هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

# Course Specification

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

# Course Specification

| | |
|---|---|
| Course Title: | **Programming Fundamentals** |
| Course Code: | **CS118** |
| Program: | **Computer Science ( Cybersecurity- Programming- Networks)** |
| Department: | **Applied Sciences** |
| College: | **Applied College** |
| Institution: | **Imam Muhammad Bin Saud Islamic University** |
| Version: | *Course Specification Version Number* |
| Last Revision Date: | *Pick Revision Date.* |

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# A. General information about the course:

| Course Identification | | | | | |
|---|---|---|---|---|---|
| **1. Credit hours:** | 3 (3 theory) | | | | |
| **2. Course type** | | | | | |
| a. | University ☐ | College ☐ | Department☐ | Track☐ | Others☒ |
| b. | Required ☒ | Elective☐ | | | |
| **3. Level/year at which this course is offered:** | Level 2 | | | | |
| **4. Course general Description:**<br>This course includes a set of topics that represent an introduction to the study of programming science, including talking about the nature of programming of all kinds and its role in the field of informatics and methods of thinking in solving problems by studying algorithms and the basics of sequential programming that constitute the core of the component units of any program. Throughout the semester, the course includes an integrated case study in which all previous tools are used to build an integrated project. | | | | | |
| **5. Pre-requirements for this course (if any):** None | | | | | |
| **6. Co- requirements for this course (if any):** None | | | | | |
| **7. Course Main Objective(s):**<br>The course aims to give the student the basics of programming science to be able to propose solutions to problems so that they are valid for formulation in the form of a computer program and the ability to write programs in the Java language to solve problems and solve some simple problems. | | | | | |

## 1. Teaching mode (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|---|---|---|---|
| 1. | Traditional classroom | 36 | 100 % |
| 2. | E-learning | | |
| 3. | Hybrid<br>• Traditional classroom<br>• E-learning | | |
| 4. | Distance learning | | |

## 2. Contact Hours (based on the academic semester)

| No | Activity | Contact Hours |
|---|---|---|
| 1. | Lectures | 36 |
| 2. | Laboratory/Studio | |
| 3. | Field | |
| 4. | Tutorial | |
| 5. | Others (specify) | |
| | Total | 36 |

# B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| 1.0 | Knowledge and understanding | | | |
| 1.1 | Knowledge of programming languages concepts. | ع١، ع٢، ع٥ | - Class lectures<br>- Class Discussion<br>- Questions/Answers<br>- Sessions in class<br>- Homework<br>- Assignments<br>- Quizzes<br>- Case studies and Analysis. | - Quizzes<br>- Homework and Assignments.<br>- Written exams (Midterm and final).<br>- Writing reports |
| 1.2 | Classification of programming languages according to their uses and levels. | ع١، ع٢، ع٥ | | |
| 1.3 | Comparison between types of programming languages. | ع١، ع٢، ع٥ | | |
| 1.4 | Demonstrate the software development life cycle. | ع١ ، ع٥ | | |
| 1.5 | Familiarity with the concept of algorithm, its types, methods of representation, and the types of problems that are solved by it. | ع١ ، ع٥ | | |
| 1.6 | Knowledge of the Java development environment. | ع١ ، ع٥ | | |
| 1.7 | Knowledge of the components of Java language and the rules for writing them. | ع١، ع٢، ع٥ | | |

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| 2.0 | Skills | | | |
| 2.1 | Tracking the stages of the software development life cycle for its production. | م١،م٢،م٣،م٤،م٥،م٧ | - Class lectures<br>- Class Discussion<br>- Questions/Answers<br>- Sessions in class<br>- Homework<br>- Assignments<br>- Quizzes<br>- Case studies and Analysis. | - Quizzes<br>- Homework and Assignments.<br>- Written exams (Midterm and final).<br>- Writing reports |
| 2.2 | Solving problems using algorithms. | م١،م٢،م٦،م٧ | | |
| 2.3 | Mastering the basic components and stages of programming. | م١،م٢،م٤،م٥،م٧ | | |
| 2.4 | Converting sequential algorithms into a Java program. | م١،م٢،م٣،م٤،م٥،م٦،م٧ | | |
| 2.5 | Write a simple sequential program in Java. | م١،م٢،م٣،م٤،م٥،م٧ | | |
| 2.6 | Using information and communication technology in communication, exchange of ideas, scientific research, and performance of tasks. | م١،م٢،م٧ | | |
| 2.7 | Practicing critical thinking and solving problems facing the learner in the course in creative ways. | م١،م٢،م٧ | | |
| 2.8 | Develop and implement scripts and programs using compound conditions and loops in order to automate the tasks of a software system to solve given problems. | | | |
| 2.9 | Develop and implement secure and reliable programs taking into account the characteristics of operating systems and environments. | | | |

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| 3.0 | Values, autonomy, and responsibility | | | |
| 3.1 | Collaboration, teamwork, and professional ethics. | ق١ | - Class lectures<br>- Class Discussion<br>- Questions/Answers<br>- Sessions in class<br>- Homework<br>- Assignments<br>- Quizzes<br>- Case studies and Analysis. | - Quizzes<br>- Homework and Assignments.<br>- Written exams (Midterm and final).<br>- Writing reports |
| 3.2 | Take responsibility for continuous learning and continuing personal development. | ق٢ | | |
| 3.3 | Effective and efficient time management when applying the acquired knowledge and skills. | ق٣ | | |

