Program Specification

Program Name: Bachelor of Science in Information Systems
Qualification Level: Bachelor's Degree (Level 6)
Department: Information Systems
College: Faculty of Computing and Information Technology
Institution: Northern Border University

Content

A. Program Identification and General Information

1. Program Main Location:

Faculty of Computing and Information Technology, Rafha.

2. Branches Offering the Program:

Nil

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

The information systems program was established to fill the market needs in terms of professionals and specialists in integrating information systems solutions with administrative operations, who can serve business organizations with their requirements of information technologies, enable them to accomplish their mission-critical goals, and support them in the process of decision-making. The national and international markets need more specialists in information systems especially in the digital transformation movement which touches almost all the domains.

4. Total Credit Hours for Completing the Program: (136)

136 credit hours (12 levels) based on three-semesters/year.

5. Professional Occupations/Jobs:

- Information Systems Manager
- Business Intelligence Consultant
- Decision Support Systems Manager
- Project Manager
- Information Systems Analyst and Designer
- Web Developer
- Database Developer/Administrator
- Programmer
- Data Analyst

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

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

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

Intermediate exit points/awarded degree	Credit hours
Nil	

B. Mission, Goals, and Learning Outcomes

1. Program Mission:

To produce specialists in integrating information systems solutions with administrative operations, who can serve business organizations with their requirements of information technologies, who are characterized by the sense of community service and having knowledge of recent research directions.

2. Program Goals:

Within a few years of graduation, the students of the information system program are expected to:

1. Make a substantial technical contribution to the economic growth and welfare of the organizations they are part of, through their knowledge of Information Systems,
2. Be capable of identifying and analyzing a problem requiring an Information Systems based solution, in various application environments and of designing, implementing and evaluating a solution using state of the art tools and techniques,
3. Be consensually recognized as ethical, professional, and responsible Information Systems practitioners by their peers and superiors,
4. Demonstrate adequate communication and problem-solving skills, in their professional practice of Information Systems, and an ability to effectively work in a team to achieve a common goal.

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

Alignment of Program Mission/Goals with the College and NBU Missions/Goals:

Level	Mission and Goals		Mission Domains				
			Education	Research	Community Service	Professional Competence	Others
NBU Mission	We are a regionally serving comprehensive university committed to educational excellence. Guided by our core values, heritage, and place, we deliver innovative educational programs characterized by outcomes that leverage the human, economic, cultural, natural resources and mining of the Northern Border's region and beyond.		√	√	√	√	
NBU Goals	G1	Provide distinguished education that foster intellect and professionalism **(and related Objectives-See the NBU Strategic Plan)**.	√			√	
	G2	Promote research and innovation environment that enables realization of the university research priorities **(and related Objectives-See the NBU Strategic Plan).**		√			
	G3	Enhance community partnership **(and related**			√		

		Objectives-See the NBU Strategic Plan).					
	G4	Develop administrative and financial system that strengthen efficient management and diversify sources of revenue **(and related Objectives-See the NBU Strategic Plan).**					√
College Mission		To deliver accredited computing academic programs characterized by learning outcomes that guarantee to prepare professional graduates capable of contributing in scientific research, developing the community, and meeting the needs of the local and regional labor market.	√	√	√	√	
College Goals	G1	Preparing students in the areas of computer science, information technology and information systems, to be qualified with necessary scientific and practical skills and graduated with the highest possible competence.	√				
	G2	Contribute to the development of scientific and applied research in the field of computer sciences and information technology.		√			
	G3	Participate in offering advanced training programs for the rehabilitation and refinement of skills in the areas related to computer sciences and their applications to the university employees particularly and to the local community in general.			√		
	G4	Providing scientific counseling in the field of computer sciences and information technology.			√		
	G5	Provide programs and training courses that meet the needs of the labor market and industry.	√			√	
	G6	Qualifying graduates to complete their higher studies in the scientific disciplines.	√	√			
	G7	Create the appropriate environment for creativity and innovation in the field of computer sciences and its applications by providing incentives and material and moral rewards.	√			√	
	G8	Training students in practical training on designing and implementing systems in the	√			√	

		private and public sectors before graduation through agreements between the faculty and these sectors to provide all facilities and possibilities for students.					
	G9	Integration with the community through providing necessary information to companies and public and private establishments about outstanding students to facilitate their professional integration after graduation and coordinate between these companies and graduating students.			√		
Program Mission		To produce specialists in integrating information systems solutions with administrative operations, who can serve business organizations with their requirements of information technologies, who are characterized by the sense of community service and having knowledge of recent research directions.	√	√	√	√	
Program Goals	G1	Make a substantial technical contribution to the economic growth and welfare of the organizations they are part of, through their knowledge of Information Systems.	√		√	√	
	G2	Be capable of identifying and analyzing a problem requiring an Information Systems based solution, in various application environments and of designing, implementing and evaluating a solution using state of the art tools and techniques.	√	√			
	G3	Be consensually recognized as ethical, professional, and responsible Information Systems practitioners by their peers and superiors.			√		
	G4	Demonstrate adequate communication and problem-solving skills, in their professional practice of Information Systems, and an ability to effectively work in a team to achieve a common goal.				√	

4. Graduate Attributes:

The graduate's attributes of the university are the reference in which the graduate's attributes of the program are determined.

