as well as the annual Advisory Board meeting (members are from industry as well as our alumni). Update and announcement of program mission, goals, graduate attributes and PLOs.

Survey: Alumni Survey

Faculty

Faculty are the academic staff of a university: Professors of various ranks, lecturers, and/or researchers. Their primary educational responsibility is to create an environment for leading the students to an effective lifelong learning process. Faculty input is obtained through regular Department/College Council meetings, Curriculum Committee meetings, and course reports.

Survey based on - Update and announcement of program mission, graduate attributes goals, and PLOs: This is achieved through focus group discussion and is done every 5 years.

Surveys: Faculty feedback, faculty satisfaction survey.

Department Council/Community representatives

Survey based on - Update and announcement of program mission, graduate attributes, goals and PLOs: This is achieved through a meeting which is done when ever any change is implemented.

Surveys: Feedback and Survey are conducted at the end of each session or meeting.

Employers/industry partners

Employers are those who are expected to hire new employees (graduated from JU) who are competent, productive, self-motivated learners, team players, and have excellent communication skills.

Survey based on - Survey of PLO's achievements and abilities of graduates is done annually

Survey: Employer Survey

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.)

Jazan university has released a comprehensive handbook as a guide for the current and prospective students. This handbook contains detailed information including application for admission, selection procedures academic programs, facilities, student activities and services, regulations for examinations, requests & complaints, student appeals, rights and duties. This guide is publicly available at the following web link:

https://drive.google.com/file/d/1TzL7jUspeMJMXIo2FgDhdPOulNg6bh84/view?usp=sharing

The specific information regarding BCS program, including rules and regulations for students, student activities and services have been mentioned in "Student Handbook" whereas study plan, course description, academic activities & assessment and faculty information in "Program Handbook" released by Department of Computer Science, Jazan University. These handbook is publicly available at the following web link

- Program handbook
- Student handbook

Department follows the regulations as prescribed in SOPs prepared by QAU for the whole college. Following is a list of SOPs to execute major and frequent tasks under the department:

- ❖ Teaching & Learning
- ❖ Examination (relative to a faculty member)
- ❖ Academic Advising
- ❖ Tutorship

- ❖ Course Report & Program report evaluation
- ❖ Invigilation duties
- ❖ Coordination between Campuses.
- ❖ Course Coordination
- ❖ Student Assessment Procedures

SOP manual for BCS program:
https://drive.google.com/file/d/1FhRtQ_IuJGBTZktCebwHxjb0tmsDD5do/view?usp=sharing

H. Program Quality Assurance

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

https://drive.google.com/file/d/1iSi8Ez52BBcOfTNoE4S9s2ELef73AMzk/view?usp=sharing

2. Program Quality Monitoring Procedures

Two meetings are held in a year by the course development committee on departmental level to address the needs for the development of the program.

Planning: In this phase, the plan is created for academic process components to improve students' learning. Across the institution, we are required to prepare an Academic Assessment Plan (AP), which shows a roadmap of assessing the learning outcomes from one level to the other based on its applicability for each level mentioned below.

a. Course Level Assessment
b. Program Level Assessment
c. Institutional Level Assessment

Assessment Plans are based on **OBE (Outcome based Education)** principles and Learning Outcomes. Assessment plans include course level and program level assessments in accordance with Quality Management System.

Implement & Monitor: Implement the assessment plan *every regular semester.* Conducted direct and indirect assessments. Monitor the Assessment Process and Compute assessment results using Direct and indirect methods.

- *The implementation plan for all learning and teaching activities are monitored through good communication channels, rigorous trainings, consultancy and support.*

Review/Assess: Assessment of CLO and PLO and ISLO are achieved as planned for quality of teaching and learning. Analyze and discuss the Assessment Results.

