T-103
2022

Program Specification

Program Name: **Computer Science**
Program Code (as per Saudi university ranking): 061301
Qualification Level: Bachelor of Science (B.Sc.)
Department: Computer Science
College: Computer Science & information technology
Institution: Albaha university
Program Specification: New ☐ updated* ☒
Last Review Date: 29-05-2923

*Attach the previous version of the Program Specification.

Content:

A. Program Identification and General Information

1. Program's Main Location :

Alaqiq Main Campus (Male Section)
Shahbah Main Campus (Female Section)

2. Branches Offering the Program (if any):

None

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

None

4. Professions/jobs for which students are qualified

- **Computer Programmer**
- **Software Engineer**
- **Web Developer**
- **Network Administrator**
- **Database Administrator**
- **Systems Analyst**
- **Security Analyst**
- **Teacher**
- **Researcher**
- **Forensic computer analyst**
- **Game designer**
- **Game developer**

5. Relevant occupational/ Professional sectors:

- **Banking**
- **Transports**
- **Education**
- **Power Grid**
- **Medication**
- **Marketing**

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. None	-	-

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

exit points/awarded degree	Credit hours
1. Diploma of Programming	59

8. Total credit hours: (The number of credit hours is 165 hours spread over ١٢ semesters.)

B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

Our objective is to cultivate graduates possessing comprehensive knowledge, innovative capacities, and ethical considerations in computer science, equipped with the requisite skills and perspective to profoundly influence both the technological sector and the broader societal context.

2. Program Objectives:

1. Create a unique academic environment that enhances the competitiveness of our computer science students.
2. Pursue top-tier excellence among our computer science faculty.
3. Enhance the systematic research progression within the program.
4. Equip students to address the needs of the computer science job sector.
5. Launch efforts for community outreach within the program.

3. Program Learning Outcomes*

Knowledge and Understanding

K1	Explain introductory and system concepts and theories in computer science.
K2	Recognize the technical issues in computer science
K3	Describe principles, concepts and theories in science, mathematics and physics.

Skills

S1	Apply knowledge of interplay between theory and practice and the essential links between them to solve real problems.
S2	Develop a system that is based on a quantitative and qualitative assessment of its functionality, usability, and performance.
S3	Interpret how a solution solves the problem and what assumptions were made.
S4	Use of multiple programming languages, tools, paradigms, and technologies as well as the fundamental underlying principles.
S5	Develop effective presentations to a range of audiences about technical problems and their solutions.

Values, Autonomy, and Responsibility

V1	Adhere to the social, legal, ethical, responsibility, and cultural issues that are inherent in the computing discipline

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

C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	12	7.27%
	Elective	-	-	-
College Requirements	Required	15	46	27.88%
	Elective	-	-	-
Program Requirements	Required	24	83	50.3%
	Elective	5	15	9.1%
Capstone Course/Project	Required	2	6	3.64%
Field Training/ Internship	Required	1	3	1.81%
Residency year	-	-	-	-
Others	-	-	-	-
Total		53	165	100%

