



Applied College

Programming Diploma Program

Level 1

Course title	English Language (1)
Course code	ENG 101
Credit hours	4
Medium of instruction	English
Course specification	English Language (1) ENG 101 is taught at the first level of first year for 4 credit hours.

Course title	Computer Maintenance Skills
Course code	TECM 110
Credit hours	4
Medium of instruction	English
Course specification	This course covers topics related to computers including computers components, basics networking, operating systems, virtualization, troubleshooting, and operational procedures. Students will learn how to maintain computers: diagnostics, repair, update and amend the pieces, partitioning and preparing the disks. This course contains labs content that includes technical concepts and terminology of the PC's internal and external components and operating systems.

Course title	Operating Systems 1
Course code	TECM 111
Credit hours	4
Medium of instruction	English
Course specification	This course gives an overview of Operating Systems concepts. Topics include Software and Hardware management. During this course students will learn how to install and configure an OS and how to work in command line using Linux OS.



Course title	Basics of Wired Networks
Course code	TECM 120
Credit hours	4
Medium of instruction	English
Course specification	This course introduces networking concepts and technologies, Network architectures, cabling and topology, ethernet basics, network installation, TCP/IP applications and network protocols, advanced networking devices and wireless networking. At the end of this course students are prepared to take the CompTIA Network+ certification examination.

Level 2

Course title	English Language (2)
Course code	ENG 102
Credit hours	4
Medium of instruction	English
Course specification	English Language (2) ENG 102 is taught at the second level of first year for 4 credit hours.

Course title	Database Management
Course code	PROG 110
Credit hours	4
Medium of instruction	English
Course specification	This course covers principles of database systems, architecture of database management systems, relational model conceptual design and requirement analysis, database design and normalization, query languages, multi-user and distributed database issues; practical use of a DBMS and building of a database application.

Course title	Computer Programming Concepts
Course code	PROG 120
Credit hours	4
Medium of instruction	English
Course specification	This course covers concepts of problem solving using constructs of logic inherent in computer programming languages. It covers all the essential programming concepts including variables, data types, control statements, functions and arrays. In this course,



	students will apply problem solving concepts by analyzing problems and constructing, testing, and implementing algorithms using pseudo-code, and procedural programming.
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Course title	Information Technology Basics
Course code	TECM 112
Credit hours	4
Medium of instruction	English
Course specification	This course introduces the fundamentals to design the information technology systems using integrated circuits. It presents an exploration of the abstractions, principles, and techniques used in the design of digital and computer systems.

Level 3

Course title	System Analysis and Design Tools
Course code	PROG 111
Credit hours	4
Medium of instruction	English
Course specification	This course introduces information systems development with today's latest practical and streamline approach. Students learn about emerging technologies and methodologies, including agile methods, cloud computing and mobile applications system analysis and design. At the end of this course, students are prepared to master critical thinking and IT skills needed in today's dynamic, business-related environment.

Course title	Programming Languages for Information Applications I
Course code	PROG 121
Credit hours	4
Medium of instruction	English
Course specification	This course introduces the fundamentals of object-oriented methodologies using Java. It lays a solid foundation for the development of information application solutions in an object-oriented environment. At the end of this course, students are prepared to take the "MTA- Introduction to Programming Using Java" Certificate.



Course title	Visual Basic Programming Skills
Course code	PROG 122
Credit hours	5
Medium of instruction	English
Course specification	This course introduces the Visual Basic programming language to create business applications. Topics include creating a graphical user interface, working with objects and events, decision and repetition structures, debugging and error handling, using multiple forms, data manipulation techniques, and an introduction to working with databases. Students will implement applications designed to run in a Windows environment.

Course title	C# Programming skills
Course code	PROG 123
Credit hours	5
Medium of instruction	English
Course specification	This course covers the fundamentals of structured design, development, testing and implementation. The course teaches students class hierarchies and inheritance. It is also focused on polymorphism and dynamic binding, and gives attention to abstraction and information hiding. At the end of this course students are prepared to take the MTA certification: Programming in C#.