## C. Course Content

| No | List of Topics | Contact Hours |
|---|---|---|
| 1 | • **Programming Concepts:**<br>○ Programming Terms<br>○ Programming Languages<br>○ Levels Of Programming Languages<br>▪ Low Level<br>▪ High Level<br>○ Fundamentals of Software Development<br>○ Software Design Principles and Practices | 10 |
| 2 | • **Basic Data Structures and Algorithms**<br>○ Definition of Algorithms<br>• Example Of Algorithms<br>○ Representing Algorithms<br>• Pseudo-code<br>• Flow chart<br>○ Basic Logical Operations<br>○ Statements and Expressions<br>○ Precedence of Operators<br>○ Sequential and Parallel Execution (Control structure)<br>• Sequential Logic Structure<br>• Selection/ Decision Logic structure<br>• Repetition/Loop Logic structure (Simple Loop, Multiple/Nested Loop)<br>○ Counter<br>○ Grosses<br>○ Automatic Counter Loop | 12 |
| 3 | • **Introduction To Java Language**<br>○ Objective Of Developing Java<br>○ Java Language Editions<br>○ Java Language Features<br>○ Java Programming Tools | 10 |

| | | |
|---|---|---|
| | ○ What We Need To Start With Java?<br>○ Scripting on Windows and Linux<br>○ Compilers.<br>○ Debugging Techniques<br>○ Bugs/ Errors<br>○ The basic structure of Java code.<br>○ Components of the Java language:<br>▪ Language Rules.<br>▪ Reserved words.<br>▪ Methods and Classes<br>▪ Data Types<br>○ Primitive<br>○ Non-Primitive<br>▪ Variables and constants.<br>▪ Statements<br>○ Declaration Statements<br>○ Comment Statements<br>○ Output Statements<br>▪ Escape Characters | |
| 4 | • **From Algorithms To Java Program Code**<br>▪ Examples | 4 |
| Total | | 36 |

## D. Students Assessment Activities

| No | Assessment Activities * | Assessment timing (in week no) | Percentage of Total Assessment Score |
|---|---|---|---|
| 1. | Quizzes (2 Quizzes) | All Semester | 10% |
| 2. | Midterm | Week 7 | 20% |
| 3. | Participation | All Semester | 10% |
| 4 | Assignments and project | All Semester | 30% |
| 5 | Final | Week 12-13 | 30% |

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

# E. Learning Resources and Facilities

## 1. References and Learning Resources

| | |
|---|---|
| Essential References | Java™ Programming: From Problem Analysis to Program Design (Introduction to Programming) by D. S. Malik, 5th Edition. |
| Supportive References | - Deitel P.J., Deitel H.M. - Java. How to Program, 10th Edition<br>- Problem Solving and Programming Concepts by Maureen Sprankle and Jim Hubbard, 9th Edition. |
| Electronic Materials | Online resources will be provided during class lectures. |
| Other Learning Materials | N/A |

## 2. Required Facilities and equipment

| Items | Resources |
|---|---|
| facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.) | Classroom, Computer lab |
| Technology equipment (projector, smart board, software) | Data Show, Smart Board, NetBeans software, Edraw Max software |
| Other equipment (depending on the nature of the specialty) | |

# F. Assessment of Course Quality

| Assessment Areas/Issues | Assessor | Assessment Methods |
|---|---|---|
| Effectiveness of teaching | Student | Indirect using course evaluation survey |
| Effectiveness of students assessment | | |
| Quality of learning resources | Student and Faculty | Indirect using course evaluation and faculty survey |
| The extent to which CLOs have been achieved | | |
| Other | | |

**Assessor** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

**Assessment Methods** (Direct, Indirect)

# G. Specification Approval Data

| | |
|---|---|
| COUNCIL /COMMITTEE | |
| REFERENCE NO. | |
| DATE | |

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد
NCAA
T4
2020

# Course Specifications

| | |
|---|---|
| **Course Title:** | Information Security Foundations |
| **Course Code:** | CYB 0101 |
| **Program:** | Computer Science (Cybersecurity) |
| **Department:** | Applied Sciences |
| **College:** | Applied College |
| **Institution:** | Imam Muhammad Bin Saud Islamic University |

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**G. Course Quality Evaluation** ..... **7**

**H. Specification Approval Data** ..... **7**

## A. Course Identification

| | |
|---|---|
| **1. Credit hours:** | **3(2 theory , 2 lab)** |
| **2. Course type** | |
| **a.** | University ☐ College ☐ Department ☑ Others ☐ |
| **b.** | Required ☑ Elective ☐ |
| **3. Level/year at which this course is offered:** | First Semester |
| **4. Pre-requisites for this course** (if any)**:** | None |
| **5. Co-requisites for this course** (if any)**:** | None |

**6. Mode of Instruction** (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|---|---|---|---|
| 1 | **Traditional classroom** | 3hours\week | 100% |
| 2 | **Blended** | | |
| 3 | **E-learning** | | |
| 4 | **Distance learning** | | |
| 5 | **Other** | | |

**7. Contact Hours** (based on academic semester)

| No | Activity | Contact Hours |
|---|---|---|
| 1 | **Lecture** | 20 |
| 2 | **Laboratory/Studio** | 20 |
| 3 | **Tutorial** | |
| 4 | **Others** (specify) | |
| | **Total** | 40 |

## B. Course Objectives and Learning Outcomes

**1. Course Description**

This course covers the basics of information security, where the student will learn information security models, including achieving physical security of information, security of procedures and operations, control of access to information and methods of defense against various risks, including piracy and unauthorized access to electronic systems and others. This course also covers tools for protecting the confidentiality of information such as encryption, securing networks and the Internet, reducing the risks of virus attacks, and firewalls to reduce attacks. It also covers methods of protection to ensure the availability and integrity of information. Also this course will mention the risk management and the legal and ethical issues.

