

## Program Viewbook

### Bachelor of Computer and Networking Engineering Technology (BCNET)

#### Program Description

The Bachelor of Computer and Networking Engineering Technology (CNET) is a 4-year program designed to meet the growing demand for highly skilled Information Technology (IT) professionals. The program provides a unique combination of vital technologies subjects, delivering an innovative balance between theoretical foundations and practical applications that employers value. The program equips students with the knowledge, skills, and competencies to excel as IT professionals in today's dynamic and technology-driven world emphasizing life-long learning, professional responsibility, and adaptability.

Graduates of the CNET program are prepared for diverse career paths across the IT sectors. They may take roles in network administration, network security, system administration, and network analysis, as well as specialize in areas such as internet networking, IT project management, and IT management. In addition, the program opens opportunities in database design system analysis, cloud engineer, IoT engineer, ensuring graduates are well-positioned to contribute to the development, management, and security of modern information systems.

#### Program Learning Outcomes (PLOs)

- PLO 1: Apply acquired knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline.
- PLO 2: Design partial or complete specialized systems or processes considering appropriate tradeoffs, theories, best practices, and social implications.
- PLO 3: Communicate effectively using written, oral, and graphical communication with all stakeholders, team members, professionals, and the public.
- PLO 4: Conduct standard tests, measurements, and experiments and analyze and interpret the results to improve processes.
- PLO 5: Work in an effective and creative way individually and in teams and demonstrate leadership skills.
- PLO 6: Take responsibility as an IT professional to design, select, apply, deploy and manage IT systems to support the organization in multi-cultural and multi-disciplinary teams.
- PLO 7: Exhibit an understanding of professional, ethical, legal, security and social issues and responsibilities and engage in continuing professional development.

#### Program Completion Requirements

The Bachelor of Computer and Networking Engineering Technology (BCNET) degree shall be awarded to a student who is officially enrolled in the program and has fulfilled the following requirements:

- Successful completion of 133 credit hours.
- Achievement of a minimum cumulative GPA of 2.0 on a 4.0 scale.
- Completion of at least 50% of total program credit hours at CUD.
- Completion of the Internship and Graduation Project while enrolled at CUD.

## Program Structure

<b>University Requirements Courses</b>	<b>24 Cr. Hrs.</b>
<b>Core Courses</b>	<b>30 Cr. Hrs.</b>
<b>Major Courses</b>	<b>79 Cr. Hrs.</b>
<b>Total</b>	<b>133 Cr. Hrs.</b>

## List of Courses

<b>I. University Requirement Courses</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Prerequisite</b>	<b>Cr. Hrs.</b>	
<b>Compulsory Courses</b>				<b>18</b>
LNG 181	English I for Engineering and Computing	None	3	
LNG 182	English II for Engineering and Computing	LNG 181	3	
GED 190	Emirati Studies	None	3	
GED 255	Critical Thinking and Problem Solving	LNG 182 or LNG 172	3	
ENT 141	Fundamentals of Innovation and Entrepreneurship 1	None	2	
ENT 142	Fundamentals of Innovation and Entrepreneurship 2	ENT 141	1	
ENT 241	Entrepreneurship 1	ENT 142	2	
ENT 242	Entrepreneurship 2	ENT 241	1	
<b>Humanities Elective Courses (06 Credits):</b> Students are required to select two Courses from the following courses				
GED 103	Head Anatomy Sculpture	None	3	
GED 106	Smart Decisions: Data Literacy and Visualization	None	3	
GED 110	Modern Art Appreciation	None	3	
GED 111	Music Appreciation and Communication	None	3	
GED 191	Islamic Studies	None	3	
GED 196	Communication Skills in Arabic 1	None	3	
GED 205	Psychology in Everyday Life	LNG 182 or LNG 172	3	
GED 324	Ethical Reasoning for Today's World	LNG 182 or LNG 172	3	
GED 330	Introduction to Canadian Studies	None	3	

<b>II. Core Courses</b>				
<b>Course Code</b>	<b>Course Title</b>	<b>Prerequisite</b>	<b>Cr. Hrs.</b>	
<b>Compulsory Courses</b>				<b>30</b>
MTH 112	Calculus I	None	3	
MTH 120	Discrete Mathematics	None	3	
MTH 130	Probability and Statistics	MTH 112	3	
NET 110	Computer Networks Fundamentals	ENG 101 or NET 100	3	
SWS 110	Programming I	None	3	
SCI 210	Modern Physics	None	3	
BUS 310	Project Management	Completion of 60 Credits	3	
SWS 111	Programming II	SWS 110	3	
BCS 306	Database Management Systems	SWS 111 or BCS 201, BCS 202	3	
BCS 401	Ethics for Computing Professionals	None	3	