Northern Border University Graduates' Attributes

NBU's Graduates' Attributes (GAs)	Learning Outcomes of NBU's Graduates' Attributes (GAs) for Bachelor Programs
National identity	**GA1:** demonstrate high standards of ethical and socially responsible behavior, as well as academic and professional honesty and integrity; contribute to finding solutions to social problems; and commit to being a responsible citizen.
Self-management	**GA2:** Demonstrate self-management skills, self-learning and critical thinking, the ability to take initiative to self-develop according to specific standards, and ability to present evidence and arguments to make a decision unbiasedly.
Critical thinking	
Digital culture	**GA3:** Effectively use information technology, analytical, mathematical, and statistical tools to perform data analysis, suggest solutions, and solve problems using critical thinking.
Teamwork	**GA4:** Have the ability to lead a team, assume responsibility for performing tasks and developing work, achieve goals effectively, and promote health, psychological and social aspects.
Entrepreneurship	**GA5:** Identify the function of entrepreneurship and its requirements in the successful, commercial application.
Communication skills	**GA6:** Effectively communicate both verbally and in writing, using appropriate presentation forms, scholarly language, adequate reasoning for various issues and dealing with beneficiaries.

Alignment of the Program's Graduates Attributes (GAs) with the Program's Goals(G)

Program Goals (G)		G1	G2	G3	G4
Program's Graduates Attributes	GA1			√	
	GA2		√		√
	GA3	√	√		
	GA4				√
	GA5	√			
	GA6				√

The matrix above illustrates the consistency between program's graduates' attributes (GAs) and program goals (Gs). All of the program goals map to at least one of the GAs.

Alignment of program graduates' Attributes with the National Qualifications Framework (NQF)

NQF Graduate Attributes (Level 6, Bachelor's Degree)	program graduates' Attributes (GAs)					
	GA1	GA2	GA3	GA4	GA5	GA6
Take initiative in identifying and resolving problems and issues both individually and in group situations exercising leadership in pursuit of innovative and practical solutions.		√	√	√		

Apply the theoretical insights and methods of inquiry from their field of study in considering issues and problems in other contexts.	√		√				
Recognize the provisional nature of knowledge field and take this into account in investigating and proposing solutions to academic or professional issues.		√	√				√
Participate in activities to keep up to date with developments in their academic or professional field and continue to enhance their own knowledge and understanding.						√	√
Consistently demonstrate a high level of ethical and responsible behavior and provide leadership in academic professional and community environments.	√			√	√		
Behave in ways that are consistent with Islamic values and beliefs, and reflect high levels of loyalty, responsibility, and commitment to service to society.	√			√			

* This matrix is unified on all bachelor's degree programs.

5.Program learning Outcomes*

Knowledge and Understanding

K1	Define and explain the fundamentals of computing and mathematics appropriate to the discipline.
K2	Recognize the strategic framework of modern organizations management in the scope of information systems.

Skills

S1	Analyze a problem and identify the computing requirements appropriate to its solution while being aware of the impact of that solution on individuals, organizations, and society.
S2	Design, implement, and evaluate a computing-based solution to meet a given set of requirements.
S3	Use current techniques, and tools necessary for computing practices.
S4	Communicate effectively in a variety of professional contexts.
S5	Support the delivery, use, and management of information systems within an information systems environment.

Values

V1	.Recognize professional, ethical, legal, security and social issues and responsibilities
V2	.Function effectively in teams to accomplish a common goal
V3	Recognize and explore recent technology as needed, using appropriate lifelong learning strategies

Alignment of the program's learning outcomes (PLOs) with the Program's Graduates Attributes (GAs)

PLOs		K1	K2	S1	S2	S3	S4	S5	V1	V2	V3
Program's Graduates Attributes (GA)	GA1								√		
	GA2			√							√
	GA3	√		√	√	√		√			
	GA4									√	

	GA5	√					√		√
	GA6					√			

Alignment of program learning outcomes (PLOs) with the Saudi Qualifications Framework (NQF)