- *At the program level, the program progress annually evaluated and discussed with the college administrators (dean and curriculum committee) through the program annual report (APR).*
- *The program specification is continuously reviewed and revised by the Quality Assurance and Accreditation unit under the supervision of the Vice dean.*

- *Employer and Alumni surveys are conducted annually to evaluate their satisfaction with the program in order to meet the needs of the students.*

Improvement: Analyze differences in expected improvements, actual improvements, and previous assessment results. Based on this, determined the next improvements plan. Take action so we don't make those same mistakes next time. Some examples of improvement are
- *Curricular, learning activities, assessment strategies changes needed to meet outcomes are discussed.*
- *Redefine ILO or PLOs or CLOs.*
- *Assessment results are analyzed and compared against plan*
- *Corrective and improvements plan are developed and the Quality Cycle continues.*
- *After that all recommendations and proposed changes are submitted to the department council for the approval.*
- *After discussion, it is submitted for approval to the Dean of the college.*
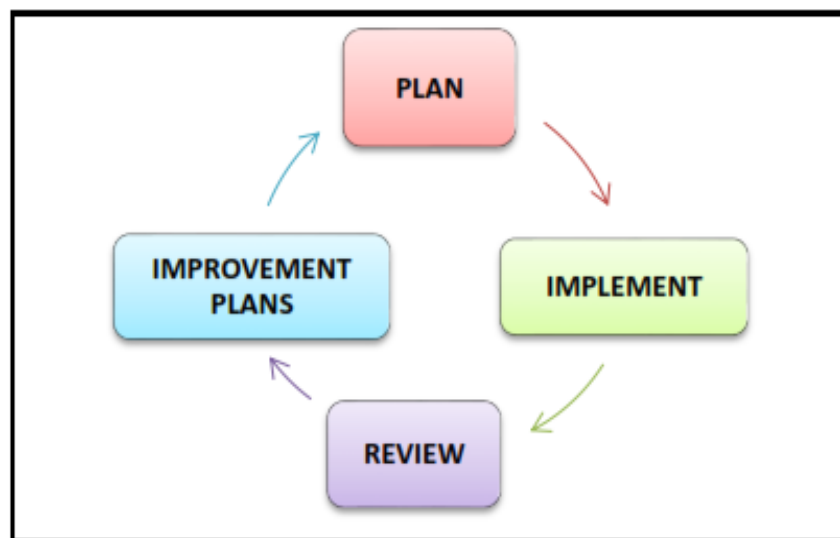
Responsible members & committees at different level.

