

APPROVED

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

Programme Title (Arabic)	تالاصت إال او تامول عمل ا ؤينقت يف سوي رول الكبل (تالكبشلال ميمصت صصخت)					
Acronym / Abbreviation *	BICTN					
Nature	Major					
Programme Code	ICT8031	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						
	<p>Awarded where candidates have met all of the requirements below:</p> <ul style="list-style-type: none">• Successful completion of, or exemption from, all courses listed in Schedule A <p>and</p> <ul style="list-style-type: none">• Accumulation of at least 60 credits from courses in Schedule B <p>and</p> <ul style="list-style-type: none">• Accumulation of at least 45 credits from courses in faculty (30) outside of faculty (15) electives <p>and</p>					

<div data-bbox="96 507 351 560">Qualification Completion Requirements Criteria</div>	<div data-bbox="499 100 1711 367"><ul style="list-style-type: none">• Accumulation of 15 credits courses as National requirement.<p>and</p><ul style="list-style-type: none">• Achieve the Bahrain Polytechnic General Qualification Requirements as documented in the naming and Awarding Qualifications policy<p>and</p><ul style="list-style-type: none">• Completion of courses to accumulate a minimum of 480 credits from any Bahrain Polytechnic Qualification;</div>
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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 in 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 21st 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, 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, 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.

<div>Programme Overview *</div>

	<p>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:</p> <p>Applicants must demonstrate competence in English and in Mathematics. These requirements may be met by:</p> <ul style="list-style-type: none"> • The successful completion of <ul style="list-style-type: none"> ◦ AP4203 English 2 ◦ AP4102 Mathematics 2 (Technical) or similar • or passing English and Mathematics Selection Tests at the required level. <p>Moreover:</p> <ul style="list-style-type: none"> - 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 the higher-level qualification. <p>All the above may be accepted in the BICT programme according to the availability of seats, per academic year.</p>

Entry and Selection *

	<p>Where there are more applicants who meet the programme entry criteria than can be accepted, the following shall be used:</p> <ul style="list-style-type: none">• Selection Criteria<ul style="list-style-type: none">- Preference will be given to students who have successfully completed the Foundation programmes at Bahrain Polytechnic and have clearly demonstrated an aptitude for ICT and a commitment to their study.- Results from programme entry tests will be used to select students with the highest likelihood of successfully completing the degree programme.- Prior educational achievement in Bahrain Polytechnic earlier steps in pathways and work experience.• Selection Process<ul style="list-style-type: none">- 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.

Selection and Criteria and Process *

Major Selection Criteria *	<p>Where the number of applicants for the Networking Major exceeds the available places, the following criteria for the selection apply:</p> <ul style="list-style-type: none">• 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 IT6003 Networking 1 and IT6004 Unix Systems.

	BCS accredited - The Chartered Institute of IT.

Accreditation / External
Approval Requirements *

	<p>Institutional attendance requirements are described in the policy Student Attendance A/AB/006. There are no programme specific attendance requirements.</p>

Attendance Requirements *	
	<p>The qualification encompasses an initial three semesters 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 programming, operating systems, databases and design techniques in addition to networking. After the first three semesters, the student can then specialise in networking in areas including network security, mobile/wireless communication, ethical hacking and data centre implementations. 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 the networking major specialisation stage the student's expertise is developed in many areas. The student's ability to design, install and troubleshoot network installations is developed and enhanced in networking 2, advanced networking and data centre management courses where students will be exposed to many technologies that are used to operate LAN and WAN infrastructures. In the network security and ethical hacking courses students will become experienced in how to both implement and prevent data security breaches. The wireless communication course will allow students to</p>

implement a modern mobile/wireless infrastructure similar to the ones implemented by the mobile carriers in Bahrain. In the final year, this knowledge is consolidated in the form of the in-house, capstone project where students design a networking topology and implementation according to user requirements while managing and documenting the process as they progress. Central too many of the networking courses is a fully equipped server room so the students can get hands on work ready skills at all stages throughout the course. 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 Overview *

	<p>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 work place 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.</p>

Qualification Aim *

	<p>Typical positions for the networking major graduate include:</p> <ul style="list-style-type: none">• Network administrator• 4G/5G integration engineers• Network engineer• Network/Information systems manager• Information system security officer• CCNA/CCNP Engineer

Graduate Pathways and Destination *					
	<table><tr><td data-bbox="439 1316 788 1412">Empolyability Skills Generic Definition:</td><td data-bbox="788 1316 2110 1412"></td></tr><tr><td data-bbox="439 1412 788 1500">Communication</td><td data-bbox="788 1412 2110 1500">Communicate in ways that contribute to productive and harmonious relationships across employees and customers.</td></tr></table>	Empolyability Skills Generic Definition:		Communication	Communicate in ways that contribute to productive and harmonious relationships across employees and customers.
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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 *

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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.
Demonstrate knowledge of core Local Area Network (LAN), Wide Area Network (WAN) and Mobile Communications concepts.
Define the concepts and technologies required to secure a network with fundamental understanding of network security.
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.
Configure and troubleshoot network devices ranging from small to enterprise and data centre networks.
Design and build a scalable internetworking network using LAN and WAN technologies.
Implement a secure network infrastructure and security policies.
Perform an analysis of a network using risk management and mitigation techniques.
Apply knowledge of mobile/wireless data communication technologies to design and implement a mobile/wireless communication solution.
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
IT7003	Networking and Data Communications 2
IT7004	Operating Systems and Platforms
Elective	
Course Code	Title
NEDICTE	Non-EDICT Electives

Year 3 / Semester 1

Core	
Course Code	Title
IT7009	Artificial Intelligence

IT8303	Computer Networking 3
IT7301	Ethical Hacking

Year 3 / Semester 1 & 2

Elective	
Course Code	Title
EDICTE	EDICT Electives

Year 3 / Semester 2

Core	
Course Code	Title
IT8323	Advanced Networking
IT8213	Data Centre Management
IT8313	Wireless Communications

Year 4 / Semester 1

Core	
Course Code	Title
IT7099	IT Project

Year 4 / Semester 2

Optional	
Course Code	Title
IT8399	Co-operative Learning Project (Networking)
IT8097	Entrepreneurship – Lean Start-up
IT8098	IT Research Project