Course title	Python Programming Skills1
Course code	PROG 124
Credit hours	4
Medium of instruction	English
Course specification	This course introduces the fundamental concepts of computing programming using Python. Students will be introduced to basic syntax, programming, and commonly used packages for data manipulation and exploration. The course is meant to be accessible to beginners new to the language. At the end of this course, students are enabled to further study of more advanced topics and prepared to take the Introduction to Programming Using Python certification examination (MTA).



Exit Point

Course title	Internship
Course code	PROG 192
Credit hours	6
Medium of instruction	English
Course specification	This course is taught after finishing the first year for students who want to graduate with Associate diploma.

Level 4

Course title	English Language in Computer Science
Course code	PROG 241
Credit hours	4
Medium of instruction	English
Course specification	English Language in Computer Science PROG 241 is taught at the fourth level of second year for 4 credit hours.

Course title	Programming Languages for Information Applications 2
Course code	PROG 225
Credit hours	5
Medium of instruction	English
Course specification	This course is a continuation of Programming Languages for Information Applications 1. The course focuses on the understanding and practical mastery of object-oriented concepts such as classes, objects, data abstraction, methods, method overloading, inheritance and polymorphism. Students learn to create robust console and GUI applications and store and retrieve data from relational databases. After course completion, students can pass Java SE Programmer I exam (1Z0-808).

Course title	Python Programming Skills2
Course code	PROG 226
Credit hours	4
Medium of instruction	English
	This course is designed to teach students to program



Course specification	in Python in a practical and hands-on manner using the industry standard methods, tools and technologies. It not only teaches students the Python programming language but also improves their algorithmic thinking and problem-solving capabilities so that they can write code that actually works and produces the desired functional results. Giving students enough well thought coding exercises ensures this. In addition, students will work on and finish one project in a certain area such as web development, desktop apps development, etc.
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Course title	DataBase Design and implementation skills
Course code	PROG 212
Credit hours	5
Medium of instruction	English
Course specification	This course teaches students how to design a logical data model and how to create databases. Students learn to use stored procedures, transactions, triggers, user-defined functions and views.

Course title	Data Structures Basics
Course code	PROG 213
Credit hours	5
Medium of instruction	English
Course specification	This course covers the abstract data types and data structures. Students will learn how these data structures are implemented in different programming languages and will practice implementing them.

Level 5

Course title	Smart Device Programming
Course code	PROG 230
Credit hours	4
Medium of instruction	English
Course specification	This course introduces the basic and important design concepts of mobile applications development. Students will be able to write mobile applications, simulate and test on mobile hardware.

Course title	Website Development and Management
Course code	PROG 231
Credit hours	5



Computer Science and Information Technology
Programs

برامج علوم الحاسب وتقنية المعلومات

Medium of instruction	English
Course specification	This course allows the student to master the tools needed to develop and manage websites and it introduces web page layout with HTML and CSS, JavaScript for event handling and MySQL to provide access to a custom database.

Course title	Practical Training (1)
Course code	PROG 290
Credit hours	3
Medium of instruction	English
Course specification	This course is taught at the fifth level for 3 credit hours.

Course title	Graduation Project (1)
Course code	PROG 280
Credit hours	3
Medium of instruction	English
Course specification	This course is the capstone for the Computer Programming Specialization and it is designed for Computer Science students who have passed 66 hours. This course allows the student use their knowledge of systems analysis and design concepts to complete a comprehensive project description including project analysis, literature review, detailed project plan, documentation, and final presentation.

Level 6

Course title	Practical Training (2)
Course code	PROG 291
Credit hours	6
Medium of instruction	English
Course specification	This course is taught at the sixth level for 6 credit hours.

Course title	Graduation Project (2)
Course code	PROG 281
Credit hours	3
Medium of instruction	English
Course specification	This course is a continuity of the course PROG280. It allows the student use their knowledge of programming and IT concepts to complete a comprehensive project including a project plan, design, implementation, documentation, and final presentation.



