

IT Specialist Certificate Program

Schedule

| | January 9 - March 4 (8 weeks) | March 13 - May 6 (8 weeks) |
|-------------------|---|--|
| Mondays | 8am - Noon: Structures & logic | 8am - Noon: Object-oriented programming |
| Tuesdays | 8am - Noon: Database basics 1pm - 3pm: Networking | 8am - Noon: Object-oriented programming 1pm - 3pm: Networking |
| Wednesdays | 8am - Noon: Database basics | 8am - Noon: Database reporting |
| Thursdays | 8am - Noon: Programming foundations 1pm - 3pm: Networking | 8am - Noon: Database reporting 1pm - 3pm: Networking |
| Fridays | 8am - Noon: Programming foundations 1pm - 3pm: Computer technologies (testing) | 9am - 11am: Communication skills |

Overview of Curriculum

| Course (Course # & Credits) | Concepts & Learning Outcomes | Technology & Tools | Instruction method |
|---|--|--------------------------------------|---------------------------------------|
| Computer technologies (DBP110, 1) | Use of technology in workplace | Windows, Office suite, Internet | Online, ICDL exam |
| Networking (CIS195, 3) | Theoretical & practical | | Classroom, Lab, CompTIA Network+ exam |
| Database basics (DBP150, 3) | Relational databases, distributed computing | SQL, SQLite, SQLExpress | Classroom |
| Database reporting (DBP220, 3) | Querying & presenting data | SSRS (SQL Server Reporting Services) | Classroom |
| Structures & logic (DBP205, 3) | Functions, algorithms, screen flow | Visual Logics | Classroom |
| Programming foundations (DBP210, 3) | Translating requirements into code | Visual Basic | Classroom |
| Object-oriented programming (DBP225, 3) | Application development, method calling, debugging | C#, .NET | Classroom |
| Communication skills (DBP130, 2) | Workplace professionalism | | Classroom |

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Details about each class

DBP110. ICDL Computer Technologies. This course provides a thorough understanding of information and communication technologies (ICT). Students who successfully complete this course will have a solid foundation in core desktop computer applications including word processing, spreadsheets, database and presentation software. Students will also be exposed to foundational topics including Windows operating system, computer operations and internet usage. This is an online course that includes demonstrations and hands on exercises. Successful completion of the course will prepare students for the ICDL certification tests. ICDL (International Computer Driving License) is the US arm of the ECDL Foundation and is an internationally recognized computer certification.

CIS195. Networking Fundamentals. This course is designed to introduce students to basic network concepts and terminology. Both theoretical and practical material is introduced in this class. This course covers learning objectives tested in the CompTIA Network+ exam. This course includes hands on laboratory assignments.

DBP150. Database Basics. This course is designed to move the student beyond the confines of PC based databases. The students will learn the basics of relational database systems including topics such as indexes and normalization. The focus of the course will then move to enterprise database management systems and include discussion of distributed computing and data warehousing. Finally, they will learn the fundamentals of querying using Structured Query Language (SQL).

DBP220. Database Reporting. In this course the student will learn how to effectively pull information from a variety of database systems. The student will learn how to directly pull data from a database using a reporting tool and how to use SQL as an intermediate step in reporting to more effectively work with large stores of data. A heavy focus will be placed on the popular SSRS (SQL Server Reporting Services) software application.

DBP205. Discrete Structures. In this course the student will learn foundations that underlay programming in the majority of programming languages. Discrete structures such as Boolean logic, proof techniques, graphs, recurrence relations and functions will be covered. The class will then move into algorithms including sorting, binary search and flowcharting. Pseudo code will be used as a means to introduce programming that is non-language specific. The students will be introduced to the concept of screen flow as a way of analyzing how an end user will move through an application. Topics in this course will be reinforced with the assistance of Visual Logics software.

DBP210. Computer Programming I: In this course the student will learn foundations that underlay programming in the majority of programming languages. Discrete math such as sets, logic and proofs will be learned. The class will then move into algorithms including sorting, binary search and flowcharting. Pseudo code will be used as a means to introduce programming that is non-language specific. The students will be introduced to the concept of screen flow as a way of analyzing how an end user will move through an application. Finally, the students will move to the Visual Basic language to transfer their skills into a language to develop a variety of applications.

DBP225. Computer Programming II: In this course the students will add to their knowledge of programming by focusing further on object oriented programming using the C# language. They will also learn how the .NET framework provides a structure for programs. Finally, they will be introduced to the widely used, class-based, object-oriented language C#. With these languages, students will learn about stand alone applications as well as automating processes. Not only will students learn to write original code, they will be exposed to methods of debugging existing code.

DBP130. Professional Communication Skills. People in IT professions need the skills to communicate both with other IT personnel as well as end users. In this course, skills will be taught to assist students with both electronic and verbal communication skills with a focus on the differences in communicating with each group. Students will also focus on professionalism in the workplace.