



Course Number and Title: ITN 160 Programming I

Campus Location:

Georgetown, Dover, Stanton, Wilmington

Effective Date:

2020-51

Prerequisite:

ENG 090 or ENG 091 or concurrent, MAT 010, SSC 100 or concurrent

Co-Requisites:

None

Course Credits and Hours:

3.00 credits

2.00 lecture hours/week

2.00 lab hours/week

Course Description:

This course provides students with an introduction to the documentation, design, and implementation of basic computer programming. Concepts include algorithm development, control structures, variables, input/output (both keyboard I/O and text file I/O), memory allocation, and debugging techniques of modern programming.

Required Text(s):

Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](https://www.dtcc.edu/bookstores) online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:

Access to high-speed Internet, USB drive (minimum 8 GB)

Schedule Type:

Classroom Course

Video Conferencing

Web Conferencing

Hybrid Course

Online Course

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Construct an effective computer program using appropriate data types. (CCC 2, 6; PGC 1, 4)
2. Translate logic into executable instructions using control structures. (CCC 2, 6; PGC 1, 4)
3. Apply the concept of modularization to construct a computer program. (CCC 2; PGC 1, 4)
4. Construct user-friendly input and output for effective user communication. (CCC 1,2; PGC 1, 4)
5. Apply debugging techniques to identify, analyze, and repair program errors. (CCC 2, 6; PGC 1, 4)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):

Upon completion of this course, the student will:

1. Construct an effective computer program using appropriate data types.
 1. Define, name, and manipulate memory allocation.
 2. Compare and contrast the different data types and their sizes.
 3. Select and apply appropriate variables to develop a computer program.
 4. Determine appropriate conversion between data types.
 5. Use string manipulation techniques to create a more effective program.
2. Translate logic into executable instructions using control structures of computer programs.
 1. Identify the steps to solve a real-world problem.
 2. Evaluate and validate logic developed to solve a real-world problem.
 3. Compare and contrast sequence, selection, and loop control structures.
 4. Select the appropriate control structure(s) based on a given condition.
 5. Compare and use variables in different scopes to develop an effective computer program.
 6. Document the purpose of program and individual functions using proper techniques.
3. Apply the concept of modularization to construct a computer program.
 1. Select and apply appropriate library modules to simplify a complicated program.
 2. Create and apply user-defined modules to simplify a complicated program.
 3. Demonstrate effective parameter passing and return values.
4. Construct user-friendly input and output for effective user communication.
 1. Discuss design-thinking principles for effective user interfaces.
 2. Compare and contrast different input and output techniques.
 3. Formulate proper user prompting for input.
 4. Analyze and evaluate user input and program output.
 5. Use conversion specifiers to read string input and format string output.
5. Apply debugging techniques to identify, analyze, and repair program errors.
 1. Identify and differentiate syntax, runtime, and logic errors.
 2. Analyze syntax, runtime, and logic errors.
 3. Use integrated development environment (IDE) tools to aid in the debugging process.
 4. Develop and implement solution(s) to solve programming errors.
 5. Evaluate the effectiveness of debugging techniques.

Evaluation Criteria/Policies:

Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

| | | | | |
|----|---|-----|---|---|
| 92 | - | 100 | = | A |
| 83 | - | 91 | = | B |
| 75 | - | 82 | = | C |
| 0 | - | 74 | = | F |

Students should refer to the [Student Handbook - https://www.dtcc.edu/handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):

1. Solve technology-related problems using critical thinking and troubleshooting skills.
2. Articulate the role of the technology professional in organizations to support the ethical use of information technology.
3. Apply fundamental security concepts and strategies for maintaining and securing information technology.
4. Read and interpret technical information and effectively communicate to a wide range of audiences using oral, print, and multimedia strategies.
5. Demonstrate the importance of lifelong learning that empowers personal and professional growth.

Disabilities Support Statement:

The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services - https://www.dtcc.edu/disabilitysupport](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.