**2. Course Main Objective**

The course aims to train the student on the basics of information security and how to identify risks and methods of defense against these risks. This course aims to enhance the skill of information protection at its various levels and mechanisms of application.

### 3. Course Learning Outcomes

| CLOs | | Aligned PLOs |
|---|---|---|
| 1 | **Knowledge and Understanding** | |
| 1.1 | To understand different types of attacks and threatened systems, the access control, accuracy, and intrusiveness. | 2ع,1ع |
| 1.2 | Demonstrate information security and its needs, and to understand information security implementations. | 2ع |
| **2** | **Skills :** | |
| 2.1 | To examine cryptographic system, and to deal with Information Security Management. | 2م,1م |
| 2.2 | To be able to analyze Legal, ethical, and professional to defend against vulnerabilities. | 7م |
| 2.3 | To examine how key security technology deal with systems. | 1م |
| **3** | **Values:** | |
| 3.1 | To implement information security system. | 7م,3ق,2ق,1ق |

## C. Course Content

| No | List of Topics | Contact Hours |
|---|---|---|
| 1 | Module1:Introduction to information Security | 4 |
| 2 | Module2:The need for information security | 3 |
| 3 | Module3:Information Security Management | 4 |
| 4 | Module5:Planning for Security | 3 |
| 5 | Module6:Legal, ethical, and professional issues in information security | 4 |
| 6 | Module8:Security technology; Access control, firewall, and VPNs | 7 |
| 7 | Module9:Security technology; Intrusion detection and prevention systems and other security tools | 5 |
| 8 | Module10:Cryprography | 4 |
| 9 | Module11:Implemeting Information Security | 3 |
| 10 | Module12:Information Security Maintenance | 3 |
| **Total** | | 40 |

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|---|---|---|---|
| **1.0** | **Knowledge and Understanding** | | |
| 1.1 | To understand different types of attacks and threatened systems, the access control, accuracy, and intrusiveness. | Class lectures<br>Class Discussion<br>Questions/Answers sessions in class<br>Home work assignments<br>Quizzes<br>Case studies and Analysis. | Quizzes<br>Homework and Assignments.<br>Written exams (Midterm and final).<br>Writing reports. |

| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|---|---|---|---|
| 1.2 | Demonstrate information security and its needs, and to understand information security implementations. | Class lectures<br>Class Discussion<br>Questions/Answers sessions in class<br>Home work assignments<br>Quizzes<br>Case studies and Analysis. | Quizzes<br>Homework and Assignments.<br>Written exams (Midterm and final).<br>Writing reports.<br>Study cases. |
| **2.0** | **Skills** | | |
| 2.1 | To examine cryptographic system, and to deal with Information Security Management. | Class lectures<br>Class Discussion<br>Questions/Answers sessions in class<br>Home work assignments<br>Quizzes<br>Case studies and Analysis. | Quizzes<br>Homework and Assignments.<br>Written exams (Midterm and final).<br>Writing reports.<br>Study cases. |
| 2.2 | To be able to analyze Legal, ethical, and professional to defend against vulnerabilities. | Class lectures<br>Class Discussion<br>Questions/Answers sessions in class<br>Home work assignments<br>Quizzes<br>Case studies and Analysis. | Quizzes<br>Homework and Assignments.<br>Written exams (Midterm and final).<br>Writing reports.<br>Study cases. |
| 2.3 | To examine how key security technology deal with systems. | Class lectures<br>Class Discussion<br>Questions/Answers sessions in class<br>Home work assignments<br>Quizzes<br>Case studies and Analysis. | Quizzes<br>Homework and Assignments.<br>Written exams (Midterm and final).<br>Writing reports.<br>Study cases. |
| **3.0** | **Values** | | |
| 3.1 | To implement information security system. | Class lectures<br>Class Discussion<br>Questions/Answers sessions in class<br>Home work assignments<br>Quizzes<br>Case studies and Analysis. | Quizzes<br>Homework and Assignments.<br>Written exams (Midterm and final).<br>Writing reports.<br>Study cases. |

### 2. Assessment Tasks for Students

| # | Assessment task* | Week Due | Percentage of Total Assessment Score |
|---|---|---|---|
| 1 | Quizzes | Week3,5 | 10% |
| 2 | Midterm1 | Week 6 | 15% |
| 3 | Midterm2 | Week9 | 15% |
| 4 | Pass CISCO Networking Academy course | Week10 | 10% |
| 5 | Lab Evaluations | All Semester | 20% |
| 6 | Final | Week13 | 30% |

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

**Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :**

6 office hours per week.
3 hours of weekly meetings
Contact through the LMS
Communication/interact via e-mails with students

