APPROVED

Bachelor of Information and Communications Technology (Programming Major)
Faculty of EDICT (Engineering,Design and ICT)

Programme Title (Arabic)	البكالوريوس في تقنية المعلومات والاتصالات (تخصص البرمجة)

Acronym / Abbreviation *	BICTP

Nature	Major

Programme Code	ICT8011	Programme Duration	4 Year/Cycle	Programme Level	Level 8

Programme Credits	480	Award Category	Bachelors		

Effective From	2022/2023 Sem 3

Owner	School of ICT

Professional Body

Professional Body	Recognition Status	Effective From	Interim Date	Professional Bodies	Contact Person	Evidence
Employability Skills	Yes	04/01/2021				

Target Groups *

High School Graduates
International Students
Unemployed
Other

	Awarded where candidates have met all of the requirements below:
	• Successful completion of, or exemption from, all courses listed in Schedule A
	and
	• Accumulation of at least 60 credits from courses in Schedule B
	and
	• Accumulation of at least 45 credits from courses in faculty (30) outside of faculty (15) electives
	and
	• Accumulation of 15 credits courses as National requirement.

Qualification Completion Requirements Criteria	and • Achieve the Bahrain Polytechnic General Qualification Requirements as documented in the naming and Awarding Qualifications policy and • Completion of courses to accumulate a minimum of 480 credits from any Bahrain Polytechnic Qualification;

Programme Overview *	Bahrain Polytechnic has been established by the Bahrain Government to address the need for a skilled Bahraini workforce to support economic growth and development. To support the development of the workforce Bahrain Polytechnic aims to produce graduates with applied, professional qualifications. It is widely acknowledged that Information Technology is a key sector and enabler for growth in any modern economy. The Bachelor of ICT (BICT) programme aims to develop rounded graduates who have not only the requisite skills demanded of the 21 st Century workplace but also skills in key areas of technology used in a modern ICT organisation. The BICT programme is currently divided into five main domains, Programming, Databases, Networking and Information Systems (IS), and Cyber Security (CYS), in which students can specialise and earn a qualification in. Given the rapidly changing nature of the industry, the programme's currency is maintained through the upskilling of academic staff, the introduction of new courses and the solicitation of requirements from key industry and government stakeholders. The programme aims to develop core skills for its graduates in a broad range of inter-related ICT areas, initially giving students a solid ground in core computing topics and eventually building them up to be competent specialists in their chosen area. Core theories form the cornerstone of the programme, with hands-on, applied skills being developed through the Problem-Based Learning (PBL) philosophy. Project work forms another cornerstone of the programme, with an emphasis on projects from the very beginning in Year 1, right through to a final capstone project in semester one of Year 4, followed by an Industry Project in the second semester. The importance of industry certification in addition to the Bachelor's degree is also emphasised. Because a significant proportion of the programme is based on industry-standard technologies, students are encouraged to take extra certifications to further enhance their employment opportunities.

Entry and Selection *	General entry requirements such as secondary school achievements, English, and Mathematics are described in the Student Admission Policy A/AB/010. Specific entry requirements for this qualification, beyond those described in the Student Admission Policy, are as follows:
	
	Applicants must demonstrate competence in English and in Mathematics. These requirements may be met by:
	
	• The successful completion of
	
	    ○ AP4203 English 2
	
	    ○ AP4102 Mathematics 2 (Technical) or similar
	
	• or passing English and Mathematics Selection Tests at the required level
	
	Moreover:
	- Bahrain Polytechnic Foundation program graduates will be accepted in the Bachelor programs if their GPA is more than 3.
	- Bahrain Polytechnic diploma graduates can progress to the higher qualification (Associate Degree or Bachelor) directly if their GPA is more than 2.75 (more than 75%)
	- Associate Degree graduates of Bahrain Polytechnic can progress to higher-level qualifications.
	
	All the above may be accepted in the BICT programme according to the availability of seats, per academic year.

Selection and Criteria and Process *	Where there are more applicants who meet the programme entry criteria than can be accepted, the following shall be used: - Selection Criteria - Successful completion of the Foundation program of Bahrain Polytechnic and demonstration of a commitment to study. - Results from programme entry tests. - Prior educational achievement in Bahrain Polytechnic earlier steps in pathways and work experience. - Selection Process - The School will determine on a yearly basis the seats available for each of the entry and selection categories - Additionally, applicants may be required to attend an interview.

	Where the number of applicants for the Programming Major exceeds the available places, the following criteria for selection apply: • First priority to students who have scholarships in the major • If further selection is required, rank eligible students from above by the highest combined GPAs from IT6008 Computer Programming 1 and IT6005 Database Systems 1.
Major Selection Criteria *	

Accreditation / External Approval Requirements *	BCS accredited - The Chartered Institute of IT.