Applied College

Information Technology Diploma Program

Level 1

Course title	English Language (1)
Course code	ENG 101
Credit hours	4
Medium of instruction	English
Course specification	English Language (1) ENG 101 is taught at the first level of first year for 4 credit hours.

Course title	Computer Maintenance Skills
Course code	TECM 110
Credit hours	4
Medium of instruction	English
Course specification	This course covers topics related to computers including computers components, basics networking, operating systems, virtualization, troubleshooting, and operational procedures. Students will learn how to maintain computers: diagnostics, repair, update and amend the pieces, partitioning and preparing the disks. This course contains labs content that includes technical concepts and terminology of the PC's internal and external components and operating systems.

Course title	Database Management
Course code	PROG 110
Credit hours	4
Medium of instruction	English
Course specification	This course covers principles of database systems, architecture of database management systems, relational model conceptual design and requirement analysis, database design and normalization, query languages, multi-user and distributed database issues; practical use of a DBMS and building of a database application.



Course title	Computer Programming Concepts
Course code	PROG 120
Credit hours	4
Medium of instruction	English
Course specification	This course covers concepts of problem solving using constructs of logic inherent in computer programming languages. It covers all the essential programming concepts including variables, data types, control statements, functions and arrays. In this course, students will apply problem solving concepts by analyzing problems and constructing, testing, and implementing algorithms using pseudo-code, and procedural programming.

Level 2

Course title	English Language (2)
Course code	ENG 102
Credit hours	4
Medium of instruction	English
Course specification	English Language (2) ENG 102 is taught at the second level of first year for 4 credit hours.

Course title	Operating Systems 1
Course code	TECM 111
Credit hours	4
Medium of instruction	English
Course specification	This course gives an overview of Operating Systems concepts. Topics include Software and Hardware management. During this course students will learn how to install and configure an OS and how to work in command line using Linux OS.

Course title	Information Technology Basics
Course code	TECM 112
Credit hours	4
Medium of instruction	English
Course specification	This course introduces the fundamentals to design the information technology systems using integrated circuits. It presents an exploration of the abstractions, principles, and techniques used in the design of digital and computer systems.



Course title	Basics of Wired Networks
Course code	TECM 120
Credit hours	4
Medium of instruction	English
Course specification	This course introduces networking concepts and technologies, Network architectures, cabling and topology, ethernet basics, network installation, TCP/IP applications and network protocols, advanced networking devices and wireless networking. At the end of this course students are prepared to take the CompTIA Network+ certification examination.

Level 3

Course title	Networks management and analysis
Course code	TECM 121
Credit hours	4
Medium of instruction	English
Course specification	This course provides students with a comprehensive view of the network management problem, including its concepts, scope, challenges, and techniques. Hence, network analysis and its performance measurements. At the end of this course students are prepared to manage future IT infrastructure.

Course title	Network security support1
Course code	TECM 122
Credit hours	4
Medium of instruction	English
Course specification	This course includes an overview of computer network security topics. Also, methods to secure network connections and the connected hardware. It also examines the diverse sources of dangers that may affect the networks, the resistance methods and securing the network. In particular, the student is trained to deal with hardware securing systems against viruses and its impacts. At the end of this course students are prepared to take the CCNA Network certification examination.



Course title	System Analysis and Design Tools
Course code	PROG 111
Credit hours	4
Medium of instruction	English
Course specification	This course introduces information systems development with today's latest practical and streamline approach. Students learn about emerging technologies and methodologies, including agile methods, cloud computing and mobile applications system analysis and design. At the end of this course, students are prepared to master critical thinking and IT skills needed in today's dynamic, business-related environment.

Course title	Operating systems 2
Course code	TECM 113
Credit hours	5
Medium of instruction	English
Course specification	This course introduces the management of Linux operating system. At the end of this course students are prepared to take the CompTIA Linux+ certification examination

Course title	Computer Network Operating Systems
Course code	TECM 114
Credit hours	5
Medium of instruction	English
Course specification	This course provides the student with the main skills necessary to deal in general with network software of operating system, Linux operation system and windows in particular, the internet protocol, diverse services, securing and troubleshooting operation system.