## F. Learning Resources and Facilities

### 1.Learning Resources

| | |
|---|---|
| **Required Textbooks** | Principles of Information Security, Michael E. Whitman, Herbert J. Mattord · 2021 |
| **Essential References Materials** | Information Security principles and practice, marks stamp, 2d Edition, 2011.<br>Information Security and IT Risk Management , Manish Agrawal, Wiley.<br>CompTIA Security+ All-in-One Exam Guide, Authors: WM. Arthur Conklin, Gregory White, Chuck Cothren, Roger L.Davis, Dwayne Williams. 6th Edition. |
| **Electronic Materials** | Online resources will be provided during class lectures. |
| **Other Learning Materials** | N/A |

### 2. Facilities Required

| Item | Resources |
|---|---|
| **Accommodation**<br>(Classrooms, laboratories, demonstration rooms/labs, etc.) | Lecture room with Smart board Lab with 25 Pcs |
| **Technology Resources**<br>(AV, data show, Smart Board, software, etc.) | PC and WiFi Internet access within the class room |

| Item | Resources |
|---|---|
| **Other Resources**<br>(Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | N\A |

## G. Course Quality Evaluation

| Evaluation Areas/Issues | Evaluators | Evaluation Methods |
|---|---|---|
| Effectiveness of teaching and assessment | Student | Indirect using course evaluation survey |
| | | |
| Quality of learning resources | Student and Faculty | Indirect using course evaluation and faculty survey |

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

| | |
|---|---|
| **Council / Committee** | |
| **Reference No.** | |
| **Date** | |

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

اعتماد
NCAAA
T4
2020

# Course Specifications

| | |
|---|---|
| **Course Title:** | Network Fundamentals |
| **Course Code:** | Net 103 |
| **Program:** | Computer Science (Networking) |
| **Department:** | Applied Sciences |
| **College:** | Applied College |
| **Institution:** | Al Imam Muhammad bin Saud Islamic University |

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**A. Course Identification** ..... **3**

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3. Course Learning Outcomes ..... 4

**C. Course Content** ..... **4**

**D. Teaching and Assessment** ..... **7**

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods ..... 7

2. Assessment Tasks for Students ..... 8

**E. Student Academic Counseling and Support** ..... **9**

**F. Learning Resources and Facilities** ..... **9**

1.Learning Resources ..... 9

2. Facilities Required ..... 9

**G. Course Quality Evaluation** ..... **9**

**H. Specification Approval Data** ..... **10**

## A. Course Identification

| | |
|---|---|
| **1. Credit hours:** 3 **(2 hours Lecture, 2 hours Lab)** | |
| **2. Course type** | |
| **a.** University ☐ College ☐ Department ☑ Others ☐ | |
| **b.** Required ☑ Elective ☐ | |
| **3. Level/year at which this course is offered:** First year/ Second Semester | |
| **4. Pre-requisites for this course** (if any)**:** None | |
| **5. Co-requisites for this course** (if any)**:** None | |

**6. Mode of Instruction** (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|---|---|---|---|
| 1 | **Traditional classroom** | | |
| 2 | **Blended** | 44 | 100% |
| 3 | **E-learning** | | |
| 4 | **Distance learning** | | |
| 5 | **Other** | | |

**7. Contact Hours** (based on academic semester)

| No | Activity | Contact Hours |
|---|---|---|
| 1 | **Lecture** | 22 |
| 2 | **Laboratory/Studio** | 22 |
| 3 | **Tutorial** | |
| 4 | **Others** (specify) | |
| | **Total** | 44 |

## B. Course Objectives and Learning Outcomes

**1. Course Description**

This course introduces the basic concepts of computer networks, protocols, topologies, hardware and their main components to make students equipped with the theoretical basis and practical experiences necessary to design, implement, manage, and upgrade networks. This course will prepare students for the following certificates:

- CompTIA Network +.
- CompTIA A+.

**2. Course Main Objective**

This course aims to provide students with the necessary knowledge and skills related to the computer networks and the techniques used into it.

### 3. Course Learning Outcomes

| CLOs | | Aligned PLOs |
|---|---|---|
| 1 | **Knowledge and Understanding** | |
| 1.1 | Understanding the concept of computer networks, their classifications, layers, and its software and hardware components. | ع1، ع5 |
| 1.2 | Analysis of fundamentals and components of network security. | ع1، ع5 |
| 1.3 | Knowledge of network addressing and segmentation techniques. | ع1، ع5 |
| 1.4 | Knowledge of other networking techniques. | ع1، ع5 |
| **2** | **Skills :** | |
| 2.1 | Determining the methods of installing and operating computer network devices. | م1، م2، م7 |
| 2.2 | Technical skills in managing, establishing, operating, maintaining, and solving network infrastructure problems. | م1، م2، م7 |
| 2.3 | The use of information and communication technology in communication, exchanging ideas, scientific research, and tasks accomplishments. | م1، م2، م7 |
| 2.4 | Practicing critical thinking and solving problems that the learner faces in the course in creative ways. | م1، م2، م7 |
| **3** | **Values:** | |
| 3.1 | Cooperation, teamwork, and professional ethics. | ق 1 |
| 3.2 | Take responsibility for continuous learning and continuing personal development. | ق 2 |
| 3.3 | Efficient and effective time management when applying acquired knowledge and skills. | ق 3 |

