



## Applied College

### Programming Diploma Program (Distance Learning)

#### Level 1

<b>Course title</b>	English Language (1)
<b>Course code</b>	ENG 101
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	English Language (1) ENG 101 is taught at the first level for 3 credit hours.

<b>Course title</b>	Computer Maintenance Skills
<b>Course code</b>	TECM 110
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	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.

<b>Course title</b>	Operating Systems 1
<b>Course code</b>	TECM 111
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	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.



<b>Course title</b>	Basics of Wired Networks
<b>Course code</b>	TECM 120
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	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.

<b>Course title</b>	Database Management
<b>Course code</b>	PROG 110
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	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. At the end of this course students are prepared to pass the exam of the professional certificate: Certified Foundations Associate, Database.

<b>Course title</b>	Computer Programming Concepts
<b>Course code</b>	PROG 120
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	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:

<b>Course title</b>	English Language (2)
<b>Course code</b>	ENG 102
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	English Language (2) ENG 102 is taught at the second level of first year for 3 credit hours.

<b>Course title</b>	Information Technology Basics
<b>Course code</b>	TECM 112
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	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.

<b>Course title</b>	System Analysis and Design Tools
<b>Course code</b>	PROG 111
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	This course introduces information systems development with today's latest practical and streamlines 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.

<b>Course title</b>	Programming Languages for Information Applications I
<b>Course code</b>	PROG 121
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	This course introduces the fundamentals of object-oriented methodologies using Java. It lays a solid foundation for the development of information



	<p>application solutions in an object-oriented environment.</p> <p>At the end of this course, students are prepared to take the "MTA- Introduction to Programming Using Java" Certificate.</p>
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<b>Course title</b>	Visual Basic Programming Skills
<b>Course code</b>	PROG 122
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	<p>This elective 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.</p>

<b>Course title</b>	C# Programming skills
<b>Course code</b>	PROG 123
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	<p>This elective 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#.</p>

<b>Course title</b>	Python Programming Skills1
<b>Course code</b>	PROG 124
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	<p>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</p>



	advanced topics and prepared to take the Introduction to Programming Using Python certification examination (MTA).
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## 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 3

Course title	English Language in Computer Science
Course code	PROG 241
Credit hours	3
Medium of instruction	English
Course specification	English Language in Computer Science PROG 241 is taught at the third level for 3 credit hours.

Course title	Programming Languages for Information Applications 2
Course code	PROG 225
Credit hours	3
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	3



<b>Medium of instruction</b>	English
<b>Course specification</b>	This course is designed to teach students to program 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.

<b>Course title</b>	DataBase Design and implementation skills
<b>Course code</b>	PROG 212
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	This elective 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.

<b>Course title</b>	Data Structures Basics
<b>Course code</b>	PROG 213
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	This elective 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.

<b>Course title</b>	Smart Device Programming
<b>Course code</b>	PROG 230
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	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.



<b>Course title</b>	Website Development and Management
<b>Course code</b>	PROG 231
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	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.

## Level 4

<b>Course title</b>	Internship
<b>Course code</b>	PROG 293
<b>Credit hours</b>	6
<b>Medium of instruction</b>	English
<b>Course specification</b>	This course is taught at the fourth level for 6 credit hours.

<b>Course title</b>	Graduation Project
<b>Course code</b>	PROG 283
<b>Credit hours</b>	3
<b>Medium of instruction</b>	English
<b>Course specification</b>	This course is the capstone for the Computer Programming Specialization and it is designed for Computer Science students who have passed 54 hours. This course allows the students use their knowledge of programming and IT concepts to complete a comprehensive project including a project plan, design, implementation, documentation, and final presentation.