Exit Point:

Course title	Internship
Course code	TECM 192
Credit hours	6
Medium of instruction	English
Course specification	This course is taught after finishing the first year for students who want to graduate with Associate diploma.



Level 4

Course title	English Language in Computer Science
Course code	PROG 241
Credit hours	4
Medium of instruction	English
Course specification	English Language in Computer Science PROG 241 is taught at the fourth level of second year for 4 credit hours.

Course title	Technical Support and Customer Service Skills
Course code	TECM 230
Credit hours	4
Medium of instruction	English
Course specification	This course will introduce the business, technical, and interpersonal skills needed to provide customer support. This course is designed to provide individuals interested in a technical customer support career with the knowledge and skills to be successful in that field. Students will gain a better understanding of the various careers in the customer support industry and the knowledge and skill sets needed to enter and advance in those careers.

Course title	Ethical Approaches To Information Technology Management
Course code	TECM 231
Credit hours	4
Medium of instruction	English
Course specification	This course emphasizes an emerging model of information ethics from historical and cross-cultural perspectives and then applies this model to a variety of new and emerging technologies that are inherently social in their construction and use. At the end of this course, students are able to study the technological underpinnings of associated technology systems, experiment with individual and group interaction with technologies, and examine the mechanics of ethical and unethical behaviors.



Course title	Network Servers
Course code	TECM 223
Credit hours	5
Medium of instruction	English
Course specification	This course introduces the basic of network servers. At the end of this course, a student will be able to describe topics ranging from server hardware to server operating systems, networking and security, storage, and cloud-based solutions. Hence, the understanding of server administrators is responsible for remote administration of potentially hundreds of physical and virtualized servers.

Course title	Network security support2
Course code	TECM 224
Credit hours	5
Medium of instruction	English
Course specification	This course covers advanced topics in network security for wired and wireless networks such as; wireless security protocols, Firewalls, forensics, networks protocols and VPN. At the end of this course, students will be prepared to take the CCNA Network certification examination.

Level 5:

Course title	Computer Information Technology Project Management
Course code	TECM 280
Credit hours	4
Medium of instruction	English
Course specification	This course covers key components of project management including project scope management, project time, cost management, quality management, human resource considerations and risk management.

Course title	Website Development and Management
Course code	PROG 231
Credit hours	5
Medium of instruction	English
Course specification	This course allows the student to master the tools needed to develop and manage websites and it introduces web page layout with HTML and CSS,



	JavaScript for event handling and MySQL to provide access to a custom database.
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Course title	Graduation Project (1)
Course code	TECM 281
Credit hours	3
Medium of instruction	English
Course specification	This course is the capstone for the information technology program and it is designed for Computer Science students who have passed 66 hours. This course allows the student use their knowledge of IT concepts to complete a comprehensive project including a detailed project plan, documentation, and final presentation.

Course title	Practical Training (1)
Course code	TECM 290
Credit hours	3
Medium of instruction	English
Course specification	This course is taught at the fifth level for 3 credit hours.

Level 6

Course title	Practical Training (2)
Course code	TECM 291
Credit hours	6
Medium of instruction	English
Course specification	This course is taught at the sixth level for 6 credit hours.

Course title	Graduation Project (2)
Course code	TECM 282
Credit hours	3
Medium of instruction	English
Course specification	This course is a continuity of the course TECM 281. It allows the student use their knowledge of IT concepts to complete a comprehensive project including a detailed project plan, documentation, design and implementation, and final presentation.



Applied College

Multimedia Design Diploma Program

Level 1

Course title	English Language (1)
Course code	ENG 101
Credit hours	4
Medium of instruction	English
Course specification	English Language (1) ENG 101 is taught at the first level of first year for 4 credit hours.

