



\$74,000

Average median annual wage

Source: Texas Workforce Commission



College of the Mainland®

Computer Programming

Dual Credit Academy Workforce Programs for High School Students

About the Career

Computer programmers write code, test it and debug software programs.

Job Market and Salary

Network & Computer Systems Administrator	Avg. Median Salary, Annual	Percentage Growth by 2020
Gulf Coast Region	\$74,000	32.6%
Texas	\$85,660	23.3%
National	\$72,560	12%

Texas Workforce Commission

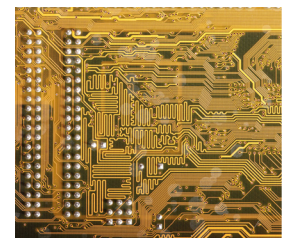
About COM Program

The Computer Programming Certificate provides students with a solid background in the software development process and object-oriented modeling. The students learn several programming languages that equips them with the skills needed for entry-level programming, and augments the skills taught in other computer information systems certificates.

This program is taught at the COM Learning Center–North County located in League City.

Contact Information

Please speak with the dual credit advisor or college connection advisor at your high school.



Programming Certificate

Dual Credit Academy Workforce Programs for High School Students

COSC 1301 – INTRODUCTION TO COMPUTING

Overview of computer systems-hardware, operating systems, and microcomputer application software, including the Internet, word processing, spreadsheets, presentation graphics, and databases. Current issues such as the effect of computers on society, and the history and use of computers in business, educational, and other modern settings are also studied. This course is not intended to count toward a student's major field of study in business or computer science.

COSC 1336 – PROGRAMMING FUNDAMENTALS I

Introduces the fundamental concepts of structured programming and provides a comprehensive introduction to programming for computer science and technology majors. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging. This course assumes computer literacy. This course is included in the Field of Study Curriculum for Computer Science.

ITSW 1307 – INTRODUCTION TO DATABASE

This course is an introductory course in relational database management systems. Upon successful completion of this course the student will be able to identify database terminology and concepts, plan, define, and design a database, design and generate tables, forms and reports, and design and process queries. This course leads to the Microsoft certification in SQL Server Database Administration Fundamentals.

ITSE 1311 – BEGINNING WEB PROGRAMMING

This is a beginning course in web programming. It provides students with the skills to create web pages in HyperText Markup Language and to write JavaScript programs.

COSC 1337 – PROGRAMMING FUNDAMENTALS II

This course focuses on the object-oriented programming paradigm, emphasizing the definition and use of classes along with fundamentals of object-oriented design. The course includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering processes. Students will apply techniques for testing and debugging software. This course is included in the Field of Study Curriculum for Computer Science. Prerequisite: COSC 1336 Programming Fundamentals I.

ITSE 2309 – DATABASE PROGRAMMING

This course studies database development using database programming techniques emphasizing database structures, modeling, and database access. This course will transfer into certain baccalaureate programs.

COSC 2336 – PROGRAMMING FUNDAMENTALS III

Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees, and graphs), and algorithmic analysis. Prerequisite: COSC 1337 Programming Fundamentals II

ITSE 2302 – INTERMEDIATE WEB PROGRAMMING

Students will study the intermediate applications for web authoring. Topics may include server-side includes (SSI), Perl, HTML, Java applets, Javascript, and/or ASP. Prerequisite: ITSE 1311.

IMED 1316 – WEB DESIGN I

Instruction in web design and related graphic design issues including mark-up languages, web sites, and browsers.

CPMT 1380 – COOP ED - COMPUTER MAINTENANCE TECHNOLOGY/TECHNICIAN

An intermediate or advanced course with lecture and work-based instruction that helps students gain practical experience in the discipline, enhance skills, and integrate knowledge. Indirect supervision is provided by the work supervisor while the lecture is provided by the College faculty or by other individuals under the supervision of the educational institution. Cooperative education may be a paid or unpaid learning experience. The student, in cooperation with the work supervisor will develop a learning plan, apply the theory, concepts and skills involving specialized materials, tools, equipment, procedures, regulations, laws and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry. The student will demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry. Prerequisite: Completion of 12 credit hours or equivalent work experience.

Semester	Course	Credit Hours Contact Hours	Days	Times	Tuition (In/Out District, incl. test fee)
Year 1 - Fall	COSC 1301	3/64	MW	1:30-3:30	\$200 / \$250
	COSC 1336	3/64	TTH	1:30-3:30	
Year 1 – Spring	ITSW 1307 HY	3/96	MW	1:30-3:30	\$250 / \$300
	ITSE 1311 HY	3/96	TTH	1:30-3:30	
Year 2 – Fall	COSC 1337	3/64	MW	1:30-3:30	\$225 / \$275
	ITSE 2309 HY	3/96	TTH	1:30-3:30	
Year 2 – Spring	COSC 2336	3/64	MW	1:30-3:30	\$225 / \$275
	ITSE 2302 HY	3/96	TTH	1:30-3:30	

Students will be required to attend lab every Friday 1:30 – 3:30 p.m. for complete program.

Courses ending in HY will be taught hybrid (80 hours face to face and 16 hours online instruction).

Hybrid courses have an additional \$25 fee per course (**fee included in tuition cost listed above**).

TSI Assessment: Not needed for certificates.

Credentials: Marketable Skills Achievement Award – SQL Server Database Fundamentals

- Microsoft Technology Associate (MTA) SQL Server Database Fundamentals Certification Exam

COM Next Steps – Stackable Credentials:

- Programming Certificate – Level 1

Upon completion of these 2 additional courses: IMED 1316 & CPMT 1380