## C. Course Content

| No | List of Topics | Contact Hours |
|---|---|---|
| 1 | **Networking Basics:**<br>• Defining a network.<br>• Benefits of a network.<br>• What is the internet?<br>• Internet services.<br>• History of computer networking and the internet.<br>• Network components:<br>  ○ Hardware<br>  ▪ Computers.<br>  ▪ Connectivity devices:<br>  • Firewall.<br>  • Hub.<br>  • Switch.<br>  • Repeater.<br>  • Bridge.<br>  • Router.<br>  • Gateway.<br>  • Modems.<br>  • Wireless Access Point.<br>  ▪ Network Interface Cards (NIC). | 8 Hours |

| | | |
|---|---|---|
| | ▪ Cables:<br>• Twisted -Pair cabling.<br>• Coaxial cables.<br>• Fiber-Optic cables.<br>○ Software<br>▪ Network OS<br>• Protocols<br>○ Internet Protocol.<br>○ Transmission Control Protocol.<br>○ User Datagram Protocol.<br>○ File Transfer Protocol.<br>○ Simple Mail Transfer Protocol.<br>○ Hypertext Transfer Protocol.<br>○ Hypertext Transfer Protocol Secure.<br>○ Post Office Protocol V 3/ Internet Access Protocol V4.<br>○ Secure Shell.<br>○ Telnet.<br>○ Internet Control Message Protocol.<br>○ Dynamic Host Configuration Protocol. | |
| 2 | **Network Classification:**<br>• Types of network topologies:<br>○ Bus topology.<br>▪ Definition.<br>▪ Advantages and disadvantages.<br>○ Ring topology.<br>▪ Definition.<br>▪ Advantages and disadvantages.<br>○ Star topology.<br>▪ Definition.<br>▪ Advantages and disadvantages.<br>○ Mesh topology.<br>▪ Definition.<br>▪ Advantages and disadvantages.<br>• Types of network architectures:<br>○ Client/Server model.<br>○ Peer-to-Peer Model.<br>• Types of networks based on the communication media:<br>○ Wired.<br>○ Wireless.<br>• Types of networks based on the geographical areas:<br>○ LAN.<br>○ WAN.<br>○ MAN.<br>○ CAN.<br>○ PAN.<br>○ SAN. | 4 Hours |
| 3 | **Networking Models:**<br>• What is the OSI networking model?<br>• Following a packet through the layers.<br>• The OSI Seven - Model Layers: | 8 Hours |

| | | |
|---|---|---|
| | ○ The Physical Layer.<br>○ The Data Link Layer.<br>○ The Network Layer.<br>○ The Transport Layer.<br>○ The Session Layer.<br>○ The Presentation Layer.<br>○ The application Layer.<br>• The TCP/IP Model:<br>○ The Application Layer.<br>○ The Transport Layer.<br>○ The Internet Layer.<br>○ The Network Interface Layer.<br>• Comparing the OSI model to the four-layer TCP/IP Model. | |
| 4 | **Network Addressing, Routing, and Switching:**<br>• The Internet Protocol (IP) address:<br>○ IPv4 address.<br>○ Classifying IP addresses:<br>▪ Class A addresses.<br>▪ Class B addresses.<br>▪ Class C addresses.<br>○ IPv4 Public and Private Networks.<br>○ IPv4 addresses types:<br>▪ Unicast Address.<br>▪ Broadcast Address.<br>▪ Multicast.<br>• Subnetting Networking:<br>○ Subnets.<br>○ Purpose of Subnetting.<br>○ Subnet Masks.<br>• IPv6 Address:<br>○ Understanding of IPv6 address.<br>○ IPv6 addresses types:<br>▪ Unicast IPv6 addresses.<br>▪ Global Unicast addresses.<br>▪ Link-Local addresses.<br>▪ Site-Local addresses.<br>▪ Multicast addresses.<br>▪ Anycast addresses.<br>• Assigning IP Addresses:<br>○ Static addressing.<br>○ Dynamic addressing.<br>• Media Access Control (MAC) address.<br>• Domain Name Service (DNS). | 8 Hours |
| 5 | **Data Link Layer and Network Traffic:**<br>• Network access methods definition.<br>• Purpose of network access methods.<br>• What is carrier sensing?<br>• What is a collision detection?<br>• Types of network access methods:<br>○ CSMA/CD. | 4 Hours |

| | | |
|---|---|---|
| | ○ CSMA/AD.<br>○ Token passing. | |
| 6 | **Cloud Computing:**<br>• What is cloud computing?<br>• Types of cloud services:<br>○ SaaS<br>○ PaaS<br>○ IaaS<br>• Cloud delivery models:<br>○ Private<br>○ Public<br>○ Hybrid | 4 Hours |
| 7 | **Network Security and Network Troubleshooting:**<br>• What is network security?<br>• Network security model.<br>• How to secure your network?<br>○ Physical security and device hardening.<br>▪ Lock and Key.<br>▪ Swipe card and pin access.<br>▪ Biometrics.<br>○ Two factor and multifactor authentication.<br>○ Secure versus unsecured protocols.<br>○ Additional device hardening.<br>○ Access control.<br>○ Securing wireless networks.<br>• Malicious software.<br>• Common network attacks.<br>• Vulnerability prevention.<br>• Troubleshooting steps and procedures. | 8 Hours |
| **Total** | | 44 |

