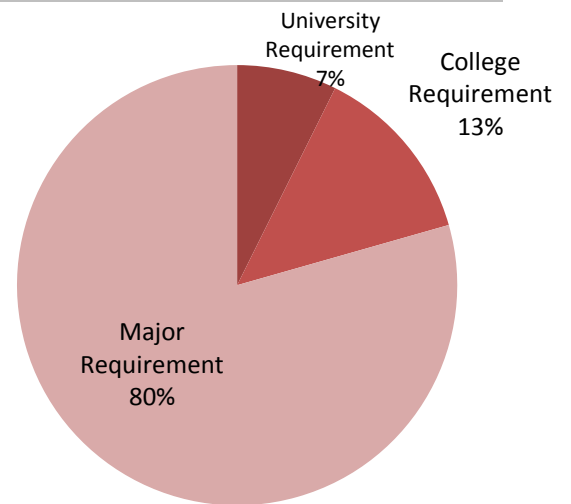


Associate Diploma in Cybersecurity Operations - 2018

Program Components

Course Type	CRD
University Requirement (UR)	5
College Requirement (CR)	9
Major Requirement (MR)	53
Training (Internship) Yes	1
Total Credit (CRD)	68



Teaching Language: English

Detailed Study Plan

Year 1 - Semester 1

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ENGL 154	Language Development I	3	0	3	CR	-----	No
HRLC 107	Human Rights	2	0	2	UR	-----	No
MATHA 111	Applied Mathematics	3	0	3	CR	-----	No
HIST 122	Modern History of Bahrain and Citizenship	3	0	3	UR	-----	No
CEA 121	Computer Hardware and Software	3	3	4	MR	-----	Yes
CEA 116	Programming Essentials	2	3	3	MR	-----	Yes

Year 1 - Semester 2

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
ENGL 155	Language Development II	3	0	3	CR	ENGL 154	No
CEA 125	Introduction to Networks	3	3	4	MR	CEA 121	Yes
CEA 126	Introduction to Server Operating Systems	2	3	3	MR	CEA 121	Yes
CEA 127	IoT Fundamentals	2	3	3	MR	CEA 116	Yes
CYSA 121	Cybersecurity Essentials	2	3	3	MR	CEA 116	Yes

Year 2 - Semester 3

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
CYSA 231	Linux Essentials	2	3	3	MR	CYSA 121	Yes
CYSA 232	Cybersecurity Operations I	3	3	4	MR	CYSA 121	Yes
CEA 235	Routing and Switching Essentials	3	3	4	MR	CEA 125	Yes
CEA 236	Entrepreneurship and Innovation	2	3	3	MR	CEA 126	Yes
CEA 237	IT Career Development	1	3	2	MR	Passing 34 credits	Yes

Year 2 - Semester 4

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
CYSA 241	Linux Administration	3	3	4	MR	CYSA 231	Yes
CYSA 242	Cybersecurity Operations II	3	3	4	MR	CYSA 232	Yes
CEA 234	Wireless Networks	2	3	3	MR	CEA 127	Yes
CEA 242	Server Operating Systems Administration	2	3	3	MR	CEA 236	Yes
CYSA 291	Applied Cybersecurity Design and Development	2	3	3	MR	Passing 50 credits	Yes

Training Requirement

Course Code	Course Title	Course Hours			Course Type	Pre requisite	Major GPA
		LEC	PRAC	CRD			
CEA 298	Professional Internship	0	0	1	MR-Training	Passing 67 credits	Yes

Course Description

Course Code: CYSA 121 **Course Title:** Cybersecurity Essentials

The course develops foundational understanding of cybersecurity and how it relates to information and network security. The course introduces students to characteristics of cybercrime, security principles, technologies, and procedures to defend networks. Through interactive, multimedia content, lab activities, and multi-industry case studies, students build technical and professional skills to pursue careers in cybersecurity.

Course Code: CYSA 231 **Course Title:** Linux Essentials

The course, developed and supported by Networking Academy partner NDG, teaches students the fundamentals of the Linux operating system and command line, and basic open source concepts. Students learn how to install & configure a computer running Linux, perform maintenance tasks with the command line, manage hardware and disks, maintain the file system and edit text files.

Course Code: CYSA 232 **Course Title:** Cybersecurity Operations I

The course is the first of the two to achieve the CCNA Cyber Ops certification and is aligned with the job role of an associate-level Security Operations Center (SOC) Security Analyst. It covers understanding of cybersecurity's basic principles, foundational knowledge, and core skills of cybersecurity. It is also aligned to the Understanding Cisco Cybersecurity Fundamentals Certification Exam (210-250 SECFND).

Course Code: CYSA 241 **Course Title:** Linux Administration

The course covers the fundamentals of the Linux operating system, system architecture, installation, command line and file system. The course covers the Linux system architecture, Linux installation and packages, Linux command line, device basics and the Linux file system. It is fully aligned to the Linux Professional Institute, LPI.org, LPIC-1 (or the CompTIA Linux+ powered by LPI) first certification exam.

Course Code: CYSA 242 **Course Title:** Cybersecurity Operations II

This course is the second of the two in achieving the associate-level CCNA Cyber Ops certification and is aligned with the job role of an associate-level Security Operations Center (SOC) Security Analyst. It covers knowledge and skills needed to successfully handle the tasks, duties, and responsibilities of an associate-level Security Analyst working in a Security Operations Center (SOC). It is also aligned to the Implementing Cisco Cybersecurity Operations Certification Exam (210-255 SECOPS).