NQF	PLOs alignment with NQF
Knowledge and Understanding	**Knowledge PLOs**
1. Broad in-depth integrated body of knowledge and comprehension of the underlying theories, principles, and concepts in one or more disciplines or field of work, 2. In-depth knowledge and comprehension of processes, materials, techniques, practices, conventions, and/or terminology, 3. A broad range of specialized knowledge and understanding informed by current developments of a discipline, profession, or field of work, • Knowledge and comprehension of research and inquiry methodologies.	**K1**: Define and explain the fundamentals of computing and mathematics appropriate to the discipline. **K2**: Recognize the strategic framework of modern organizations management in the scope of information systems.
Skills	**Skills PLOs**
Cognitive Skills: • Apply integrated theories, principles, and concepts in various contexts, related to a discipline, profession, or field of work, • Solve problems in various complex contexts in one or more disciplines or fields of work, • Use critical thinking and develop creative solutions to current issues and problems, in various complex contexts, in a discipline, profession or field of work, • Conduct inquiries, investigations, and research for complex issues and problems. **Practical and Physical Skills:** • Use and adapt advanced processes, techniques, tools, instruments, and/or materials in dealing with various complex practical activities, • Carry out various complex practical tasks and procedures related to a discipline, professional practice, or field of work. **Communication and ICT Skills:** • Communicate effectively to demonstrate theoretical knowledge comprehension and specialized transfer of knowledge, skills,	**S1**: Analyze a problem and identify the computing requirements appropriate to its solution while being aware of the impact of that solution on individuals, organizations, and society. **S2**: Design, implement, and evaluate a computing-based solution to meet a given set of requirements in the context of the program's discipline. **S3**: Use current techniques, skills, and tools necessary for computing practices. **S4**: Communicate effectively in a variety of professional contexts. **S5**: Apply current technical concepts and practices in the core information technologies and Integrate IT-based solutions into the user environment.

Knowledge and Understanding	
and complex ideas to a variety of audiences, • Use mathematical operations and quantitative methods to process data and information in various complex contexts, related to a discipline or field of work, • Select, use, and adapt various standard and specialized digital technological and ICT tools and applications to process and analyze data and information to support and enhance research and/or projects.	
Values, Autonomy and Responsibility	**Values PLOs**
Values and Ethics: • Demonstrate commitment to professional and academic values, standards, and ethical codes of conduct, and represent responsible citizenship and coexistence with others **Autonomy and Responsibility:** • Effectively plan for and achieve academic and/or professional self-development, assess own learning and performance, and autonomously make decisions regarding self-development and/or tasks based on convincing evidences. • Autonomously and professionally manage tasks and activities related to the discipline and/or work, • Collaborate responsibly and constructively on leading diverse teams to perform a wide range of tasks while playing a major role in planning and evaluating joint work, • Actively participate in advancing the discipline and society	**V1**: Recognize professional, ethical, legal, security and social issues and responsibilities. **V2**: Function effectively in teams to accomplish a common goal. **V3**: Recognize and explore recent technology as needed, using appropriate lifelong learning strategies.

Knowledge, skills and values as defined in NQF are very comprehensive. In the table above we have underlined the key terms and phrases present in learning outcomes and their equivalent in NQF. The PLOs under knowledge, skills, and values align well with NQF as all the important points from NQF are covered by one or more PLOs.

Alignment of the Program's Learning Outcomes (PLOs) with the Program's Goals (G)

Program Goals		G1	G2	G3	G4
Program's Learning Outcomes (PLOs)	**K1**	√			
	K2	√			
	S1		√		
	S2		√		
	S3		√		
	S4				√

S5		√			
V1			√		
V2				√	
V3				√	

The above matrix maps Program's learning outcomes (PLOs) with Program's Goals (G). We already have the following two mapping before this matrix.

- Alignment of the program's learning outcomes (PLOs) with the Program's Graduates' Attributes (GAs)
- Alignment of the Program's Graduates Attributes (GAs) with the Program's Goals(G)

This PLOs to Goals mapping is consistent with these two mappings. For example S1 and V1 both map to GA1 which in turn maps to G3 based on the previous mappings. Hence in this PLOs to Goals mapping S1 and V1 should map to G3 and they do. Similar observations can be made about other PLOs and Goals.

C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	15	41	30.2%
	Elective	0	0	0.0%
College Requirements	Required	7	20	14.7%
	Elective	0	0	0.0%
Program Requirements	Required	19	53	39%
	Elective	3	9	6.6%
Capstone Course/Project	Required	2	4	2.9%
Field Experience/ Internship				
Others		3	9	6.6%
Total	Total	49	136	

* Add a table for each track (if any)

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	ELCS 101	English 1	Required		3	Institution
	MATH 110	Mathematics	Required		3	Institution
	ELCS101	English 1	Required		3	Institution
	MATH110	Mathematics	Required		3	Institution

