

## 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

I. University Requirement Courses				
Course Code		Course Title	Prerequisite	Cr. Hrs.
<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

II. Core Courses				
Course Code		Course Title	Prerequisite	Cr. Hrs.
<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
	Total				17
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
	Total				16
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
	Total				17
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
	Total				16
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
	Total				15
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
	Total				15
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
	Total				17
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
	Total				17
Internship to be taken summer semester after completion of 90 Cr. Hrs. and CGPA 2.0 or more					3
Total Credit Hours					133