Attendance Requirements *	**Institutional attendance requirements are described in the policy Student Attendance A/AB/006. There are no programme-specific attendance requirements.**

Qualification Overview *	The qualification encompasses an initial three semesters of full-time academic years of study in the broad ICT disciplines at NQF levels 6 and 7, followed by five full-time academic semesters of specialist study at NQF levels 7 and 8. The intention is to build up core knowledge in a range of areas including networking, operating systems, databases, and design techniques in addition to programming. After the first three semesters, the student can then specialize in programming in areas including desktop applications, web applications, mobile applications, games development, and database applications. The student also becomes familiar with standard software production practices such as the software development life cycle (requirement analysis and market research, design, implementation, testing, and technical documentation) and rapid prototyping. During those specialization activities, students receive exposure to the most common languages such as Java, C#, Swift, ASP.Net, PHP, SQL, JavaScript, and tools such as Visual Studio, xCode, Netbeans, and Game Engines. In the final year, this knowledge is consolidated in the form of the in-house, capstone project where students design a software product according to user requirements while managing and documenting the process as they progress. During this last year, students have the opportunity to choose additional technologies that they want to specialize in but have not been introduced to during the previous years, and apply them to their project development.

Qualification Aim *	The programme aims to develop work-ready, skilled ICT graduates who are aware of the legal, ethical and professional standards required to work in Bahrain and internationally. ICT graduates will be conversant with the latest ICT techniques and technologies to be flexible in the workplace and adaptable in a very fast-moving field. They will have the skills required to choose the optimal solution for a particular problem and to implement it following professional standards and will have the skills that enable them to work effectively in teams and to coherently present their ideas in written and oral form to a range of audiences.
	Typical positions for the Programming major graduate include: • Analyst Programmer • Software Developer

Graduate Pathways and Destination *	- Software Engineer - Mobile programmer - Games developer - Web developer

Empolyability Skills Generic Definition:

Communication	Communicate in ways that contribute to productive and harmonious relationships across employees and customers.
Team work	Work effectively independently and in collaboration with others.
Problem solving	Think critically and respond appropriately to changing needs within a growing and diversifying economy.

Initiative and enterprise	Apply resourcefulness, innovation and strategic thinking to a range of workplace situations.
Planning and organisation	Plan and manage their working lives.
Self management	Demonstrate self discipline and adaptability, and be able to plan and achieve personal and professional goals.
Learning	Understand the need for and engage with continuous learning throughout the lifespan.
Technology	Utilize information technology effectively and ethically in their personal and professional lives.

Other Information *

Programme Learning Outcomes

On successful completion of this programme the learner will be able to :

Description
Demonstrate critical knowledge and understanding of the latest Information and Communications Technology systems and techniques.
Recognise the professional, moral, and ethical issues involved in exploiting computer technology and be guided by appropriate professional, ethical and legal practices in a Bahrain context.
Comprehend and follow formal software development methodologies.
Demonstrate knowledge of a variety of techniques for software requirements analysis
Exhibit critical knowledge of object oriented programming
Analyse existing systems and provide models and specifications of same.
Evaluate designs for new systems and assess capabilities of designed system against specified requirements.
Create or implement appropriate Information and Communications Technology systems from designs documents.
Document system solutions for a range of audiences.
Use specialist level skills to effectively manage and maintain existing systems.
Design, implement and test solutions from a problem description to meet specific user requirements using several programming languages
Design graphical user interfaces that conform to usability standards
Analyse and debug existing components and software by following a test plan.
Use a variety of development environments and software development kits to develop programs for different target platforms.
Follow best practice, industry standards, professional ethics, diagram designing, programming and documentation conventions during the programming process.
Practice as a Professional using 21st Century Skills

Semester Schedules

Year 1 / Semester 1

Core	
Course Code	**Title**
IT6001	**Computer Systems**

IT6001	**Computer Systems**

EL6001	**English for EDICT 3**

IT6010	**Maths for Computing**

IT6004	**Unix Systems**

Year 1 / Semester 2

Core

Course Code	Title
IT6008	**Computer Programming 1**

IT6005	**Database Systems 1**

EL6002	**English for EDICT 4**

IT6003	**Networks and Data Communications**

Year 2 / Semester 1

Core	
Course Code	**Title**
IT6011	**Introduction to Information Security**

NR	**National Requirements**

IT7001	**Systems Analysis and Design**

IT6012	**Web Fundamentals**

Optional	
Course Code	**Title**
NR-Arabic	**National Requirements- Arabic**

Year 2 / Semester 2

Core	
Course Code	**Title**
ED7000	**Applied Project**

IT7008	**Computer Programming 2**

IT7005	**Database Systems 2**

Elective	
Course Code	**Title**
NEDICTE	**Non-EDICT Electives**

Year 3 / Semester 1

Core	
Course Code	**Title**
IT7009	**Artificial Intelligence**

IT8108	**Mobile Programming**

IT7006	**Object-Oriented Design**

Year 3 / Semester 1 & 2

Elective	
Course Code	**Title**
EDICTE	**EDICT Electives**

Year 3 / Semester 2

Core	
Course Code	**Title**
IT8118	**Advanced Programming**

IT8415	**Database Programming 2**

IT8101	**Games Development**

Year 4 / Semester 1

Core	
Course Code	**Title**
IT7099	**IT Project**

Year 4 / Semester 2

Optional	
Course Code	**Title**
IT8199	**Co--operative Learning Project (Programming)**

IT8097	**Entrepreneurship – Lean Start-up**

IT8098	**IT Research Project**