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
	BIO110	General Biology	Required		3	Institution
	COMM101	Communications Skills	Required		3	Institution
Level 2	ELCS102	English 2	Required	ELCS101	3	Institution
	PHYS110	General Physics	Required		3	Institution
	CPIT100	Computer Skills	Required		3	Institution
	STAT110	General Statistics	Required		3	Institution
Level 3	ISLS101	Islamic Culture 1	Required		2	Institution
	CPIT221	Technical Writing	Required		2	College
	CPCS203	Programming 2	Required	CPCS202	3	College
	CPCS222	Discrete Structures	Required		3	College
Level 4	ISLS101	Islamic Culture 1	Required		2	Institution
	CPIT221	Technical Writing	Required		2	College
	CPCS203	Programming 2	Required	CPCS202	3	College
	CPCS222	Discrete Structures	Required		3	College
Level 5	ISLS201	Islamic Culture 2	Required	ISLS101	2	Institution
	ARAB101	Arabic Language 1	Required		3	Institution
	CPCS204	Data Structures	Required	CPCS202	3	College
	CPIS220	Principles of Information Systems	Required	CPIT201	3	Department
Level 6	BUS222	Introduction To Modern Management	Required		2	Department
	CPIS210	Computer Organization	Required	CPIT201	3	Department
	CPIS240	Database Management System	Required	CPCS204	3	Department
	CPIS250	Software Engineering	Required	CPCS203	3	Department
Level 7	CPIS222	Principles Of Operating System	Required	CPIS210	3	Department
	CPIS351	IS Analysis & Architecture Design	Required	CPCS203	3	Department
	BUS232	Modern Business Models	Required	BUS222	2	Department
	--------	Department Elective Course 1	Elective		3	Department
Level 8	CPIS358	Internet Applications & Web Programming	Required	CPIS240	3	Department
	CPIS354	Principles of Human Computer Interaction	Required	CPIS250	3	Department
	CPIS370	Fundamental of Data Networks	Required	CPIS222	3	Department
	BUS233	Organizational Behavior	Required	BUS222	2	Department
Level 9	CPIS357	Software Quality & Testing	Required	CPIS250	3	Department
	CPIS312	Information & Computer Security	Required	CPIS370	3	Department
	CPIS352	IS Applications Design & Development	Required	CPIS351	3	Department
	---------	Free Course 1			3	Institution
Level 10	CPIS380	Introduction to E-Business System	Required	CPIS358	3	Department
	CPIS342	Data Warehousing & Mining	Required	CPIS240	3	Department
	----------	Department Elective Course 2	Elective		3	Department

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
	ARAB201	Arabic Language 2	Required	ARAB101	3	Institution
Level 11	CPIS434	IS Strategies & Policies	Required	CPIS220 + CPIS352	3	Department
	CPIS498	Graduation Project 1	Required	90 Credit Units	1	Department
	----------	Free Course 2			3	Institution
	ACCT333	Principles of Accounting	Required	BUS222	2	Department
	ISLS301	Islamic Culture 3	Required	ISLS202	2	Institution
Level 12	CPIS499	Graduation Project 2	Required	CPIS498	3	Department
	--------	Department Elective Course 3	Elective		3	Department
	----------	Free Course 3			3	Institution
	ISLS401	Islamic Culture 4	Required	ISLS301	2	Institution

Department electives courses

Course Title	Course Code	Pre-Requisite Courses	Credit Hours
Introduction to Quantitative Analysis	STAT217	STAT210	3
Business Analysis	ACCT334	ACCT333	3
Operations Research	STAT260	STAT210	3
Decision Support Systems & Theory	CPIS320	CPIS220	3
Advanced Project & Quality Management	CPIS330	CPIS357	3
Database Management Systems II	CPIS340	CPIS240	3
Systems Design Patterns	CPIS350	CPIS250	3
SW Metrics and Economics	CPIS356	CPIS250	3
Advanced Information Systems Technologies	CPIS360	CPIS240	3
Intelligent Systems	CPIS363	CIPS250	3
Development of E-Systems & Interface Design	CPIS382	CPIS352	3
Techniques of Decision Support Systems	CPIS420	CPIS320	3
Modeling & Simulations	CPIS424	STAT217	3
IS Change Management	CPIS430	CPIS330	3
Knowledge Management	CPIS444	CPIS240	3
Business Information Systems	CPIS461	CPIS360	3
Information Systems Applications	CPIS462	CPIS461	3
Distributed Systems	CPIS464	CPIS370	3

Geographical Information Systems	CPIS465	CPIS220	3
Office Automation Systems	CPIS466	BUS232	3
Data Networks Design and Management	CPIS472	CPIS370	3
E-Systems Applications	CPIS483	CPIS382	3
E-Business Strategies	CPIS486	CPIS483	3
Selected Topics in IS	CPIS490	Department Approval	3

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

IS Program Courses

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

Course code & No.	Program Learning Outcomes									
	Knowledge		Skills					Values		
	K1	K2	S1	S2	S3	S4	S5	V1	V2	V3
CPIT100	I				I					
ELCS101						I				
MATH110	I									
PHYS110	I									
COMM101						I				
ELCS102						I				
STAT110	I									
CHEM110	I									
BIO110	I									
ISLS101								I		
CPCS202	I		I	I	I					
STAT210	I		I			I			I	
CPIT201	I		I							