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

2. Program Courses

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	ENGL1001	English Language 1	Required	None	0	College
	MATH10001	Calculus 1	Required	None	4	College
	PHYS1002	Physics	Required	None	4	Program
	ISLM1003	التلاوة والهدايات القرآنية	Required	None	2	University
	CS1001	اساسيات التحول الرقمي	Required	None	2	University
Level 2	ENGL1002	English Language 2	Required	ENGL1001	3	College
	CS1002	Introduction to Computing and algorithms	Required	None	4	College
	CS1003	Discrete Structure	Required	None	3	College
	ISLM1001	Islamic Education 1	Required	None	2	University
	ARAB1001	Linguistic Skills	Required	None	2	University
Level 3	ENGL1003	English Language 3	Required	ENGL1002	3	College
	CS1004	Statistics	Required	None	3	College
	CS1005	Programming 1	Required	CS1002	4	College
	HIST1001	تاريخ المملكة العربية السعودية	Required	None	2	University
	ISLM1002	Islamic Education 2	Required	None	2	University
Level 4	CS1251	Programming 2	Required	CS1005	4	College
	CS1252	Probability	Required	CS1004	3	College
	CS1253	Linear Algebra	Required	None	3	Program
	CS1254	Digital logic design	Required	None	3	Program
	IT1255	Technical writing	Required	ENGL1003	3	College
Level	CS1006	Computer Network 1	Required	None	4	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
5	CS1255	Computer Organization and Architecture	Required	CS1254	3	Program
	CS1007	Databases 1	Required	None	4	Program
	CS1256	Data structure	Required	CS1251	4	College
Level 6	XXXXXX	Faculty elective	Elective	None	3	College
	CS1008	Web technologies 1	Required	CS1007	4	Program
	CS1009	Software Engineering 1	Required	CS1251	4	Program
	CS1257	Computer network 2	Required	CS1006	4	Program
Level 7	CS1501	Web technology 2	Required	CS1008	4	Program
	CS1502	Operating systems	Required	CS1256	4	Program
	CS1503	Software Engineering 2	Required	CS1009	3	Program
	CS1504	Human Computer Interaction	Required	None	3	Program
Level 8	CS1505	Artificial Intelligence	Required	None	4	Program
	CS1506	Design and analysis of Algorithms	Required	CS1503	3	Program
	IS1501	Ethics in Computing	Required	None	3	College
	CS1507	Theory of Computation	Required	CS1011	3	Program
Level 9	CS1508	Programming languages	Required	CS1251	3	Program
	CS1509	Computer security	Required	CS1257	3	Program
	CS1510	Mobile applications and development	Required	CS1506	3	Program
	CS1511	Theory of compilers	Required	CS1507	3	Program
	CS1512	Field Training	Required	Acquired ٨٥ hours	3	Program
Level 10	CS1751	Computer Graphics	Required	CS1256	3	Program
	CS1752	Research methods	Required	None	3	College
	CS1753	Introduction to data mining	Required	CS1007	3	Program
	XXXXXX	Elective(1) Group(A)	Elective	Revise elective courses	3	Program
Level 11	CS1754	Senior Project for CS 1	Required	Acquired 100 hours	3	Program
	CS1755	Modeling and simulation	Required	CS1506	3	Program
	CS1756	Parallel and distributed computing	Required	CS1257	4	Program
	XXXXXX	Elective(2) Group(B)	Elective	Revise elective courses	3	Program
Level 12	CS1757	Senior Project for CS 2	Required	CS1754	3	Program
	CS1758	Emerging technologies	Required	None	3	Program

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	XXXXXX	Elective(3) Group(C)	Required	Revise elective courses	3	Program
	XXXXXX	Elective(4) Group(D)	Required	Revise elective courses	3	Program
College Elective	CS1513	Unix OS Environment	Elective	None	3	College
	CS1514	Advanced programming and design patterns	Elective	CS1251	3	College
	IS1513	Digital marketing	Elective	None	3	College
	IS1514	Digital Entrepreneurship	Elective	None	3	College
	IT1513	Software testing	Elective	None	3	College
	IT1514	Block Chain	Elective	None	3	College
Elective	Group A					
	CS1758	Network switching and routing	Elective	CS1257	3	Program
	CS1759	Machine Learning	Elective	CS1505	3	Program
	CS1760	System Programming	Elective	CS1506	3	Program
	CS1761	Databases 2	Elective	CS1007	3	Program
	Group B					
	CS1762	Wireless network	Elective	CS1758	3	Program
	CS1763	Natural language processing	Elective	CS1759	3	Program
	CS1764	Digital image processing and analysis	Elective	CS1751	3	Program
	CS1765	Cross platform development	Elective	CS1501	3	Program
	Group C					
	CS1767	Network design	Elective	CS1762	3	Program
	CS1768	Recommender system	Elective	CS1251	3	Program
	CS1769	Data Science fundamentals	Elective	CS1007	3	Program
	CS1770	Computer games programming	Elective	CS1505	3	Program
	Group D					
	CS1771	Network administration	Elective	CS1767	3	Program
	CS1772	Robotics	Elective	CS1505	3	Program
	CS1773	Cloud computing	Elective	None	3	program

Diploma of programming study plan (exit point from Bachelor of computer Science study plan)