Course title	Computer Maintenance Skills
Course code	TECM 110
Credit hours	4
Medium of instruction	English
Course specification	This course covers topics related to computers including computers components, basics networking, operating systems, virtualization, troubleshooting, and operational procedures. Students will learn how to maintain computers: diagnostics, repair, update and amend the pieces, partitioning and preparing the disks. This course contains labs content that includes technical concepts and terminology of the PC's internal and external components and operating systems.

Course title	Basics of Wired Networks
Course code	TECM 120
Credit hours	4
Medium of instruction	English
Course specification	This course introduces networking concepts and technologies, Network architectures, cabling and topology, ethernet basics, network installation, TCP/IP applications and network protocols, advanced networking devices and wireless networking. At the end of this course students are prepared to take the CompTIA Network+ certification examination.



Course title	Database Management
Course code	PROG 110
Credit hours	4
Medium of instruction	English
Course specification	This course covers principles of database systems, architecture of database management systems, relational model conceptual design and requirement analysis, database design and normalization, query languages, multi-user and distributed database issues; practical use of a DBMS and building of a database application.

Level 2

Course title	English Language (2)
Course code	ENG 102
Credit hours	4
Medium of instruction	English
Course specification	English Language (2) ENG 102 is taught at the second level of first year for 4 credit hours.

Course title	Computer Programming Concepts
Course code	PROG 120
Credit hours	4
Medium of instruction	English
Course specification	This course covers concepts of problem solving using constructs of logic inherent in computer programming languages. It covers all the essential programming concepts including variables, data types, control statements, functions and arrays. In this course, students will apply problem solving concepts by analyzing problems and constructing, testing, and implementing algorithms using pseudo-code, and procedural programming.

Course title	Operating Systems 1
Course code	TECM 111
Credit hours	4
Medium of instruction	English



Course specification	This course gives an overview of Operating Systems concepts. Topics include Software and Hardware management. During this course students will learn how to install and configure an OS and how to work in command line using Linux OS.
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Course title	Graphic Software Applications
Course code	MEDI 110
Credit hours	4
Medium of instruction	English
Course specification	This course introduces basic Computer graphics concepts and terminology. It focuses on manipulating vector graphics for final output through print production. It includes the basic tools and techniques- page layout, drawing basic shapes and working with lines and nodes. It covers selecting and manipulating objects, drawing and shaping objects platforms and output devices, color theory, color management, and post production techniques.

Level 3

Course title	Interactive Digital Media Skills
Course code	MEDI 111
Credit hours	4
Medium of instruction	English
Course specification	Interactive Digital Media Skills MEDI 111 is taught at the third level of first year for 4 credit hours. This course continuing in giving advanced Computer graphics concepts and principles. It focuses on manipulating vector graphics for final output through print production. It includes advanced tools and techniques- compound paths and shapes and working with filters, blends and masks. It covers objects distortion, making effects and exploring pressure sensitive tools and transparency.

Course title	2D Modeling and Animation
Course code	MEDI 113
Credit hours	4
Medium of instruction	English
Course specification	This Course is designed to instill an understanding of animation principles and produce quality 2D Digital



Course specification	animations implementing these principles and exploring various techniques. Students will learn the production process of animation including writing a treatment, storyboarding, timing through animatics and final rendered animations.
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Course title	Digital Image Editing
Course code	MEDI 120
Credit hours	4
Medium of instruction	English
Course specification	This course introduces basic digital image editing concepts and terminology. It focuses on tools and techniques of photo correction and enhancement and editing. Gain experience in correcting, improving and repairing raster images. Identify and analyze fundamental concepts of the digital imaging domain. Utilize appropriate digital imaging techniques to compose, mix and edit image compositions.

Course title	Visual effects
Course code	MEDI 121
Credit hours	4
Medium of instruction	English
Course specification	This Course is designed to give a study of the techniques and practical application of visual effects to motion graphics sequences using specific software. Topics address simulation of natural environmental effects, realistic compositing of pyrotechnic footage, motion tracking and match-moving. The focus will be centered on industry standards and procedures for planning, creating and applying such effects.