### III. Major Courses

Course Code	Course Title	Prerequisite	Cr. Hrs.
<b>Compulsory Courses</b>			<b>73</b>
NET 100	Fundamental of Digital Systems	None	3
NET 105	Microprocessors and Microcontrollers	NET 100	3
NET 111	Operating Systems Fundamentals	ENG 210 or NET 105	3
NET 120	LAN Switching and Routing	NET 100	3
NET 121	Network Operating Systems	NET 111	3
NET 214	Network Programming	NET 120, SWS 111	3
NET 220	Network Security and Administration	NET 120	3
NET 221	Communication Technology	NET 120	3
NET 222	Wireless Networks	NET 221 or COM 412	3
EBU 200	e-Business Fundamentals	None	3
MKT 201	Principles of Marketing	LNG 171 or LNG 181	3
SWS 211	System Analysis and Design	SWS 111	3
SWS 215	Web Development	BCS 306	3
NET 310	Network Management	NET 222	3
NET 320	Advanced LAN Switching and Routing	NET 120	3
SWS 315	Mobile Application Development	SWS 215	3
SWS 351	Management Information Systems	GED 101 or SWS 110	3
NET 405	Virtualization and Cloud Computing	NET 320	3
SWS 405	Applied Artificial Intelligence	MTH 130, BCS 206, BCS 205 or SWS 111	3
NET 406	Cloud Architecture	NET 405	3
NET 410	Enterprise Network Design	NET 222	3
NET 420	Advanced Network Troubleshooting	NET 222	3
NET 407	CNET Graduation Project-1	Completed 90 Credit Hours	2
NET 408	CNET Graduation Project-2	NET 407	2
NET 480	Internship in Computer and Network Engineering Technology	90 Credits & CGPA ≥ 2.0	3
<b>Elective Courses (06 Credits):</b> Students are required to select two courses from the following courses			
NET 403	Mobile Security	NET 220	3
SWS 400	Data Warehousing	BCS 306	3
SWS 401	Web Services Integration	NET 405	3
SWS 421	Cryptography and Information Security	NET 220	3

### Eight Semesters Study Plan

Semester	Course Code	Course Title	Prerequisite	Cr. Hrs.					
1	LNG 181	English I for Engineering and Computing	None	3					
	NET 100	Fundamental of Digital Systems	None	3					
	MTH 112	Calculus I	None	3					
	EBU 200	e-Business Fundamentals	None	3					
	SWS 110	Programming I	None	3					
	ENT 141	Fundamentals of Innovation and Entrepreneurship 1	None	2					
<b>Total</b>				<b>17</b>					
2	MTH 120	Discrete Mathematics	None	3					
	LNG 182	English II for Engineering and Computing	LNG 181	3					
	MKT 201	Principles of Marketing	LNG 171 or LNG 181	3					
	NET 110	Computer Networks Fundamentals	ENG 101 or NET 100	3					
	SWS 111	Programming II	SWS 110	3					
	ENT 142	Fundamentals of Innovation and Entrepreneurship 2	ENT 141	1					
<b>Total</b>				<b>16</b>					
3	SCI 210	Modern Physics	None	3					
	MTH 130	Probability and Statistics	MTH 112	3					
	NET 120	LAN Switching and Routing	NET 100	3					
	BCS 306	Database Management Systems	SWS 111 or BCS 201, BCS 202	3					
	NET 105	Microprocessors and Microcontrollers	NET 100	3					
	ENT 241	Entrepreneurship 1	ENT 142	2					
<b>Total</b>				<b>17</b>					
4	NET 111	Operating Systems Fundamentals	ENG 210 or NET 105	3					
	SWS 211	System Analysis and Design	SWS 111	3					
	NET 320	Advanced LAN Switching and Routing	NET 120	3					
	SWS 215	Web Development	BCS 306	3					
	NET 214	Network Programming	NET 120, SWS 111	3					
	ENT 242	Entrepreneurship 2	ENT 241	1					
<b>Total</b>				<b>16</b>					
5	NET 121	Network Operating Systems	NET 111	3					
	XXX XXX	Humanities Elective (1)		3					
	NET 220	Network Security and Administration	NET 120	3					
	SWS 351	Management Information Systems	GED 101 or SWS 110	3					
	NET 221	Communication Technology	NET 120	3					
<b>Total</b>				<b>15</b>					
6	BUS 310	Project Management	Completion of 60 Cr. Hrs.	3					
	NET 222	Wireless Networks	NET 221 or COM 412	3					
	SWS 405	Applied Artificial Intelligence	MTH 130, BCS 206, BCS 205 or SWS 111	3					
	GED 255	Critical Thinking and Problem Solving	LNG 182 or LNG 172	3					
	NET 405	Virtualization and Cloud Computing	NET 320	3					
<b>Total</b>				<b>15</b>					
7	BCS 401	Ethics for Computing Professionals	None	3					
	SWS 315	Mobile Application Development	SWS 215	3					
	XXX XXX	Program Elective (1)		3					
	XXX XXX	Humanities Elective (2)		3					
	NET 407	CNET Graduation Project-1	Completed 90 Cr. Hrs.	2					
	NET 410	Enterprise Network Design	NET 222	3					
<b>Total</b>				<b>17</b>					
8	NET 406	Cloud Architecture	NET 405	3					
	NET 408	CNET Graduation Project-2	NET 407	2					
	NET 310	Network Management	NET 222	3					
	NET 420	Advanced Network Troubleshooting	NET 222	3					
	XXX XXX	Program Elective (2)		3					
	GED 190	Emirati Studies	None	3					
	<b>Total</b>				<b>17</b>				
<b>Internship to be taken summer semester after completion of 90 Cr. Hrs. and CGPA 2.0 or more</b>					3				
<b>Total Credit Hours</b>					<b>133</b>				