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
1	ENGL1001	English Language 1	Required	None	0	College
2	ISLM1001	Islamic Education ١	Required	None	2	University
3	HIST1001	تــاريخ المملكــة العربيــة السعودية	Required	None	2	University
4	ENGL1002	English Language 2	Required	ENGL1001	3	College
5	CS1002	Introduction to Computing and algorithms	Required	None	4	College
6	CS1003	Discrete Structure	Required	None	3	College
7	ISLM1002	Islamic Education ٢	Required	None	2	University
8	CS1001	اساسيات التحول الرقمي	Required	None	2	University
9	ENGL1003	English Language 3	Required	ENGL1002	3	College
10	CS1005	Programming 1	Required	CS1002	4	College
11	ISLM1003	التلاوة والهدايات القرآنية	Required	None	2	University
12	ARAB1001	Linguistic Skills	Required	None	2	University
13	CS1254	Digital logic design	Required	None	3	Program
14	CS1251	Programming 2	Required	CS1005	4	College
15	IT1255	Technical writing	Required	ENGL1003	3	College
16	CS1006	Computer Network 1	Required	None	4	Program
17	CS1255	Computer Organization and Architecture	Required	CS1254	3	Program
18	CS1007	Databases 1	Required	None	4	Program
19	CS1256	Data structure	Required	CS1251	٤	College
20	XXXXXX	Faculty elective	Elective	None	3	College
21	CS1008	Web technologies 1	Required	CS1007	4	Program
22	CS1009	Software Engineering 1	Required	CS1251	4	Program
23	CS1502	Operating systems	Required	CS1256	4	Program
24	CS1506	Design and analysis of Algorithms	Required	CS1503	3	Program
25	CS1508	Programming languages	Required	CS1251	3	Program
26	CS1510	Mobile applications and development	Required	CS1506	3	Program

*The student is graduated and awarded a diploma in programming after completing these courses, regardless of their academic levels.

* Include additional levels (for three semesters option or if needed.
** Add a table for the courses of each track (if any)

3. Course Specifications:

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

https://drive.google.com/drive/folders/16eY-MQrIW-3nuGblPtPq3EVLpYfluejb?usp=sharing

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.	Knowledge and understanding			Skills					Values, Autonomy, and Responsibility
	K1	K2	K3	S1	S2	S3	S4	S5	V1
ENGL1001 English Language 1								I	
MATH10001 Calculus 1			I	I	I				
CS1005 Programming 1	I			I	I	I	I	I	I
ISLM1001 Islamic Education 1									I
CS1002 Introduction to Computing and algorithms	I	I		I	I	I		I	I
ENGL1002 English Language 2								I	
Physics			I						
IT10401 Technical writing	I			P	P	P			P
ISLM1003التلاوة والهدايات القرآنية									I
CS1007 Databases 1	P	P	P	P	P	P			P
CS1254 Digital logic design	I	I		P	P	P		P	P
CS1003 Discrete Structure	I	I	I	P	P	P		P	P
CS1004 Statistics			P	P					I
CS1252 Probability			P	P					I
CS1255 Computer Organization and Architecture	P	P	P	P				P	
CS1008 Web technologies 1	P	P		P	P	P	P	P	P
CS1253 Linear Algebra			P	I	I				
CS1256 Data structure	I	I	I	P	P	P	P		I
CS1506 Design and analysis of Algorithms	I	I	I	P	P	P	P		I
CS1006 Computer Network 1	I		I	P		P		P	I
CS1505 Artificial Intelligence	P	P		P		P			P
CS1501 Web technology 2	P	P	P	P	P		P	P	P
CS1502 Operating systems	P			P	P	P	P	P	P

