



Course Number and Title: ITN 262 Programming III

Campus Location:

Georgetown, Dover, Stanton, Wilmington

Effective Date:

2020-51

Prerequisite:

ITN 261

Co-Requisites:

None

Course Credits and Hours:

3.00 credits

2.00 lecture hours/week

2.00 lab hours/week

Course Description:

This course explores advanced programming concepts such as stacks, queues, recursion, linked lists, trees, searching and sorting in order to write effective and efficient code for large-scale problems. Students model real-world scenarios by implementing various data structures within event-driven applications.

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.

Schedule Type:

Classroom Course

Video Conferencing

Web Conferencing

Hybrid Course

Online Course

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Differentiate among various types of data structures. (CCC 2, 5, 6; PGC 1, 3)
2. Create computer programs using various data structures. (CCC 2, 5, 6; PGC 1, 3, 4)
3. Implement various data structures for optimal use in real world scenarios. (CCC 2, 5, 6; PGC 1, 3, 4, 5)

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. Differentiate among various types of data structures.
 1. Describe types of data structures such as stacks, queues, recursion, and linked lists.
 2. Describe primitive and abstract data types.
 3. Explain fundamental computing algorithms of data structures such as binary search trees, searching, and sorting in computer programs.
 4. Compare and contrast how various types of data structures are used to construct computer programs.
2. Create computer programs using various data structures.
 1. Evaluate different data structures for optimal use in real world scenarios.
 2. Identify the steps to incorporate data structures in programs and applications.
 3. Illustrate the use of each data structure in real world applications.
 4. Create code to implement selected data structures in different situations.
3. Implement various data structures for optimal use in real world scenarios.
 1. Compare and contrast the performance of different data structures with various data sets.
 2. Demonstrate the performance of alternative implementations of data structures.
 3. Explain the costs and benefits in terms of time and memory storage of dynamic and static data structure implementations.
 4. Select and implement the appropriate data structure for a given set of problem specifications.

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.