- Class Observations by HODs
- Student's Feedback analysis (by Department)
- Periodically course content review (by CRC/Academic coordinator)
- Course File Review Mechanism & Report (by QAU)
- Course Coordinators Presentation (Organized by QAU)
- Improvement plan (by respective committees)
- Approval of improvement plan at course level by course coordinators and CRC, then at program level by HoD.
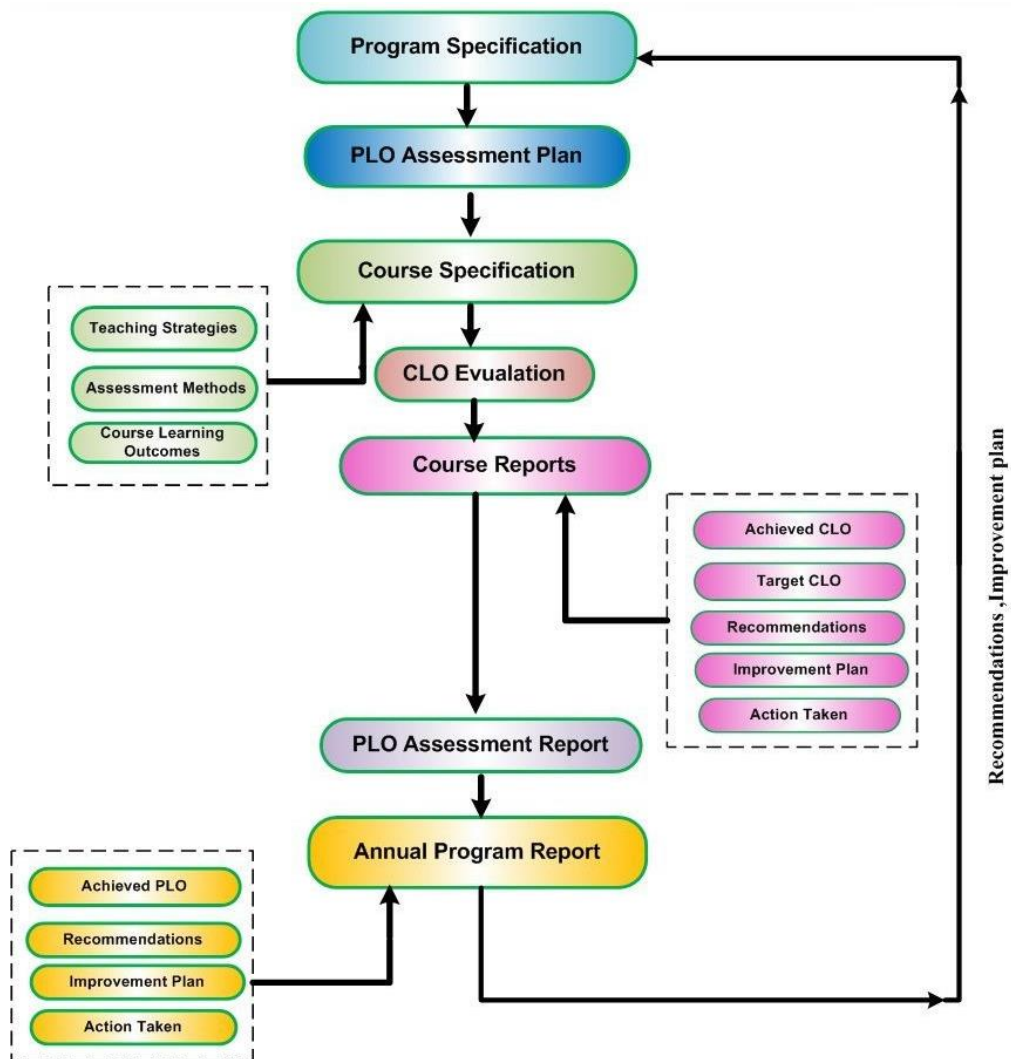
Figure (2.2): Quality workflow of planning, implementation, review and improvement plan (PIRI) for the program.

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

In the faculty, a committee (named General Subjects Committee) is responsible to follow the synchronization and mitigation of contents within the faculty and courses outsourced from other faculties. Inside the faculty as per ACM definitions many courses are common as computing requirements for CS, IS and CNET programs. To maintain symmetry within the teaching material, course depth and grading policy each course has a course coordinator who is responsible to balance the resources in the departments where the courses are offered and have course in-charge to implement in symmetric manner in other sections offering the course.

Within the college the quality coordinator of the program is responsible for collecting the complete course file including course specifications and course reports. If any further updation is required then the quality coordinator along with curriculum development committee contacts the course coordinator. Due to this reason, some of the PLO's are also common in all three programs in the faculty. CLO's of the outsource courses are mapped appropriately with PLO's in the mapping matrix.

The below listed courses are courses outsourced for bachelor in computer science program from other colleges department.

- Basic Sciences - Physics & Mathematics (College of Science)
- English language courses (English Language Centre)
- Arabic Language & Islamic Culture courses (College of Sharia & Law).

However, communication track is established at the level of vice deanship for development to:

- Obtain the course specification and course reports for all outsourced courses are that should be accessed by the office of the Vice dean for academic affairs and any comments from this committee will be collected and raised to the concerned Head of the department.
- Ensure alignment between PLO's mapping matrix of outsourced courses.

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

A common course coordinator led the course in both sections. The Course Coordinator has to arrange at least three meetings with staff from both sections for synchronizing purposes. In all Units and committees, almost equal number of staff is engaged from both sections. Male & Female sections prepare and submit specifications to QAU for review. QAU consolidate the specifications and appreciate the common standard and highlights the differences according to need. QAU scope covers both male & female sections under the same chairman and head with a proportionate representation of members in all committees of QAU responsible for monitoring the standards of achievements and implementation.