Course	1	2	3	4	5	6	7	8	9
CS1009 Software Engineering 1	I	I		P	P				P
CS1251 Programming 2	I	I		P	P	P		P	P
ISLM1002 Islamic Education 2									P
CS1510 Mobile applications and development	P	P			P	P			P
CS1504 Human Computer Interaction	P	P		P	P	P	P	P	P
CS1257 Computer network 2	P	P	P	P	P	P		P	P
CS1751 Computer Graphics	P	P		P	P	P		P	P
ARAB1001 Linguistic Skills			I			I			
CS1754 Senior Project for CS 1	P	P		P	P	P	P	P	P
CS1508 Programming language and compilation	P	P		P	P	P	P	P	P
CS1509 Computer security	P	P	P	P		P		P	P
CS1757 Senior Project for CS 2	M	M		M	M	M	M	M	M
CS1756 Parallel and distributed computing	M			M	M	M		M	M
IS1501 Ethics in Computing		M		M		M		M	M
CS1758 Emerging technologies	M		M	M	M			M	M
CS1768 Recommender system	P	P		P	P	P			P
CS1771 Network administration	P	P		P	P	P	P	P	P
CS1763 Natural language processing	P	P	P	P	P	P	P		P
CS1767 Network design	P	P		P	P	P	P		P
CS1759 Machine Learning	M	M			M			M	M
CS1758 Network switching and routing	M	M		M		M		M	M
CS1001 اساسيات التحول الرقمي	I	I		I	I	I		I	I
ENGL1003 English Language 3								I	
HIST1001 تاريخ المملكة العربية السعودية			I			I			
CS1503 Software Engineering 2	I	I		P	P				P
CS1507 Theory of Computation	I	I		I	I	I		I	I
CS1752 Research methods	M		M	M	M			M	M
CS1753 Introduction to data mining	M	M			M			M	M
CS1755 Modeling and simulation		M	M	M	M				M
CS1513 Unix OS Environment	P			P	P	P	P	P	P
CS1514 Advanced programming and design patterns	I			P					P
IS10604 Digital marketing	I	I				I			I
IS1514 Digital Entrepreneurship	I	I				I			I
IT10605 اختبار البرمجيات	I	I				I			I

CS1760 System Programming	P	P	P	P			P	
CS1761 Databases 2	P	P	P	P	P	P		P
CS1762 Wireless network	P	P	P	P	P	P	P	P
CS1764 Digital image processing and analysis	P	P		P		P		P
CS1765 Cross platform development	I	I	P	P				P
CS1769 Data Science fundamentals	P	P	P	P	P	P		P
CS1770 Computer games programming	P	P		P		P		P
CS1772 Robotics	P	P		P		P		P
CS1773 Cloud computing	P	P	P	P	P	P	P	P

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

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

Describe teaching and learning strategies, including curricular and extra-curricular activities, to achieve the program learning outcomes in all areas.

NO.	Learning Domain & Learning Outcomes	Teaching Strategies	Assessment Methods
1	K1	• Lectures • Slide Presentations • Multimedia Presentations	• Homework/Assignments • Quizzes • Midterm Exam • Final Exam
2	K2	• Lectures • Slide Presentations • Multimedia Presentations • Debates/Discussion	• Homework/Assignments • Quizzes • Midterm Exam • Final Exam
3	K3	• Lectures • Guest lectures • Slide Presentations • Multimedia Presentations • Demonstrations • Practice Exercises • Tutorials • Seminars	• Homework/Assignments • Quizzes • Midterm Exam • Final Exam
4	S1	• Lectures • Demonstrations • Labs Lectures • Group Discussion • Group Projects • Case Studies • Assignment	• Homework/Assignments • Quizzes • Midterm Exam • Final Exam • Lab Evaluation (Rubric) • Lab exams • Viva-voce (Rubric) • Project Assessment(Rubric) • Report Assessment • (Rubric)

5	S2	• Demonstrations • Debates/Discussions • Labs Lectures • Group Discussion • Group Projects • Case Studies • Practical Exercises	• Homework/Assignments • Quizzes • Midterm Exam • Final Exam • Lab Evaluation (Rubric) • Lab exams • Viva-voce (Rubric) • Project Assessment(Rubric) • Report Assessment • (Rubric)
6	S3	• Demonstrations • Debates/Discussions • Labs Lectures • Group Discussion • Group Projects • Case Studies • Practical Exercises	• Homework/Assignments • Quizzes • Midterm Exam • Final Exam • Lab Evaluation (Rubric) • Lab exams • Viva-voce (Rubric) • Project Assessment(Rubric) • Report Assessment • (Rubric)
7	S4	• Demonstrations • Debates/Discussions • Labs Lectures • Group Discussion • Group Projects • Case Studies • Practical Exercises	• Homework/Assignments • Quizzes • Midterm Exam • Final Exam • Lab Evaluation (Rubric) • Lab exams • Viva-voce (Rubric) • Project Assessment(Rubric) • Report Assessment • (Rubric)
8	S5	• Slide Presentations • Multimedia Presentations • Demonstrations • Debates/Discussions • Group Projects	• Viva-voce (Rubric) • Presentation Assessment(Rubric)
10	V1	• Presentation • Guest Lectures • Debates/Discussions • Group Projects • Team-based Learning • Case Studies • Seminars • Assignment • Projects	• Rubrics • Note Cards