Course title	Video and Infographic Advertisement Design
Course code	MEDI 122
Credit hours	4
Medium of instruction	English
Course specification	This course introduces the basics of video and infographic advertisement design. It gives the important tools used to achieve a video and design for advertisement: mainly Photoshop, Illustrator, Premiere Pro, etc.



Exit Point:

Course title	Internship
Course code	MEDI 192
Credit hours	6
Medium of instruction	English
Course specification	This course is taught after finishing the first year for students who want to graduate with Associate diploma.

Level 4

Course title	English Language in Computer Science
Course code	PROG 241
Credit hours	4
Medium of instruction	English
Course specification	English Language in Computer Science PROG 241 is taught at the fourth level of second year for 4 credit hours.

Course title	3D Modeling and Animation
Course code	MEDI 214
Credit hours	5
Medium of instruction	English
Course specification	This Course is designed to instill an understanding of animation principles and produce quality 3D Digital animations implementing these principles and exploring various techniques. Students will learn 3D object manipulation, modeling methodologies, lighting and rendering effects, camera manipulation, textures creation and use, dynamic animation, and characters creation and manipulation.

Course title	Computer Games
Course code	MEDI 215
Credit hours	4
Medium of instruction	English
Course specification	This Course is designed to instil well founded broad understanding of the basics of computer games principles and tools. By implementing these games principles and exploring various techniques, students



Course specification	will produce quality 2D video games. Students will learn the video games history and will move to the basics of game design and development processes.
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Course title	Electronic publishing
Course code	MEDI 216
Credit hours	5
Medium of instruction	English
Course specification	This course introduces the electronic publishing concepts and principles. It focuses on designing a landing page for an ebook, developing interactive digital publications, including eBooks, eNewsletters, and eMagazines, and utilizing various digital media publishing formats, such as EPUB, iBOOKS, PDF, and XML. It includes advanced tools and techniques used for electronic publishing

Course title	Digital Video Production
Course code	MEDI 223
Credit hours	4
Medium of instruction	English
Course specification	This Course is designed to instill an understanding of fundamental digital video production. Students will learn how to perform video editing on a basic level. This includes editing segments of motion video production footage by cutting, trimming and overlaying them. It covers adding video effects, clips and sequences, exporting frames and managing projects.

Level 5:

Course title	Digital Audio Production
Course code	MEDI 224
Credit hours	5
Medium of instruction	English
Course specification	This Course is designed to instill an understanding of fundamentals of digital Audio production. Students will learn how to perform Audio editing on a basic level. This includes editing Audio formats, linking files, editing digital recording-trimming, synthesis, sampling and batch processing and finalize files.



Course title	Website Development and Management
Course code	PROG 231
Credit hours	5
Medium of instruction	English
Course specification	This course allows the student to master the tools needed to develop and manage websites and it introduces web page layout with HTML and CSS, JavaScript for event handling and MySQL to provide access to a custom database.

Course title	Graduation Project (1)
Course code	MEDI 280
Credit hours	3
Medium of instruction	English
Course specification	This course is the capstone for the Multimedia design program and it is designed for Computer Science students who have passed 65 hours. This course allows the student use their knowledge of multimedia design concepts to complete a comprehensive project including a detailed project analysis and plan, documentation, and final presentation.

Course title	Practical Training (1)
Course code	MEDI 290
Credit hours	3
Medium of instruction	English
Course specification	This course is taught at the fifth level for 3 credit hours.

Level 6

Course title	Practical Training (2)
Course code	MEDI 291
Credit hours	6
Medium of instruction	English
Course specification	This course is taught at the sixth level for 6 credit hours.

Course title	Graduation Project (2)
Course code	MEDI 281
Credit hours	3
Medium of instruction	English
Course specification	This course is a continuation of the course MEDI



Course specification	280. It allows the student use their knowledge of multimedia design concepts to complete a comprehensive project including a detailed project plan, implementation, documentation, and final presentation.
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