The bachelor in computer science program is running by the College of Computer Science and Information Technology, Jazan University, campus having male and female sections. However, the male and female sections are at different locations. The program administration is committed to maintain uniformity and similarity with respect to teaching & learning activities, facilities and resources, examinations, quality parameters, co-curricular and extracurricular activities between male and female sections. A number of measures are in place to ensure the equality and uniformity between male and female sections.

**These measures are as under:**
- Appointment of the Vice Dean of Female Sections, who works under Dean of the CS & IT to ensure smooth management and coordination with the respective male counterparts for academic and other activities.

- Separate registration and admission unit is constituted in the female section to look after the related issues of female students.

- Female staff representation is being assured in all the academic and quality committees of the college.

- The College Quality Unit has female members, who work in coordination with the Quality Unit of the male section under the supervision of Vice Dean of Development.

- At the department level, a female department assistant head is appointed to look after the academic activities of female sides (mahaliya campus) of the department. The female sections assistant head is working under the supervision of the Head of the Department.

- Track leaders are appointed at department level to take care of this track, review the files, and monitor the progress of the courses throughout the academic year in all sections and groups.

- Course coordinator is appointed for the course from any of the campus by CRC and .Head of the Departments for every course, who will work to ensure the uniformity in course content, teaching and learning, assessment processes etc.

- Course In-charge for the particular courses appointed from the remaining two campuses. Other remaining two campuses appoint.

- Every department assigns male and female quality coordinators to provide required data to the College Quality Unit related to their departments after making a combined document.

- The Course Development Committees reviews and suggest for updating the courses.

- The same course contents are provided to male and female sections; same teaching strategies and assessment methods are being followed.

- The examinations are being conducted at same time following the same procedures and common question paper for male and female sections, each course is prepared with equal participation of male and female instructors.

- The course specification for each course is common, while separate course reports are prepared to evaluate the academic performance of all sections separately; then combined course report is prepared to evaluate the overall performance and hence quality.

- Most of the Key Performance Indicators (KPIs) are calculated separately for male and female sections and then combined to evaluate the performance of the program as a whole.

- Any remarkable difference in the key performance areas such as completion rate, student retention, grade distribution, performance trend over time, success rate in professional examination etc. for male and female sections are being analyzed separately as well in combination to identify the reasons and efforts are made overcome the associated problems.

- Teaching & learning resources and supportive facilities including average number of students in class, premises, class rooms & equipment in class rooms, class capacity, laboratories,

- availability of chemicals & equipment in the laboratories, internet facility, library, cafeteria and opportunities for extracurricular activities etc. are similar in all the campuses.
- Important quality parameters such as achievement of course learning outcomes, responses of students for program evaluation survey, course evaluation, survey for satisfaction with the facilities and services are obtained separately from both male and female sections as well as combined for better evaluation.
- Overall, the satisfaction levels of male and female faculty members are examined through staff satisfaction survey.