Course code & No.	Knowledge		Skills					Values		
	K1	K2	S1	S2	S3	S4	S5	V1	V2	V3
CPIT221						I			I	
ISLS201								I		
CPIS220	I				I			I		
CPCS203	I		I	I	I					
BUS222		I						I		
ARAB101						I				
CPCS222	I		I	I		I			I	
CPIS210	I		I	I	I					
CPCS204	P		P	P	P					
BUS232		P						P		
CPIS222	P		P		P			P		
CPIS240	P			P	P			P		
CPIS250	P		P	P	P			P	P	
BUS233		P						P	P	
CPIS370	P		P		P			P		
CPIS358			P	P	P					
CPIS354	P		P	P		P		P		
CPIS357	P			P	P	P	P		P	
CPIS351	P		P	P	P		P		P	I
CPIS312	M	M	M		M		M	M		
CPIS380		M	M			M		M	M	
CPIS352			M	M	M	M	M		M	P
ACCT333		M	M		M			M	M	
ARAB201						M				
ISLS301								M		
CPIS342	M		M	M	M					
CPIS498	M	M	M	M		M	M	M	M	M
ISLS401								M		
CPIS434		M	M			M	M		M	M
CPIS499	M	M		M	M	M	M	M	M	M

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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.

Program Learning outcomes and the teaching and learning strategies used to achieve them.

PLOs	Teaching& Learning Strategies
Knowledge:	

K1	Define and explain the fundamentals of computing and mathematics appropriate to the discipline	1. Class / Group discussion 2. Self-explanation 3. Observation 4. Concept Maps 5. Mind Maps 6. Semantic Maps 7. Guided discovery 8. Investigation 9. KWLH (Know, Want, Learned, How) technique 10. Reciprocal teaching
K2	Recognize the strategic framework of modern organizations management in the scope of information systems.	

Skills:

S1	Analyze a problem and identify the computing requirements appropriate to its solution while being aware of the impact of that solution on individuals, organizations, and society.	
S2	Design, implement, and evaluate a computing-based solution to meet a given set of requirements in the context of the program's discipline.	1. Problem-solving 2. Scientific research 3. Academic debate 4. Generative learning 5. Lab-based learning 6. Project-based learning 7. Model-based learning 8. Micro-teaching 9. Storytelling
S3	Use current techniques, skills, and tools necessary for computing practices.	
S4	Communicate effectively in a variety of professional contexts	
S5	Apply current technical concepts and practices in the core information technologies and Integrate IT-based solutions into the user environment.	

Values:

V1	Recognize professional, ethical, legal, security and social issues and responsibilities.	
V2	Function effectively in teams to accomplish a common goal	1. Collaborative learning 2. Self-learning 3. Brain storming 4. Peer learning 5. Case studies 6. Team work
V3	Recognize and explore recent technology as needed, using appropriate lifelong learning strategies.	

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.

Program Learning outcomes and the assessment methods used to achieve them.

PLOs		Assessment Methods (Direct and Indirect)
Knowledge:		
K1	Define and explain the fundamentals of computing and mathematics appropriate to the discipline	**Direct:** - Writing - Oral **Indirect:** - Program assessment survey
K2	Recognize the strategic framework of modern organizations management in the scope of information systems.	
Skills:		
S1	Analyze a problem and identify the computing requirements appropriate to its solution while being aware of the impact of that solution on individuals, organizations, and society.	**Direct:** - Writing - Oral - Performance - Observation **Indirect:** Program assessment survey
S2	Design, implement, and evaluate a computing-based solution to meet a given set of requirements in the context of the program's discipline.	
S3	Use current techniques, skills, and tools necessary for computing practices.	
S4	Communicate effectively in a variety of professional contexts	
S5	Apply current technical concepts and practices in the core information technologies and Integrate IT-based solutions into the user environment.	
values:		
V1	Recognize professional, ethical, legal, security and social issues and responsibilities.	**Direct:** - Performance - Observation **Indirect:** - Program assessment survey
V2	Function effectively in teams to accomplish a common goal	
V3	Recognize and explore recent technology as needed, using appropriate lifelong learning strategies.	

D. Student Admission and Support:

1. Student Admission Requirements

To be considered for admission, the applicant shall meet the following requirements:

1) The applicant shall hold a high school certificate or an equivalent certificate from inside or outside the Kingdom of Saudi Arabia.
2) The applicant shall have obtained the secondary school certificate, or its equivalent, in a period of less than five years. Nonetheless, the University Council may exempt applicant from this condition if a convincing reasons presented.
3) The applicant should have a certificate of good conduct.
4) The applicant should successfully pass any examination or interview deemed necessary by the University Council.
5) The applicant shall be medically fit.
6) An approval shall be obtained from the applicant's employer, if the applicant is an employee in any government or private institution.

The applicant shall meet any other requirements specified by the University Council and announced at the time of application.

2. Guidance and Orientation Programs for New Students

The new students will be invited to an academic guidance meeting, in the first week, aimed to shed some light on the regulations and the registration process at the faculty of science, computer science department.

An agenda will be introduced to the new students that provide an introduction to student's rights and responsibilities. In addition, some information about the university life through campus; visits, meetings, lectures, and other activities. This could be done via the cooperation with different academic & support departments in the faculty.