## D. Teaching and Assessment

### 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|---|---|---|---|
| **1.0** | **Knowledge and Understanding** | | |
| 1.1 | Understanding the concept of computer networks, their classifications, layers, and its software and hardware components. | - Lectures.<br>- Discussions.<br>- Surveys.<br>- Experimental learning.<br>- Self- Learning.<br>- Development lectures.<br>- Brainstorming.<br>- Web Survey.<br>- KWL - Learning Schedule. | - Traditional and online achievement tests.<br>- Questions.<br>- Assignments.<br>- Participations.<br>- Presentations.<br>- Discussions<br>- Debates.<br>- Cognitive Tests. |
| 1.2 | Analysis of fundamentals and components of network security. | | |
| 1.3 | Knowledge of network addressing and segmentation techniques. | | |
| 1.4 | Knowledge of other networking techniques. | | |

| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|---|---|---|---|
| | | - Mind maps.<br>- Concept maps. | - Student Activity File. |
| **2.0** | **Skills** | | |
| 2.1 | Determining the methods of installing and operating computer network devices. | - Demonstrations.<br>- Development Lectures.<br>- Experimental learning.<br>- Peers Learning.<br>- Self- Learning.<br>- Discussions.<br>- Web Survey.<br>- Brainstorming.<br>- Teamwork.<br>- Problem Solving.<br>- Projects.<br>- Online Discussions. | - Presentations.<br>- Rubrics.<br>- Auditions.<br>- Production metrics.<br>- Observations.<br>- Labs.<br>- Student Activity File.<br>- Peer Assessments.<br>Self-Assessment. |
| 2.2 | Technical skills in managing, establishing, operating, maintaining, and solving network infrastructure problems. | | |
| 2.3 | The use of information and communication technology in communication, exchange of ideas, scientific research, and performance tasks and costs. | | |
| 2.4 | Practicing critical thinking and solving problems that the learner faces in the course in creative ways. | | |
| **3.0** | **Values** | | |
| 3.1 | Cooperation, teamwork, and professional ethics. | - Demonstrations.<br>- Development Lectures.<br>- Experimental learning.<br>- Peers Learning.<br>- Self- Learning.<br>- Discussions.<br>- Web Survey.<br>- Brainstorming.<br>- Teamwork.<br>- Problem Solving.<br>- Projects.<br>- Online Discussions. | - Presentations.<br>- Rubrics.<br>- Auditions.<br>- Production metrics.<br>- Observations.<br>- Labs.<br>- Student Activity File.<br>- Peer Assessments.<br>- Self-Assessment. |
| 3.2 | Take responsibility for continuous learning and continuing personal development. | | |
| 3.3 | Efficient and effective time management when applying acquired knowledge and skills. | | |

## 2. Assessment Tasks for Students

| # | Assessment task* | Week Due | Percentage of Total Assessment Score |
|---|---|---|---|
| **1** | One Midterm Exam | Week 6 | 20 |
| **2** | Quizzes | The whole semester | 10 |
| **3** | Passing CISCO Networking Academy Course | The whole semester | 10 |
| **4** | Labs | The whole semester | 15 |
| **5** | Group Project | Week 10 | 10 |
| **5** | Participation | The whole semester | 5 |
| **6** | Final Exam | Week 12 | 30 |
| **7** | Total | | 100 |

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

## E. Student Academic Counseling and Support

| |
|---|
| **Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:**<br>4 office hours per week.<br>4 hours of weekly meetings<br>Contact through the LMS<br>Communication/interact via e-mails with students |

## F. Learning Resources and Facilities

### 1.Learning Resources

| | |
|---|---|
| **Required Textbooks** | CompTIA Network+ Certification All-in-One Exam Guide, by Scott Jernigan, 6th Edition. |
| **Essential References Materials** | Computer Networking: A Top-Down Approach, by James F. Kurose, 6th Edition.<br>Networking All-in-One For Dummies, by Doug Lowe, 8th Edition.<br>Networking Fundamentals by Crystal Panek. |
| **Electronic Materials** | Course Lectures on the blackboard. |
| **Other Learning Materials** | N/A |

### 2. Facilities Required

| Item | Resources |
|---|---|
| **Accommodation**<br>(Classrooms, laboratories, demonstration rooms/labs, etc.) | Lecture room with Smart board Lab with 25 Pc |
| **Technology Resources**<br>(AV, data show, Smart Board, software, etc.) | PC and WIFI Internet access within the classroom .Projector, and Smart Board |
| **Other Resources**<br>(Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | N/A |

## G. Course Quality Evaluation

| Evaluation Areas/Issues | Evaluators | Evaluation Methods |
|---|---|---|
| Effectiveness of teaching and assessments. | Students – Peers Review | 1. Questionnaires and surveys approved by the department.<br>2. Faculty peer evaluations.<br>3. Reviewing the results of the students' evaluation. |
| Effectiveness of student assessment methods. | Peers Reviews, Program Leaders, Faculty, Students. | 1. Questionnaires and surveys approved by the department. |

| Evaluation Areas/Issues | Evaluators | Evaluation Methods |
|---|---|---|
| | | 2. Review course specifications and course reports periodically.<br>3. Peer evaluation.<br>4. Review samples of student work. |
| Learning resources | Program Leaders, Faculty, Students. | 1. Approved questionnaires and surveys from the department.<br>2. Students grade records. |
| Quality of learning resources | Program Leaders, Faculty. | 1. Review course report.<br>2. Analyze exam models and student grade records. |

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
**Assessment Methods** (Direct, Indirect)

## H. Specification Approval Data

| | |
|---|---|
| **Council / Committee** | Computer Programs Development Committee |
| **Reference No.** | The Third Semester of the year 1445 |
| **Date** | 08 / 03 / 2024 G, 27/ 08 /1445 H |