Flowchart for Communication between sections offering the same program
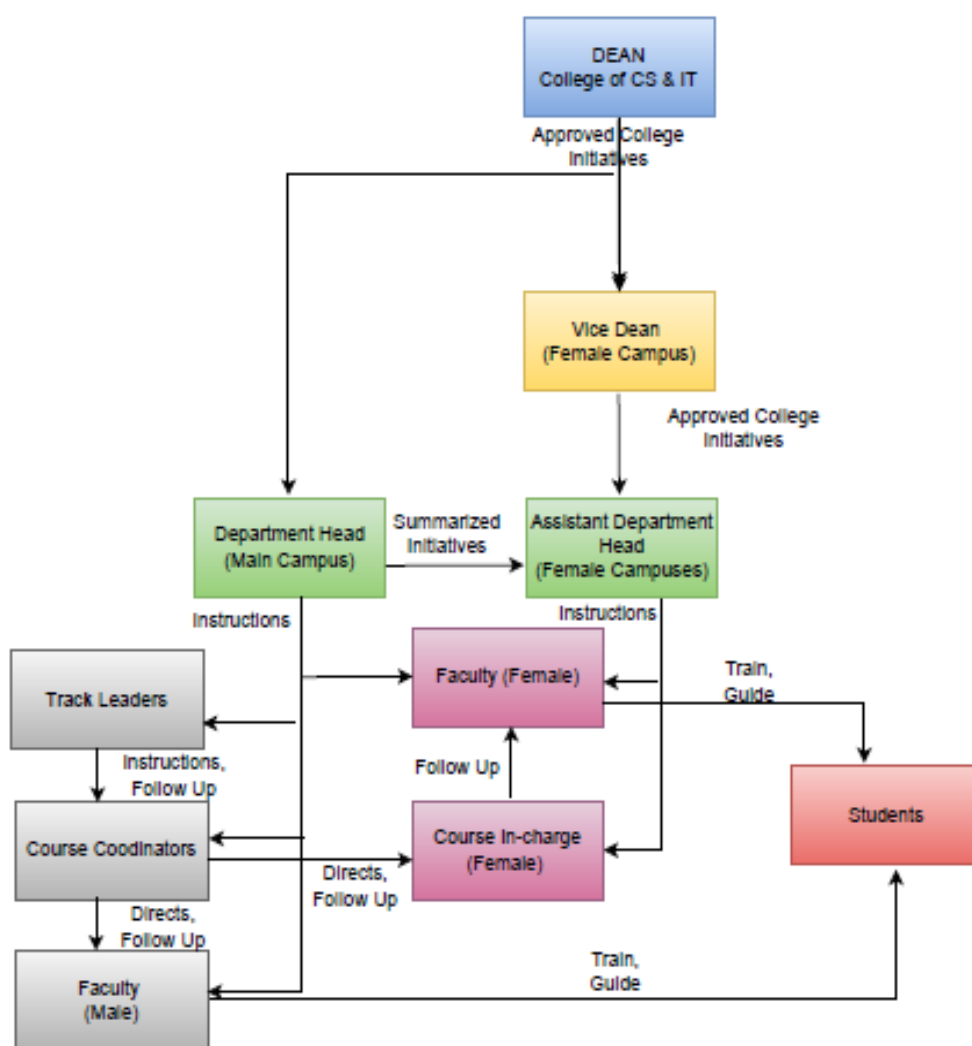
Course Coordination meeting minutes between all sections of a course:
https://drive.google.com/file/d/1mYYOWyMnQ-HAF1ZR8yv4cTSyv2jRb-d8/view?usp=sharing

Course Coordination SOP, Roles & Responsibilities of teachers, course in-charge, CC & TL of the particular course:
https://drive.google.com/file/d/15O0KlOHJ7HwuuO1_SJ8Vj3NT2Udk6RYA/view?usp=sharing

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

Specific guidelines are available from the University side covering the partnership and MoUs. Any educational or research partnership need to be approved by concerned authorities from the institution.

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

PLO assessment plan prepared in the beginning along with the program specification defining in detail teaching strategies, assessment method, KPI performance target. Strategic committee has the list of activities that need to be performed throughout the year. In the last of the academic year PLO assessment report of the plan and APR is prepared based on the achievement of the PLO's, cohort analysis, KPI's achievement and strategic action plan competition percentage. In addition, mechanisms for indirect assessment are included in the assessment plan. Numerous surveys i.e., University survey, Program evaluation, Course Evaluation, Exit student, Alumni and Employer surveys are used to measure the achievement of PLO's on 5 likert scale.

Direct Assessment:

PLO's vs CLO's mapping is the base of the Assessment Plan. In the direct assessment, PLO's calculated from the aligned CLOs. Each course coordinator is responsible to plan and drive the course with the best teaching strategies and assessment method so that the CLOs should be achieved up to the required standard. In case of failure for any CLO, CC is responsible for fine-tuning the course fully by applying better teaching strategies or by a changing assessment method or maybe by improving the course material. Furthermore if the result is not improved then the particular CLO's is checked whether it is written correctly and properly associated with teaching strategies and assessment method.

Indirect Assessment:

From the exit survey, the low achievement for any PLO will be discussed in the Department council along with Departmental QAU. In such case, the improvement process will start from Strategic Plan down to the course level to identify the shortcomings and their elimination.