Course Code: CYSA 291 **Course Title:** Applied Cybersecurity Design and Development

Capstone course for the curriculum providing application of skills acquired in a "Real World" networking environment applying cybersecurity solutions. Students test their ability to organize and interpret data, develop and apply cybersecurity operations solutions to problems and submit thorough documentation of the task including but not limited to network design and prototype.

Course Code: CEA 121 **Course Title:** Computer Hardware and Software

The course covers the fundamentals of computer hardware and software as well as advanced concepts. Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Additional topics covered include laptops and portable devices, wireless connectivity and basic implementation and troubleshooting skills.

Course Code: CEA 116 **Course Title:** Programming Essentials

The course will introduce students to Python, a general-purpose programming language used to build just about anything. The Programming Essentials in Python, students will learn to design, write, debug, and run programs encoded in the Python language. The course begins with step by step guidance until students become adept at solving more complex problems.

Course Code: CEA 125 **Course Title:** Introduction to Networks

This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing, and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. By the end of the course, students

will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

Course Code: CEA 126 **Course Title:** Introduction to Server Operating Systems

The focus of this course is on the use of network operating systems particularly Windows Server Operating Systems in a business environment. Topics include business analysis, matching systems needs within appropriate network configuration, data and systems security measures for user groups sharing files and resources, print services, network interconnectivity and related network management issues.

Course Code: CEA 127 **Course Title:** IoT Fundamentals

In this course, students will explore the three basic insights of the Internet of Things: Why do we want to connect everything? What do we want to connect? And how do we connect everything? A typical IoT solution includes sensors, local analytic abilities, network connections, and the ability to process and analyze the gathered data.

Course Code: CEA 234 **Course Title:** Wireless Networks

The course introduces the fundamental concepts of wireless network administration including the various wireless standards, equipment and the relevant organizations. You will learn the terminologies and behavior associated with wireless technologies such as: radio frequencies, basic measurements techniques and antenna concepts used in the planning and design of wireless networks. You will apply the skills learned and the basic parameters to configure a wireless network, planning and building of wireless networks and techniques for securing and troubleshooting common wireless implementation issues as well as administration.

Course Code: CEA 235 **Course Title:** Routing and Switching Essentials

This course describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with virtual LANs and inter-VLAN routing in both IPv4 and IPv6 networks.

Course Code: CEA 236 **Course Title:** Entrepreneurship and Innovation

Students acquire the knowledge and skills needed to manage the development of innovations, to recognize and evaluate potential opportunities to monetize these innovations, to plan specific and detailed methods to exploit these opportunities, and to acquire the resources necessary to implement these plans. Topic includes design thinking, entrepreneurship, and growth and leadership. Entrepreneurship supplements the ICT skills gained in CCNA R&S curriculum by teaching business and financial skills, behaviors, and attitudes, to help students develop an entrepreneurial mindset.

Course Code: CEA 237 **Course Title:** IT Career Development

This course consists of a series of readings, exercises, and presentations designed to prepare students to succeed in their IT careers. Topics include resume writing, personal networking, job search resources, interviewing, compensation negotiation, career development, and professional certifications.

Course Code: CEA 242 **Course Title:** Server Operating Systems Administration

The course will provide you with the necessary knowledge and skills to enable you to perform advanced server administration tasks in a network operating system environment, specifically in a Microsoft Windows network. The course covers administrative tasks to manage a large number of system users and computers. You will learn to implement and administer the Windows active directory services infrastructure in an enterprise environment. It describes key decision points for naming, delegation of authority, and domain designs.

Course Code: CEA 298 **Course Title:** Professional Internships

The course is the application of the skills acquired in a real-world work-based environment. The Internship will provide students with real-life experience applying skills learned in a classroom. Employers work closely with the students and teachers to ensure an environment that will enhance student's education, provides experience and introduces the student to the ICT Business environment.

College Requirement Courses Descriptions

Course Code: ENGL 154 **Course Title:** Language Development I

The first of a series of three integrated language courses designed specifically for IT/CS and CE majors. Special attention is given to IT related vocabulary, reading texts and writing.

Course Code: ENGL 155 **Course Title:** Language Development II

ENGL 155 is the second of three integrated language courses designed for IT students. The level is upper-intermediate.

Course Code: MATHA 111 **Course Title:** Applied Mathematics

The number system, Basic Algebra, Expansion, factorization, Transposition of formula, Solving Equations, Function, Definitions, Sequence and Series Relations, Differentiation, Standard Derivative, Integration and Applications, Matrices.

University Requirements Courses Descriptions

Course Code: HIST 122 **Course Title:** Modern History of Bahrain and Citizenship

Spatial identity of Bahrain: Brief history of Bahrain until the 18th century; the historical roots of the formation of the national identity of Bahrain since the 18th century; the modern state and evolution of constitutional life in Bahrain; the Arabic and Islamic dimensions of the identity of Bahrain; the core values of Bahrain's society and citizenship rights (legal, political, civil and economic); duties; responsibilities and community participation; economic change and development in Bahrain; Bahrain's Gulf, Arab and international relations.

Course Code: HRLC 107 **Course Title:** Human Rights

This course deals with the principles of human rights in terms of the definition of human rights, scope, sources with a focus on the International Bill of Human Rights; The Charter of the United Nations; Universal Declaration of Human Rights; The International Covenant on Economics, Social and Culture rights; Convention against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment; Mechanics and the Constitutional Protection of Rights and Public Freedoms in Kingdom of Bahrain.