هيئة تقويم التعليم والتدريب

T-104
2022

# Course Specification

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

# Course Specification

| | |
|---|---|
| Course Title: | Life Elementary A2 |
| Course Code: | *Enter Course Code.* |
| Program: | Level 2- All |
| Department: | *Enter Department Name .* |
| College: | Applied College |
| Institution: | Imam Mohammad Ibn Saud Islamic University |
| Version: | *Course Specification Version Number* |
| Last Revision Date: | *Pick Revision Date.* |

# Table of Contents:


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| 1. References and Learning Resources | 13 |
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# A. General information about the course:

| Course Identification | | | | | |
|---|---|---|---|---|---|
| **1. Credit hours:** | 15 hours | | | | |
| **2. Course type** | | | | | |
| a. | University ☐ | College ☒ | Department☐ | Track☐ | Others☐ |
| b. | Required ☒ | Elective☐ | | | |
| **3. Level/year at which this course is offered:** Elementary/ Level 2 | | | | | |
| **4. Course general Description**<br>This course is a required Intensive General English language course that aims to enhance the proficiency and communicative competency of students enrolled in Applied Colleges to obtain the level of A2 in accordance with the CEFR. | | | | | |
| **5. Pre-requirements for this course (if any):**<br>Having completed English Level 1. | | | | | |
| **6. Co- requirements for this course (if any):**<br>None | | | | | |
| **7. Course Main Objective(s)**<br><br>The course intends to develop students' knowledge and ability of English language in all major skills which include reading, writing, listening, and speaking, as well as in sub-skills including grammar, vocabulary, and pronunciation at level A2. | | | | | |

## 1. Teaching mode (mark all that apply)

| No | Mode of Instruction | Contact Hours | Percentage |
|---|---|---|---|
| 1. | Traditional classroom | 120hrs | 80% |
| 2. | E-learning | 30hrs | 20% |
| 3. | Hybrid<br>• Traditional classroom<br>• E-learning | | |
| 4. | Distance learning | | |

## 2. Contact Hours (based on the academic semester)

| No | Activity | Contact Hours |
|---|---|---|
| 1. | Lectures | 120hrs |
| 2. | Laboratory/Studio | |
| 3. | Field | |
| 4. | Tutorial | |
| 5. | Others (specify)self-learning | 30hrs |
| | Total | 150hrs |

## B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| 1.0 | Knowledge and understanding | | | |
| 1.1 | **Vocabulary :**<br><br>Vocabulary: Exhibit sufficient vocabulary to express him/herself with some circumlocutions on most topics pertinent to his/her everyday life such as family, hobbies and interests, work, travel, and current events. | | Vocabulary is learnt through lexical sets, word-building, focus on collocations and through vocabulary in context and glossaries for above level words. | Formative and summative assessment |
| 1.2 | **Overall Listening comprehension:** - Understand straightforward factual information about common everyday or job related topics, identifying both general messages and specific details, provided speech is clearly articulated in a generally familiar accent. - Understand the main points of clear standard speech on familiar matters regularly encountered in work, school, leisure etc., including short narratives. - understand the | | Listening / role play | Formative and summative assessment |

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| | information content of the majority of recorded or broadcast audio material on topics of personal interest delivered in clear standard speech. | | | |
| 1.3 | **Grammatical accuracy:**<br>Express with reasonable accuracy in familiar contexts; generally good control though with noticeable mother tongue influence. Errors occur, but it is clear what he/she is trying to express. Uses reasonably accurately a repertoire of frequently used 'routines' and patterns associated with more predictable situations. | | Class presentation Of grammar and drilling exercises Pair-work | Formative and summative assessment |
| 1.4 | Through learning with Life, students will also have a wider awareness of the world they live in – the people, places and cultures – and the importance of global citizenship. | | | |
| 2.0 | Skills | | | |

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| 2.1 | **Overall spoken interaction:** Express in unprepared conversation of familiar topics, personal opinions and exchange information on topics that are familiar, of personal interest or pertinent to everyday life. - Communicate with some confidence on familiar routine and non-routine matters related to his/her interests and professional field. - Make his/her opinions and reactions understood as regards solutions to problems or practical questions of where to go, what to do, how to organize an event. - Take part in routine formal discussion of familiar subjects which is conducted in clearly articulated speech which involves the exchange of factual information, receiving instructions or the discussion of | | | Formative and summative assessment |

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| | solutions to practical problems. | | | |
| 2.2 | Overall written production: - Convey information and ideas on abstract as well as concrete topics, check information and ask about or explain problems with reasonable precision. - Write straightforward connected texts on a range of familiar subjects within his/her field of interest, by linking a series of shorter discrete elements into a linear sequence. - Summaries, report and give his/her opinion about accumulated factual information on familiar routine and non-routine matters within his/her field with some confidence. - Write very brief, reports to a standard conventionalized format, which pass on routine factual information and state reasons for actions. | | Active learning<br>- Pre-reading/<br>pre-writing | Formative and summative assessment |