Program Learning Outcomes Assessment Plan

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	
		Direct	Indirect
1.	All PLO's	CLO's achievement of the capstone courses mapped with associated PLO's	Exit students survey, Program evaluation survey, course evaluation survey, alumni & employer surveys
2.	Graduate Attributes & Goals aligned with PLO's	Calculation of Graduate Attributes & goals through PLO's achievement which is aligned	
3.	Result Analysis of course reports learning outcomes with strength, area of improvement and priorities of improvement.		
4.	Analysis of program learning outcomes result: Strength, weakness, Area of improvement and priorities of improvement.		
5.	Students counseling and support.		
6.	Program evaluation report & achievement monitoring through KPI's data collection.		
7.	Analysis and improvement plan to improve the overall results and learning outcomes of the course which reflects the achievements of the program learning outcomes.		

Data Collection: Students academic development, Teaching and learning Unit, Academic development unit

Data Processing: Quality assurance unit processes all gathered data like, action plan, next year improvement plan, cohort analysis along with PLO's achievement reflecting variations in the courses were present in APR

An academic year time is given to improve the program and avoid the deficiencies occurred during previous academic year and prepare the improvement plan after seeing the achievement that will be implemented in coming academic year.

Expected recommendations for changes based on PLO assessment

Curriculum; contents, course sequencing, teaching strategies, student assessment, learning resources, PLO's narration, acceptance of recommendations from the course. Analysis of the courses reflecting variations.

Teaching Strategies; Use appropriate teaching method to achieve the PLO.

Assessment methods; Change direct assessment aligned properly with teaching strategies and PLO's, Analysis of the PLO's, Genuine survey by clearly explaining the reasons for the survey to the stakeholders.

Other; training, workshops, curricular activities, co- curricular and extra- curricular activities.

Student Academic affair; Identity the courses with effects students' performance more, Monitor the students' performance and progress throughout the year especially low achievers, arrange extra classes & tutorials for low performing students.

PLO Assessment Plan:

https://drive.google.com/file/d/11isQ1SsRXdwQPjAm6OtUXNpGPw85jUsv/view?usp=sharing

7. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness of teaching	Students	Survey	End of the semester
Effectiveness of teaching and learning process	TLU/ QAU/ HOD	Review meeting	Once in a academic year
Effectiveness of teaching and interaction with students	TL/HOD	Classroom monitoring	Throughout semester
Learning resources availability	Students	Survey	End of the semester
Quality of learning resources	Track leader, CRC	Review meeting	Once in a academic year
Effectiveness of assessment	Exam Committee	Random re-checking of Exam answer keys	End of the semester
Sufficiency of resources and facilities to students	Students	Survey	End of the semester
The effectiveness of program leadership	Faculty members	Survey	End of the semester
Sufficient resources availability	Faculty members	Survey/Feedback form	End of the semester
Learning outcome assessment	Students	Direct (based on CLOs)	End of the semester
Learning outcome assessment	Students, Alumni	Indirect (Based on surveys)	At last semester for exit students and anytime from alumni
Program Goals and Graduate Attributes Evaluation	Alumni, Employers	Indirect (Based on surveys)	Anytime from alumni and employer
Overall effectiveness of Program	Advisory board/ Program Assessment Committee	Meeting	At the end of the academic year

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 (ONE) year.