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

Faculty members provide career guidance to the students using their knowledge, expertise of their field of specialization and vision. Such career guidance is provided to fresh students thinking to join the department and also to graduating students. Students are also provided information regarding the required professional trainings, courses and certifications required for maximizing their chances of success in their preferred career paths after graduation. By the time students are closer to graduation, they have a good idea of what career path they want to choose. Graduation project servers as an excellent tool, the students can use to gain valuable experience and expertise for improving their chances of success, in their chosen career paths. During years of study, students are invited to visit other universities and local companies to provide them with better understanding of different professional roles and potential career paths related to the field of IT.

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

1. The teaching staff member should take into account the individual differences between the students who are low achievers and talented ones during their lectures.
2. The low achievers' students can take advantage of the office hours of the teaching staff member which have been defined since the beginning of the semester.

The talented students have the chance to finish their studies in short times compared to their peers

E. Teaching and Administrative Staff

1. Needed Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professors	IS	Business Intelligence		1	1	2
Associate Professors	IS	Data Analytics		1	1	2
Assistant Professors	IS	Information Systems		2	2	4
	CS	Programming, Software Engineering, Operating Systems, Databases, Computer Architecture, Networking, Computer and network security, Human Computer Interaction		6	6	12
	Management	Business Administration		2	2	4
Lecturers	IS & Management	Business Intelligence, Data Analytics Management		3	3	6
	CS	Programming, Software Engineering, Operating Systems, Databases, Computer Architecture, Networking, Computer and network security, Human Computer Interaction		4	4	8
Teaching Assistants	CS	Programming, Software Engineering, Operating Systems, Databases, Computer Architecture,		3	3	6

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
		Networking, Computer and network security, Human Computer Interaction				
Technicians and Laboratory Assistants	CS	Networking		1	1	2
Administrative and Supportive Staff						
Others (specify)						

2. Professional Development

2.1 Orientation of New Teaching Staff
Describe briefly the process used for orientation of new, visiting and part-time teaching staff

The new teaching staff is welcomed in the department at the beginning of the academic year and receives special assistance aiming to clarify and explain the teaching process and strategies with the offered facilities.

Training sessions on modern teaching aids such as the use of smart board and E-learning methods and tools such as blackboard system.

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.)

F. Learning Resources, Facilities, and Equipment

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

The department of Information Systems gives special attention to the professional development of its faculty members. For this purpose, the Faculty of Computing and Information Technology organizes activities on a regular basis. Some of these activities are: workshops, short courses, seminars, and consultations.

During the academic year, a number of workshops and short courses are organized at the Faculty of Computing and Information Technology. All faculty members of the Information Systems department are invited to attend these activities.

The activities are carefully selected to introduce faculty with new ideas and latest technologies. For example:
- Workshop related to use of e-learning systems: blackboard system.
- Workshop on "Academic Advising" to Guide the students for selecting their courses.
- Workshop on Search and retrieval in digital library databases
- Workshop entitled "Effective Teaching Strategies"
- Workshop entitled "Exam Preparation"
- Research Seminars: "How to write paper"
- Research Seminars: "Papers publishing in ISI journals"

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

- Offices (such as administrative, faculty, clerical, and teaching assistants) and any associated equipment that is typically available there.
- Classrooms and associated equipment that are typically available where the program courses are taught.
- Laboratory facilities including those containing computers (describe available hardware and software) and the associated tools and equipment that support instruction. Include those facilities used by students in the program even if they are not dedicated to the program and state the times they are available to students. Complete Appendix C containing a listing of the major pieces of equipment used by the program in support of instruction.
- Rafha campus branch contains the main library which in turn contains a variety of information resources such as books, periodicals, digital libraries, documents, manuscripts and digital sources. It is the main source for students to access the required reading material. A digital library system is also offered to both faculty members and students to access online resources. The Deanship of Library Affairs is the governance body for the main library. The Deanship of Library affair arranges all the latest reading materials. Faculty and students can also request any reading material.
- Rafha campus branch possesses a medical center which regularly carries out in case of a health hazard or emergency, the branch can also request the assistance of Rafha's public hospital which includes an emergency service. Both of these health facilities are located at a walking distance from the campus.

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

All labs are provided with circuit breaker and fire alarms
Building provided with emergency exit and fire alarms
The university branch has a medical center situated 200 meters far from the campus.

G. Program Management and Regulations

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

Councils:
- Information Systems Department council

Boards:
- Information Systems Advisory Board
- Information Systems Student Advisory Board

Committees:
- Students Affairs and Equivalences Committee
- Faculty Members Affairs Committee
- Higher Studies Committee
- Plans and Curricula Committee
- Quality and Academic Accreditation Committee
- Academic Advising Committee
- Scheduling and Exams Committee
- Community Service Committee
- Public Relations and Media Committee
- Graduates Committee
- Field Training Committee
- Labs Committee

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 Information Systems program possesses four stakeholders (students, alumni, faculties and employers) involved in the program planning and development.
Questionnaires and surveys are distributed to the stakeholders to ascertain their opinions and satisfaction on the program.

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.)