6. Assessment Methods for program learning outcomes.

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

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

The program learning out comes (PLOs) are assessed during the program cycle, 4 years,

according to a PLOs Assessment Plan. In the PLOs Assessment Plan, selected PLOs are set to be assessed each year, in direct and in direct assessment methods, while covering all PLOs during the program cycle period. This plan is based on PLOs-Course weight matrix and PLOs-CLOs matrix. Program students' achievement on course CLOs are measured for associated courses and student achievement for each PLO is calculated accordingly. Direct assessment uses student marks conducted during the semester, while indirect assessment uses student surveys/interviews conducted by course coordinators at the end of the term. CLOs direct assessment methods for each learning domain can be summarized as following:

A. **Knowledge assessment methods**:
   - Homework/Assignments
   - Quizzes
   - Midterm Exam
   - Final Exam

B. **Skills Assessment Method**:
   - Homework/Assignments
   - Quizzes
   - Midterm Exam
   - Final Exam
   - Lab Evaluation (Rubric)
   - Lab exams
   - Viva-voce (Rubric)
   - Project Assessment (Rubric)
   - Report Assessment (Rubric)

C. **Values Assessment Method**:
   - Rubrics
   - Note Cards

D. Student Admission and Support:

1. Student Admission Requirements

Conditions of admission to the program
- Must have a certificate of secondary school or equivalent
- Pass any test or personal examination required by the University
- To be medically fit
- Not to be dismissed from the University for educational or disciplinary reasons or to be expelled from another university for disciplinary reasons

Admission percentages for the program
- The admission rate varies each academic year
- Current year Admission rate 65%

Link to the admission university handbook

https://drive.google.com/file/d/1kjFdtDz3RPpx91aFRnsvsIAeIxevBU34/view?usp=sharing

2. Guidance and Orientation Programs for New Students

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

The program provides comprehensive orientation for new students, ensuring their full understanding of the types of services and facilities available to them. This orientation is part of an orientation program held by university which takes place every first week of the academic year.

Further guidance and orientations is always available for students through their assigned academic counselors/advisors. Contact information of academic advisors are available to students at the first week of the academic year.

3. Student Counseling Services

(Academic, professional, psychological and social)
(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

Academic advising is a key to success at any higher education institution. CSIT considers academic advisers a valuable resource to students as they help plan their undergraduate career and, ultimately, prepare them for graduation. Academic advising means guiding the students/advisee on different issues related to their academic progress and to help them find solutions to different academic problems. Academic advising is related to assisting students with educational choices, degree requirements, academic policies/procedures, as well as broader concerns such as career and graduate school options in the future.

- Each faculty member will be assigned a group of student for counseling and advising a - student will be required to meet his academic advisor at least twice a semester, the first visit being before the registration

- Each faculty member will be asked to post his office hours during which a student cab visit for receivingcounseling and advising

The four stakeholders involved in the process of academic advising are:
1. The advisee/student.
2. The advisor/faculty member.
3. The Head of the Academic Advising Committee or the Head Academic Advisor.
4. The department/program.

Roles and Responsibilities

An academic advisor is a selected faculty member of the department for the process of guiding the students/advisee on different issues related to their academic progress and problems. Maximum number ofstudents per academic advisor is between (10-15).
Following are the responsibilities defined for the academic advisor:
1. Follow and report student progress via advising checklist sheet.
2. Participate in orientation and advising services.
3. Assist students in selecting suitable senior projects and supervisors.
4. Check fulfillment of graduation requirements.

The advisee/student has the responsibility to:
1. Recognize that advising is a shared responsibility and accept responsibility for all decisions.
2. Share personal values, abilities and goals.
3. Prepare for advising sessions and bring relevant materials.
4. Meet with the advisor when asked or when in need of assistance.