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
1	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives	70%	Review of Program Action Plan	At the end of Academic Year
2	KPI-P-02	Students' Evaluation of quality of learning experience in the program	4.25	Annual final year student survey	8 weeks of second semester
3	KPI-P-03	Students' evaluation of the quality of the courses	4.0	Course evaluation survey	At the end of the semester
4	KPI-P-04	Completion rate.	50%	Cohort Report	At the end of Academic Year
5	KPI-P-05	First-year students retention rate	90%	Cohort Report	At the end of Academic Year
6	KPI-P-06	Students' performance in the professional and/or national examinations	NA		
7	KPI-P-07	Graduates' employability and enrolment in postgraduate programs	40%	Alumni Survey	At the end of Academic Year
8	KPI-P-08	The average number of students in the class	25	System Report from Student e-Register	At the end of the semester
9	KPI-P-09	Employers' evaluation of the program graduates proficiency	4.5	Employer Survey	At the end of Academic Year
10	KPI-P-10	Students' satisfaction with the offered services	3.5	Annual mid-level student survey	8 weeks of second semester
11	KPI-P-11	The ratio of students to teaching staff	20:1	Student data from system and faculty information	At the end of the semester
12	KPI-P-12	Percentage of teaching staff distribution based on academic qualification (doctoral degree)	Prof=5 % Associate Prof=10 % Assistant Prof=30 % Lecturer=55 %	Faculty Information from departments (Template –B)	Anytime during the academic year

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
13	KPI-P-13	Proportion of teaching staff leaving the program	5%	Faculty information from department	At the end of the academic year
14	KPI-P-14	Percentage of publications of faculty members	30%	Research publication data from Research Unit	At the end of the academic year
15	KPI-P-15	Rate of published research per faculty member	0.75:1	Research publication data from Research Unit	At the end of the academic year
16	KPI-P-16	Citations rate in refereed journals per faculty member	20:1	Research publication data from Research Unit	At the end of the academic year
17	KPI-P-17	Satisfaction of beneficiaries with the learning resources	3.5	Faculty members and student annual survey	8 weeks of second semester

* including KPIs required by NCAAA

Strategic KPI's
Strategic KPI's are useful in achieving program goals

No	KPIs Code	SKPIs	Target	Measurement Methods	Measurement Time
1	KPI-SP-18	Percentage of courses updated based on latest trend and research requirements.	25 %	Review of Program Study Plan	At the end of Academic Year
2	KPI-SP-19	Students attended the workshops and got trained in the industry-based certification courses.	50 %	Training from Professional Development Unit and data for the same	At the end of Academic Year
3	KPI-SP-20	Number of mini projects presented at department level.	15	Mini project exhibition conducted and recorded by Excellence Unit	Semesterly
4	KPI-SP-21	Students who participated in technical competitions, workshops, seminars and conferences.	25%	Managed by Excellence Unit	Semesterly

No	KPIs Code	SKPIs	Target	Measurement Methods	Measurement Time
5	KPI-SP-22	Number of workshops conducted by DAD/QAU to implement best practices in teaching strategies and assessment methods.	10	QAU and T& L Unit maintains the record	At the end of Academic Year
6	KPI-SP-23	Number of Quartile awards received towards research every year.	5	Data from Research Unit	At the end of Academic Year
7	KPI-SP-24	Faculty participated in workshops, training, seminars and conferences.	50 %	Participation data Reserach from Department /Unit excellence unit	At the end of Academic Year
8	KPI-SP-25	Number of trainings conducted in soft skills for the students.	5	Professional Development Unit provided the data	Semesterly
9	KPI-SP-26	Number of specialized training programs conducted for the society.	3	Community services committee conducted are recorded by the committee	Semesterly

Relevance: A minimal step distinguishes the measurement of performance from the much more dynamic process of raising performance levels throughout the program. This entails establishing performance objectives in the major areas that influence your performance of a KPI's.

Key performance indicators (KPIs), targets and assessment strategy.

Setting SMART targets: It's a familiar acronym, but a very useful one - performance targets should be SMART - specific, measurable, achievable, realistic and time-bound.
KPIs ensures the targets should meet the two criteria, by definition, it should be specific and measurable.

Performance targets are a powerful management tool that can help you deliver the kind of strategic changes that program need to make. The objectives of the strategic plan can be implemented through program goals, and setting targets based on KPIs is an ideal way of doing this.

By seeing the previous year's and current year achievements of the KPI's the new target is set. If regularly NCAAA KPI's actual achievement is satisfactory with positive trend then then new target for the next year is increased.

I. Specification Approval Data

Council / Committee	CS Council Meeting
Reference No.	001/1443/02
Date	12/10/2022