1. Deanship of admission and registration:
   http://www.nbu.edu.sa/AR/Deanships/Admissions/Pages/default.aspx
2. Deanship of student affairs
   http://www.nbu.edu.sa/AR/Deanships/Student_Issues/Pages/default.aspx
3. Deanship of high studies
   http://www.nbu.edu.sa/AR/Deanships/High_Studies/Pages/default.aspx
4. Deanship of quality and academic accreditation
   http://www.nbu.edu.sa/AR/Deanships/Quality_and_Academic_Accreditation/Pages/default.aspx
5. Deanship of E-Learning
   http://www.nbu.edu.sa/AR/Deanships/E-Learning/Pages/default.aspx
6. Deanship of Scientific Research
   http://www.nbu.edu.sa/AR/Deanships/Scientific_Research/Pages/default.aspx
7. Deanship of preparatory year and supporting studies.
   http://www.nbu.edu.sa/AR/Deanships/Preparatory_Year_Supportive_Studies/Pages/default.aspx
8. Deanship of Library Affairs

http://www.nbu.edu.sa/AR/Deanships/Library_Issues/Pages/default.aspx

H. Program Quality Assurance

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

The quality assurance manual describes the procedures including information about the institutions system of assessing programs and services, the role of the institution's quality center and systems for gathering and analyzing data on quality of performance and planning for improvement.

2. Program Quality Monitoring Procedures

1. Faculty members monitoring
   - Selecting qualified faculty members to ensure their quality of teaching and research.
   - Monitoring their performance through student evaluations each semester
2. Teaching process and program plan monitoring
   - Monitoring the courses teaching outline through regular achievement reports. These reports should include teaching progress and they should be submitted at least two times during the semester.
3. Measuring learning outcomes
   - Measuring student's performance through exams, quizzes, and assignment results

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

The program requires students to take some courses taught by other departments. To monitor the quality of the courses taught by other department the information system department do the following:

1. The Program Quality Monitoring procedure is applied like a course taught by the department.
2. All required tasks will be requested from the leaderships of the other departments.
3. The department is coordinating with all the concerned departments.

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

1. The syllabus of all courses is available online to all instructors and students.
2. Checking the course outlines for both male and female sections for all university branches to ensure the consistency.
3. Identify a coordinator for each course to maintain quality and consistency for all sections in all branches.
4. For all sections opened to a given course, it's mandatory to follow the same assessment plan.

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

1. Academic cooperation between Northern Border University and Turkish University: Signing an agreement for academic and scientific cooperation and exchange of experiences with the two universities of Istanbul and Ankara
2. Framework Agreement for Cooperation and Knowledge Exchange between the Northern Border University and the Japanese University of Kanzawa

3. Academic cooperation between Northern Border University and Rouen University: Contract of services between the University Medical College and the French University of Rouen
4. Academic cooperation between Northern Border University and Harvard University: Contract of services between the University School of Medicine and the Jocelyn Center of Harvard University
5. The Deanship of Scientific Research funds innovative research projects. Faculties are invited and encouraged by the department to apply for research grants in which cooperation and partnerships can be built with other researchers, research and educational institutions.

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

1. Assessment plan for Program Learning Outcomes (PLOs):
   - The department council has approved a two-year cycle where each PLO is assessed each semester.
   - The timeline illustrated in the following table demonstrates the assessment plan that provides four cycles of PLOs assessment for the two academic years.

PLOs	Academic Year 1	Academic Year 2
K1	X	X
K2	X	X
S1	X	X
S2	X	X
S3	X	X
S4	X	X
S5	X	X
V1	X	X
V2	X	X
V3	X	X

2. Mechanisms of Using its Results in the Development Processes

- The CLO-PLO based assessment provides summary of PLOs attainments during a semester. This summary is used by Assessment and Evaluation Committee to identify possible following corrective course of actions:

  Revision in pre-requisite as inadequate pre-requisite knowledge.

  Revision in course or course material or provide more helping material, modification in text or reference material.

  Modifications in course assessment methods.

  Revision of the learning accomplishments of a course.

  The graduation project addresses most of the Program Learning Outcomes and missing in the presented evaluation. It is the terminal comprehensive activity and provides students with the opportunity to exhibit the acquired skills and knowledge during the program.

- The Quality and Academic Accreditation Unit (QAAU) of the faculty of Computing and Information Technology (FCIT) have implemented the required forms for direct and indirect assessment with the help of Assessment and Evaluation Committee.

  The assessment committee is looking into the CLO based assessment method for the student outcomes and determines the reasons of non-achievements. The trigger is initiated with not achievement of PLO in a particular course.

  Later, details analysis of course files to assess the achievement of CLO is performed. Then, the Assessment and Evaluation Committee requires from the instructor to provide Continuous Improvement Plan and Strategies.