Determine the number of office hours for faculty members of

academic guidanceDistribution of students to academic advisors

 Link to the counseling university Handbook
https://drive.google.com/open?id=1KXD29OREc4kQl-ALn4wuRAqEIr2vvpOL

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

- Students are directed to take some prerequisite courses by studying the first two semesters that containall the basic courses needed.
- Students have to be prepared in their first year in the college by giving them courses in English language, Basics of Science, Computer skills.
- Disabled Students have special consideration such as special car parking, which is available.
- The department provides additional support for special need students according to the university regulations.

E. Faculty and Administrative Staff:

1. Needed Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professor	CS	AI Data Sc		1	1	2
Associate Professor	CS	AI, Data Sc. Networking,		3	3	6
Assistant Professor	CS	AI, Data Sc. Networking ,Cyber Sec. Comp. Graphic		6	6	12
Lecturer	CS	-		6	6	12
Teaching Assistant	CS	-		6	6	12
Technicians and Laboratory Assistant	IT Comp. Eng.	-		4	4	8
Administrative and Supportive Staff	Management Clerical	-	-	3	3	6
Others (specify)	-	-	-	-	-	-

F. Learning Resources, Facilities, and Equipment:

1. Learning Resources

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

The required textbooks, references, software, hardware and other resources for teaching are identified by the instructor teaching the course. The instructor's suggestions are submitted to the Department Council. All suggestions are collected and are reviewed by Learning resources Committee. The Department council approves the Learning resources Committee Decision. The Deanship of Computers and Information Technology will send list of textbooks and the references to the Library Deanship and list of software and Hardware materials to the Deanship of Information Technology. According to the University regulation, each deanship is responsible to provide the requirements.

By the end of each academic year, each department should submit a list of required textbook or other related resources to the Dean of the college. The Dean is then submitting the request to Deanship of Libraries Affair or Deanship of Information Technology to process.

- The curriculum development and assessment committee advices and monitors acquisition of textbooks

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

The program implements effective procedures and reference materials needed to support teaching and learning processes include:

- The Library has a reasonable number of various resources that are easily accessible and appropriate to the needs of the program and the number of students for male and female student sections.
- The program has specialized electronic resources through the blackboard (e.g., lectures, books, homework, exams) and electronic systems that allow students to access the information, course materials.
- The program has laboratories, computer and technology equipment, and materials that are suitable to conduct scientific studies according to the program courses goals; and applies appropriate mechanisms to maintain and update them. The Laboratory, lecture halls and offices management Committee ensures these requirements are fulfilled.
- The program has a suitable classrooms and facilities for its needs.
- All health, general safety requirements are available in the facilities, equipment, and the educational.
- Standards for safety and environmental conservation are applied efficiently and effectively.
- The program has a reasonable number of qualified technicians and specialists for the operation and preparation of laboratories.

3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the program)

The Laboratory, lecture halls and offices management Committee is responsible for providing a healthy and safe environment of laboratories and other IT and communications equipment/environment according to the safety standard from the university.

G. Program Quality Assurance:

1. Program Quality Assurance System

Provide a link to quality assurance manual.

https://drive.google.com/file/d/1ajZg5U3TTJ8BFhPKdG23a9CMbN2y7Mvu/view?usp=drivesdk

- The program management implements an effective quality assurance and management system that is consistent with the institution quality system.
- The teaching staff, employee, and students participate in planning, quality assurance, and decision-making processes.
- The program management approves key performance indicators that accurately measure the program performance and coordinates to provide regular data on them.
- The program analyzes the evaluation data annually (e.g., performance indicators and benchmarking data, student progress, program completion rates, student evaluations of the program, courses and services, views of graduates and employers); and results are used in planning, development, and decision-making processes.

- The program conducts a periodic, comprehensive evaluation (every three / five years) and prepares reports about the overall level of quality, with the identification of points of strength and weakness; plans for improvement; and follows up its implementation.

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

In Computer Science program it's everybody's responsibility to follow quality guidelines as defined by the Albaha University, College of Computer Science & Information Technology, and Department of Computer Science, including quality guideless defined by accreditation agencies, like NCAAA.

To ensure, program quality is being maintained and procedures are being followed, program uses different procedures for monitoring, like:

The program is divided in different evaluation areas, including program leadership, effectiveness of teaching, availability of learning resources, provision of facilities and IT services, measurement of CLOs and PLOs and more.