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| 2.3 | Overall reading comprehension: - Read straightforward factual texts on subjects related to his/her interests and professional field with a satisfactory level of comprehension. - Scan longer texts in order to locate desired information, and gather information from different parts of a text, or from different texts in order to fulfil a specific task. - Find and understand relevant information in everyday material, such as letters, brochures and short official documents. | | -Active learning<br>-Intrapersonal learning<br>-interpersonal + collaborative learning +group work | Formative and summative assessment |
| 3.0 | Values, autonomy, and responsibility | | | |
| 3.1 | Develop an awareness of the values of global citizenship, being able to see different perspectives, show empathy and understanding. There will also be greater awareness of the issues surrounding sustainability. | | | |

| Code | Course Learning Outcomes | Code of CLOs aligned with program | Teaching Strategies | Assessment Methods |
|---|---|---|---|---|
| 3.2 | Develop collaborative and communicative skills, and the values that are needed to work successfully together. | | | |
| ... | | | | |

## C. Course Content

| No | List of Topics | Contact Hours |
|---|---|---|
| 1. | **Unit 1**<br>**Sun.** (1a )<br>**Mon.** (1b – 1d)<br>**Tues.** (1c- 1e )<br>**Wed.** (1f- review)<br>**Thur. ( self-study learning)** | 15hrs |
| 2. | **Unit 2**<br>**Sun.** (2a )<br>**Mon.** (2b – 2d)<br>**Tues.** (2c - 2e)<br>**Wed.** (2f- review )<br>**Thur. ( self-study learning)** | 15hrs |
| 3. | **Unit 3**<br>**Sun.** (3a )<br>**Mon.** (3b – 3d)<br>**Tues.** (3c- 3e )<br>**Wed.** (3f- review)<br>**Thur. ( self-study learning)** | |
| 4. | **Unit 4**<br>**Sun.** (4a )<br>**Mon.** (4b – 4d) | 15hrs |

| | | |
|---|---|---|
| | **Tues.** (4c- 4e )<br>**Wed.** (4f- review)<br><br>**Thur. ( self-study learning)** | |
| 5. | **Unit 5**<br><br>**Sun.** (5a)<br><br>**Mon.** (5b – 5d)<br><br>**Tues.** (5c- 5e)<br>**Wed.** (5f- review)<br>**Thur. ( self-study learning)** | 15hrs |
| 6. | **Unit 6**<br><br>**Sun.** (6a)<br><br>**Mon.** (6b – 6d)<br><br>**Tues.** (6c - 6e)<br>**Wed.** (6f- review)<br>**Thur. ( self-study learning)** | 15hrs |
| 7. | **Unit 7**<br><br>**Sun.** (7a )<br><br>**Mon.** (7b – 7d)<br><br>**Tues.** (7c- 7e )<br>**Wed.** (7f- review)<br>**Thur. ( self-study learning)** | 15hrs |
| 8. | **Unit 8**<br><br>**Sun.** (8a )<br><br>**Mon.** (8b – 8d)<br><br>**Tues.** (8c- 8e )<br><br>**Wed.** (8f- review)<br>**Thur. ( self-study learning)** | 15hrs |
| 9. | **Unit 9**<br><br>**Sun.** (9a )<br><br>**Mon.** (9b – 9d)<br><br>**Tues.** (9 c- 9e)<br><br>**Wed.** (9f- review) | 15hrs |

| | | |
|---|---|---|
| | **Thur. ( self-study learning)** | |
| 10 | **Unit 10**<br>**Sun.** (10a )<br>**Mon.** (10b – 10d)<br>**Tues.** (10c- 10e )<br>**Wed.** (10f- review)<br>**Thur. ( self-study learning)** | |
| Total | | 150hrs |

## D. Students Assessment Activities

| No | Assessment Activities * | Assessment timing (in week no) | Percentage of Total Assessment Score |
|---|---|---|---|
| 1. | Quiz | Week 4 | 10% |
| 2. | Project | Week 5 or 7 | 10% |
| 3. | Oral task | Week 9 | 10% |
| 4. | Participation | All along | 10% |
| 5. | Self-learning | Every Thursday | 10% |
| 6. | Midterm Examination | Week 6 | 20% |
| 6. | Final Examination | Week 11 | 30% |

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

# E. Learning Resources and Facilities

## 1. References and Learning Resources

| | |
|---|---|
| Essential References | Life Elementary Students' Book and Workbook |
| Supportive References | Life Elementary Teachers' Book and companion website (www.eltngl.com/life2e) |
| Electronic Materials | Life Elementary Classroom Presentation Tool, Life Online Workbook (accessed through MyELT) |
| Other Learning Materials | |

## 2. Required Facilities and equipment

| Items | Resources |
|---|---|
| facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.) | Classrooms, laboratories. |
| Technology equipment (projector, smart board, software) | |
| Other equipment (depending on the nature of the specialty) | |

# F. Assessment of Course Quality

| Assessment Areas/Issues | Assessor | Assessment Methods |
|---|---|---|
| Effectiveness of teaching | Students, classroom observation, external reviewers' visit from the Accreditation Agency | Students survey Formal classroom observation |
| Effectiveness of students assessment | Quality and Development Unit, Curriculum Committee, Assessment Committee | Item analysis data, teachers' feedback, students' feedback, course reports. |
| Quality of learning resources | Quality and Development Unit | Annual quality improvement program review |
| The extent to which CLOs have been achieved | Quality and Development Unit | Course report, data analysis of achievement test |
| Other | | |

**Assessor** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

**Assessment Methods** (Direct, Indirect)

## G. Specification Approval Data

| | |
|---|---|
| COUNCIL /COMMITTEE | |
| REFERENCE NO. | |
| DATE | |