- Track program graduates and taking their feedback and suggestions and use these suggestions for making decision regarding any plan modification.
- Holding regular surveys for current and graduated students to evaluate the program, and to focus on problems that they faced during studying and after graduation.
- Consulting organizations in the field of this program to find out their requirements and what they expect from our graduates

7. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Teaching performance	Students	Surveys	End of each semester
Leadership	Faculty members	Surveys	End of each semester
Learning Resources	Students and faculty members	Meetings and surveys	During the semester
Graduates performance	Faculty members	Meetings and surveys	End of academic years
Program plan	Faculty members graduates, external	Meetings and surveys	End of academic years

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
	reviewers from the industry		
Student field training	Faculty members	Visits	During the training program

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 (4) year.

* including KPIs required by NCAAA

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
1- Mission and Goals	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives	80%	Data regarding the achievement rate of all the indicators as in the program operational plan should be collected and the overall achievement percentage should be calculated.	End of each academic year
3- Teaching and Learning	KPI-P-02	Students' Evaluation of quality of learning experience in the program	3.75	Exit survey should be conducted among the final year students to assess the quality of learning experiences. The percentage of students who strongly agree or agree to the statements in the survey is to be calculated.	End of each academic year
	KPI-P-03	Students' evaluation of the quality of the courses	4	Online Course Survey should be conducted to the students towards the end of the semester to assess their registered courses. The percentage of respondents who strongly agree or agree is to be calculated from the survey	End of each semester
	KPI-P-04	Completion rate	90%	Data regarding the number of students who registered in the 1st semester of the year 1 (N1) and number of students who completed the graduation in the end of the year 5 (N2) are to be collected. The percentage (N1/N2)*100 has to be calculated.	End of each academic year

Program Specification

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
	KPI-P-05	First-year students retention rate	90%	Data regarding the number of students who registered in the start of the first academic program year (N1) and number of students who registered in the start of the second academic program year (N2) are to be collected. The percentage (N1/N2)*100 has to be calculated	End of each academic year
	KPI-P-06	Students' performance in the professional and/or national examinations	85%	Data regarding the number of students who participated in the national and professional exam (N1) and number of students who have succeeded the exam (N2) are to be collected. The percentage (N1/N2)*100 has to be calculated	End of each academic year
	KPI-P-07	Graduates' employability and enrolment in postgraduate programs	40%	Data regarding the number of students who graduated (N) at the end of each year, and number of students who are employed (N1) and the number of students enrolled in graduate studies programs (N2) are to be collected. The percentage ((N1+N2)/N)*100 has to be calculated.	Start of each next academic year
	KPI-P-08	Average number of students in the class	15	Data regarding the number of students who registered in the current semester (N) and number of active sections (N1) are to be collected. The average number of students in a class (N/N1) has to be calculated.	Each semester
Students -4	KPI-P-09	Employers' evaluation of the program graduates' proficiency	80%	Employer survey (Q-GA) should be conducted to assess the proficiency of the graduates. The percentage of employers who strongly agree or agree to the statements in the survey has to be calculated.	End of each academic year
Teaching -5 Staff	KPI-P-10	Students' satisfaction with the offered services	75%	The survey (Q-SS) should be conducted among the students to assess their satisfaction level with the offered services. The percentage of students who strongly agree or agree to the statements in the survey has to be calculated	End of each academic year
	KPI-P-11	Ratio of students to teaching staff	10:1	Data should be collected regarding the number of faculty members and the number of students assigned for each course. The ratio between the number of teachers and the students assigned for each course has to be calculated.	End of each academic year

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
	KPI-P-12	Percentage of teaching staff distribution	10 % (Prof) 10% (Asso. Prof) 50% (Assist. Prof) 25% (Lect)	Data should be collected regarding the number of teaching staff based on the gender (male/female), based on academic rankings (Prof., associate prof., asst prof, lecturers) and the percentage has to be calculated out of the total teaching staff	End of each academic year
	KPI-P-13	Proportion of teaching staff leaving the program	0%	Data is to be collected from the HoD regarding the number of teaching staff leaving the institution for reasons other than age retirement and the total number of teaching staff in the department. Percentage of number of teaching staff leaving the institution out of the total number of teaching staff has to be calculated	End of each academic year
	KPI-P-14	Percentage of publications of faculty members	80%	Data regarding the total number of teaching staff and number of teaching staff who have at least one research publications should be collected and thereby percentage is calculated.	End of each academic year
	KPI-P-15	Rate of published research per faculty member	2	Data regarding the total number of teaching staff and the total number of research publications should be collected from NBU research deanship and percentage should be calculated	End of each academic year
	KPI-P-16	Citations rate in refereed journals per faculty member	4	Data regarding the total number of teaching staff who have research publications and the total number of citations in research publications should be collected from NBU research deanship and percentage should be calculated.	End of each academic year
Learning -6 Resources, Facilities, and Equipment	KPI-P-17	Satisfaction of beneficiaries with the learning resources	90%	Survey (Q-LS) should be conducted among the students to assess the satisfaction level with the learning resources. The percentage of students who strongly agree or agree to the statements in the survey has to be calculated	End of each academic year

I. Specification Approval Data

Council / Committee	Information Systems Department Council
Reference No.	09
Date	21/02/2022