These different evaluation areas are evaluated by students, faculty, administrative staff, program and college leaders and other stakeholders.

The different methods are used for these evaluations, like surveys, interviews, personal visits, and tools (excel sheets).

These evaluations are conducted periodically, like by the end of semester, by the end of academic year and at the completion of the program by the students.

To measure the quality of above evaluation areas, there are several Key Performance Indicators (KPIs) defined, the target benchmark are set for each KPI, internal and external benchmark are provided for comparison. At the end of each semester it is measured that where Computer Science programs stand in KPIs.

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

- The main campus and branches prepare and use same curriculum and follow same policies and procedures, including quality procedures
- The committees and subcommittees formed at college, department and program level have members

from main campus and branches, including female branch, they together deliberate matters and take decisions jointly

- All branches are provided all learning resources and facilities as to meet quality standards
- The KPIs of branches are measured similarly as of main campus, therefore same efforts are put to achieve all KPIs.

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

The following procedures are followed in assessment of Program Learning Outcomes (PLOs):

The course learning outcomes (CLOs) are assessed using the JODAH system; student marks are entered in CLO measurement matrices to obtain CLOs assessment results (Ref. 1.1.10).

Next, CLOs assessment results are entered in Program learning Outcomes Mapping Matrix (Ref.3.2.7.1).

Next, Matrix of relative weights for the learning outcomes of the courses and linking them to achieving the learning outcomes of the program is prepared (Ref.3.2.7.1).

Next, Plan of PLOs assessment during program period (Cycle based) is prepared (Ref.3.2.7.1).The results are then analyzed and recommendations are made for CS program improvement.

5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Leadership	Students, Faculty, Administrative Staff	Surveys	End of each semester
Effectiveness of teaching and assessment	Students, Faculty, PeerReviewer, Program Leaders	Surveys, Visits, Interviews	End of each semester
Learning resources	Students, Faculty, Program Leaders	Survey, Visits,Interviews	End of each semester
Facilities and IT	Students, Faculty, Administrative Staff	Surveys	End of each semester
Extent of achievement of course learning outcomes (CLOs)	Faculty, Program Leaders	Surveys, CLO assessment results	End of each semester
Extent of achievement ofprogram learning outcomes (PLOs)	Students, Faculty, Program Leaders, Independent reviewers	Surveys, PLO assessment results	End of the program (4th year)

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

6. Program KPIs*

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

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives.	90%	Calculating the KPI value annually as following:*(Number of performance indicators of the operational plan objectives of the program that achieved the targeted annual level/the total number of indicators targeted for these objectives in the same year*100)*	End of the academic year
2	KPI-P-02	Students' evaluation of qualityof learning experience in the program.	4.5	*Average of overall rating of final year students for the quality of learning experience in the program on a five pointscale in an annual survey*	End of the academic year
3	KPI-P-03	Students' evaluation of the quality of the courses.	4.5	*Average students overall rating for the quality of courses on a five point scale in an annual survey*	The 12th week of thesemester
4	KPI-P-04	Completion rate: Graduation rate for Undergraduate Students in the specified period.	80%	Calculating the KPI valueannually as following: *(number of undergraduatestudents who completed the program during the specifiedperiod / number of student enroll in the same cohort)* *100*	End of the academic year
5	KPI-P-05	First-year students retentionrate.	95%	Calculating the KPI valueannually as following: *Number of first-year undergraduate students who continue at the program the next year / the total number offirst-year students in the same year *100**	End of the academic year
6	KPI-P-06	Students' performance in the professional and/or national examinations.	80%	Calculating the KPI valueannually as following: *Percentage of students or graduates who were successful in the professional and/or national examinations, or their score average and median (if any)*	End of the academic year
7	KPI-P-07	Graduates' employability and enrolment in Postgraduate Programs.	(a) 50% (b) 20%	Calculating the KPI valueannually as following: *Number of graduates from undergraduate programs whowithin a year of graduation were: (a) employed, (b) enrolled in postgraduate programs, during the first year of their graduation/the total number of graduates in the same year *100**	Endof next academic year of the year of graduation

