

# AlShaab University

## جامعة الشعب



*First Cycle – Bachelor's degree (B.Sc.) – Cyber Security Engineering*

بكالوريوس هندسة - الأمن السيبراني



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### 1. **Mission & Vision Statement**

#### *Vision Statement*

The Cyber Security Engineering Department at Al-Shaab University strive to be a pioneer in the field of cybersecurity engineering discipline that keep pace with the tremendous development in computer engineering and information technology systems in the world. This is achievement through supporting and developing of providing curriculum and programs in the field of cybersecurity that allow students to acquire the necessary knowledge and skills that help them achieve a positive impact in society, in addition enable them to meet the needs of the labor market in providing electronic security protection for information and computer networks from an electronic attack and contribute to a safer digital world.

#### *Mission Statement*

Cyber security engineering discipline in our educational institution is to enable students to acquire the knowledge, skills, and ethical mindset necessary for the confidentiality, integrity, and availability of information systems and networks from cyber threats. Our program aims to prepare cybersecurity engineers who are adept at analyzing, designing, implementing, and managing secure systems. Through education, practical training and learning about the latest advanced technologies used in this field. We strive to develop graduates who can meet evolving challenges in the field of information technology systems and contribute to continuing education and professional growth in variety of threats for cybersecurity.

## 2. Program Specification

Programme code:	BSc-CYS	ECTS	240
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

Cybersecurity Engineering Specialization is an undergraduate program offered at AlShaab University- College of Engineering and Information Technology. It is designed to equip students with the knowledge and skills required to secure information computer systems and networks from cyber threats. The program combines theoretical foundations with hands-on practical training to prepare students for careers in the rapidly evolving field of cybersecurity engineering. Program Duration of the Cyber Security Engineering specialization is typically completed within four academic years (eight semesters) of full-time study. The core curriculum of the Cyber Security Engineering Specialization covers a wide range of topics related to information security, typically included: Principles of Cybersecurity, Network Security, Cryptography and Cryptanalysis, Operating Systems Security, Database Systems Security, Cloud Computing Security, Wireless and Mobile Security, Ethical Hacking and Penetration Testing, and Intrusion Detection and Incident Response, etc.

The program integrates practical training to ensure students gain hands-on experience in implementing and managing secure information systems. This may include:

Laboratory Exercises: Access to well-equipped labs for practicing security technologies, tools, and methodologies.

Internships: Opportunities for students to work with industry professionals and gain practical experience in cybersecurity engineering firms, government agencies, or other relevant organizations.

## 3. Program Goals

1. To provide students with a comprehensive understanding of cyber security principles, concepts, and practices.
2. To equip students with the necessary technical skills to analyze, design, implement, and manage secure systems and networks.
3. To integrate aspects of computer science, information technology, mathematics, and engineering to provide students with a holistic understanding of cyber security.
4. Ability students risk assessment methodologies, risk analysis techniques, and risk mitigation strategies.
5. To prepare students to handle cyber security incidents efficiently.
6. To provide students with knowledge and practical experience in ethical hacking techniques to identify vulnerabilities and improve system security.

7. To prepare students for relevant certifications in cybersecurity discipline such as, Certified Information Systems Security Professional (CISSP), certified Ethical Hacker (CEH), and Certified Information Security Manager (CISM).

## **4. Student Learning Outcomes**

Cyber security engineering specialization is a program of study that focuses on the design, implementation, and management of information cybersecurity systems. Students in this program will learn about the fundamentals of computer programming, cyber security, information and networking technology, and. They will also learn how to identify and mitigate cyber security risks, develop, and implement security solutions, and communicate effectively about cyber security. The biology curriculum and experiences are designed to prepare students, in part, for entry into professional health programs, graduate studies, technical careers and education.

### **Outcome 1**

#### *Identification of Complex Relationships*

Graduates will be able to identify and analyze complex relationships in cyber security. This includes understanding how different systems and components interact with each other, how vulnerabilities can be exploited, and how to mitigate risks. Students will also be able to develop and implement security solutions that address these complex relationships.

### **Outcome 2**

#### *Oral and Written Communication*

Graduates will be able to communicate effectively with technical and non-technical audiences. This includes being able to write clear and concise reports, present information in a clear and engaging way, and answer questions from stakeholders. Students will also be able to work effectively in teams and collaborate with others to solve problems.

### **Outcome 3**

#### *Laboratory and Field Studies*

Graduates will be able to apply their knowledge of cyber security to real-world scenarios. This includes conducting experiments in a laboratory setting, performing security assessments on real systems, and responding to security incidents. Students will also be able to develop and implement security solutions that address real-world threats.

### **Outcome 4**

#### *Scientific Knowledge*

Graduates will have a strong foundation in the scientific principles of cyber security. This includes understanding the fundamentals of computer science, networking, and information security. Students will also be able to apply these principles to solve real-world problems.

## Outcome 5

### *Data Analyses*

Graduates will be able to analyze data to identify and mitigate cyber security risks. This includes understanding how to collect, store, and analyze data, as well as how to use data to identify vulnerabilities and develop security solutions.

## Outcome 6

### *Critical Thinking*

Graduates will be able to think critically about cyber security issues. This includes being able to identify and evaluate risks, develop, and implement security solutions, and communicate effectively about cyber security.

## 5. Academic Staff

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## 6. Credits, Grading and GPA

### Credits

ALShaab University is following the Bologna Process with the European Credit Transfer System (ECTS) credit system. The total degree program number of ECTS is 240, 30 ECTS per semester. 1 ECTS is equivalent to 25 hrs student workload, including structured and unstructured workload.

### Grading

Before the evaluation, the results are divided into two subgroups: pass and fail. Therefore, the results are independent of the students who failed a course. The grading system is defined as follows:

GRADING SCHEME				
مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
<b>Fail Group (0 - 49)</b>	FX – Fail	راسب - قيد المعالجة	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
Number Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.				

### **Calculation of the Cumulative Grade Point Average (CGPA)**

1. The CGPA is calculated by the summation of each module score multiplied by its ECTS, all are divided by the program total ECTS.

CGPA of a 4-year B.Sc. degree:

$$\text{CGPA} = [ (1^{\text{st}} \text{ module score} \times \text{ECTS}) + (2^{\text{nd}} \text{ module score} \times \text{ECTS}) + \dots ] / 240$$

## **7. Curriculum/Modules**

**Semester 1 | 30 ECTS | 1 ECTS = 25 hrs**

Code	Module	SSWL	USSWL	ECTS	Type	Pre-request
CYSE101	Structured Programming	79	96	7.00	C	-
CYSE100	Electrical Circuits	79	96	7.00	C	-
CYSE102	Cybersecurity Fundamentals	63	62	5.00	C	-
CREQ100	Mathematics I	63	62	5.00	B	-
CYSE103	Computer Skills	64	36	4.00	C	-
UREQ100	English Language I	33	17	2.00	S	-

## **8. Contact**

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