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
8	KPI-P-08	Average number of students in the class.	(a) 25 25	Calculating the KPI value annually as following: *Average number of students per class (in each teaching session/activity:* *(a) lecture, laboratory*	The 6th week of the 2nd semester
9	KPI-P-09	Employers' evaluation of the institution graduates proficiency.	4.5	*Average of overall rating of employers for the proficiency of the program graduates on a five-point scale in an annual survey*	The 6th week of the 2nd semester
10	KPI-P-10	Students' satisfaction with the offered services.	4.5	*Average of students' satisfaction rate with the various services offered by the institution (restaurants, transport, sports facilities, academic advising ..) on a five-point scale in an annual survey*	The 6th week of the 2nd semester
11	KPI-P-11	Ratio of students to teaching staff.	Avg of 10:1	Calculating the KPI value annually as following: *Ratio of the total number of students to the total number of full-time or full-time equivalent teaching staff for the program separately*	End of the academic year
12	KPI-P-12	Percentage of teaching staff distribution.	(a) M:70%,F:30% (b) N/A (c) Professors 10%, Associate professors 20%; Assistant professors 40%, Lecturers and teaching assistants 30%	Calculating the KPI value annually as following: *Percentage of teaching staff distribution based on:* *(a) Gender (N/A: Only Male)* *(b) Branches (N/A: Single Branch)* *Academic Ranking*	End of the academic year
13	KPI-P-13	Proportion of teaching staff leaving the institution.	0.5%	Calculating the KPI value annually as following: *Number of teaching staff leaving the institution annually for reasons other than age retirement / the total number of teaching staff *100*	End of the academic year
14	KPI-P-14	Percentage of publications of faculty members.	60%	Calculating the KPI value annually as following: *Percentage of full-time faculty members who published at least one research during the year to total faculty members in the program *100*	End of the academic year
15	KPI-P-15	Rate of published research per faculty member.	1	Calculating the KPI value annually as following: *The average number of refereed and/or published research per each faculty member during the year (total number of refereed and/or published research to*	End of the academic year

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
				the total number of full-time or equivalent faculty members during the year)	
16	KPI-P-16	Citations rate in refereed journals per faculty member.	10	Citations rate in refereed journals per faculty member. *(The average number of citations in refereed journals from published research per faculty member in the program (total number of citations in refereed journals from published research for full time or equivalent faculty members to the total research published))*	End of the academic year
17	KPI-P-17	Satisfaction of beneficiaries with learning resources.	4.5	*Average of beneficiaries' satisfaction rate with learning resources on a five-point scale in an annual survey in terms of:* *(a)* Their adequacy and diversity (references, journals, databases, etc.), *(b)* The support services provided for their utilization	End of the academic year
18	KPI-I-12	Proportion of faculty members with doctoral qualifications	70%	Calculating the KPI value annually as following: *Percentage of faculty members with verified doctoral qualifications to the total number of teaching staff of the program ***100***	End of the academic year
19	KPI-I-15	Satisfaction of beneficiaries with technical services.	4.5	*Average of beneficiaries' satisfaction rate with technical services on a five-point scale in an annual survey in terms of:* *(a)* Suitability, *(b)* Safety and confidentiality, *(c)* Availability and ease of access, *(d)* Maintenance and support services	The 6th week of the 2nd semester
20	KPI-I-19	Number of patents, innovations, and awards of excellence.	(a) 2 4	Calculating the KPI value annually as following: *Number of:* *(a)* Patents and innovations, *(b)* Awards of excellence, obtained by the program's staff annually	End of the academic year
			4.5	*Average of beneficiaries' satisfaction rate with*	Survey is to be conducted after

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
21	KPI-I-22	Satisfaction of beneficiaries with the community services.		*the community services provided by the program on a five-point scale in an annual survey*	each community service program, while overall average is to be considered at the end of the year
22	KPI-I-23	Number of community programs and initiatives.	**15**	*Number of community programs and initiatives provided by the academic program during the year*	End of the academic year

*including KPIs required by NCAAA

H. Specification Approval Data:

COUNCIL / COMMITTEE	**HEAD OF COMPUTER SCIENCE QUALITY ASSURANCE: DR ADIL ALHARTHI**
REFERENCE NO.	
DATE	10-1-2023