# Information Technology
## SE 126: *Intermediate Programing Using Python*

## Course Information:

| SECTION | DAY 1 | | DAY2 | |
|---|---|---|---|---|
| **SE126.02** | M | 7:35A - 9:25A N203, | W | 7:45A - 11:15A N203 |
| **SE126.22** | M | 11:25A -11:15A N203, | T | 1:10P - 3:00P N245 |
| **SE126C.HS** | T | 4:46P - 7:25P N245, | R | 4:46P - 7:25P N245 |

**Instructor**: Katharine (Katie) Truchon     **Email**: kmtruchon@neit.edu     **Phone**: (401) 739-5000
**Office Location:** IT Department N240H
**Office Hours:** *See "Office Hours" in Canvas Course*

**Student Advisor**
Morgan Rayner, IT Associate Student Advisor
Email: mrayner@neit.edu
Phone: 401-467-7744 ext 3490

## Prerequisites
SE116

**Required Text**
*A Byte of Python*
This book is licensed under the Creative Commons Attribution-Share Alike 3.0 Unported license.

You can download the book from the web site   *https://www.gitbook.com/book/swaroopch/byte-of-python/details*

## Required Materials
- USB Drive
- Writing instrument (pen or pencil)
- Notebook
- Regular attendance and a good attitude

## Course description:
**Course description:** *2 Class Hours 4 Lab Hours 4 Quarter Credit Hours*
A study of the Python programming language will be used as the vehicle to introduce advanced programming concepts.  At the end of the course, students should be able to analyze problems and develop their solutions by applying advanced flowcharting, coding and programming techniques. Students should be able to design, develop, test and implement programs that involve nested conditional control structures, file handling, interactive processing, data editing, array processing, and sort and search algorithms.

## Course objectives/Assessment Measures
*Upon successful completion of the course, the student will be able to:*
- Analyze, design, code, test and document advanced modular programs
- Exhibit proficiency with file handling and array processing techniques

- ▪ Implement sort and search algorithms
- ▪ Develop and document programs
- ▪ Use flowcharting components such as constants, variables, expressions, loops, conditional statements, and logical operators

## Assessments of Outcomes

- ● ***Objective multiple-choice tests, essay questions and a midterm and final examination*** will be used to assess the student's ability to list, describe compare, recognize and identify appropriate concepts, tools and procedures described in the course objectives
- ● ***Programming assignments*** will be used to reinforce, demonstrate and practice concepts and procedures described in the course objectives.

## Instructional Strategies / Methodology

This course utilizes a variety of instructional strategies.  Theoretical content is provided through lectures and reading assignments. Programming assignments are used to complement the theory and encourage the development of skills in applying the course content.  Different learning styles are accommodated by offering lectures, readings, videos, hands-on activities, review and self-assessment.

## Grading:

| | |
|---|---|
| Programming Labs | 50% |
| Non-Lab Assignments | 20% |
| Midterm Exam | 15% |
| Final Exam | 15% |

# INSTRUCTOR POLICIES

## Evaluation and Grading Criteria:

- ● Exams and programming assignments will be announced during the semester. It is your responsibility to complete all assignments and exams.
- ● Your score for an assignment is based on the correctness of your solution as well as how well you adhere to good programming standards discussed in class.
- ● Completed programming assignments will consist of a copy of the program code, a sample of the output, and a flowchart.

## INSTRUCTOR POLICIES:

- ● Any part of this Syllabus is subject to change. Students in this class are expected to check the course Canvas web site regularly.
- ● Students in this class are expected to check their NEIT email regularly. Failure to do may result in missing important messages regarding this course.
- ● Extensions must be requested in writing, using the student's NEIT email address, before a due date and must include a timeframe of less than 7 days of when the assignment will be completed in order to be considered.

## Attendance Policies:

- ● Please be aware, students who are late or miss classes (and the accompanying work) may jeopardize their ability to pass the course. All students should plan to attend class regularly. It is the student's responsibility to make up (and schedule) any missed course work with the instructor.

● If a student is absent Final Exam a verifiable note explaining the absence will be required to schedule the missed test. The scheduled time for the make-up will be at the instructor's convenience.

## Lab Assignments:
● Labs are due on or before their assigned due dates.
● Students who are absent can digitally upload the assignment to the course.
● The assignments must be uploaded on or before the due date.
● Labs that are handed in late will be subject to a late penalty.  See Lab Make-Up Policy.

## Non-Lab Assignments:
● Out of class assignments are due on the assigned date.
● Students may email the assignment to the instructor before the due date.
● Out of class assignments will not be accepted late.

## Exams:
● The Midterm Exam will be a practical and take place on the second day of week 5.
● The Final Exam will be a practical and take place on the second class day of week 10.
● If a student is absent for either exams a verifiable note explaining the absence will be required to make-up the missed exam.
● Only handwritten notes and returned labs may be used as resources for the both exams.

## Labs Make-Up Policy
● Week #5 marks mid-quarter. Any missed labs from weeks #1- #4 needs to be submitted at the end of the second class of week #5 or a zero will be recorded for the missing grades.
● Week #10 is the last week of the course. Any outstanding labs from weeks #6 - #9 needs to be submitted by the end of the second class of week #9 or a zero will be recorded for the missing grades. No labs will be accepted after the end of the second class day Week 9.
● All late labs are subject to a 40 point penalty unless previously discussed with the instructor.

## Tardiness:
Attending class late can also adversely affect your grade based on participation, handing in assignments, and getting the latest information.  Note that I typically start class by answering student questions/concerns pertaining to class materials and assignments.  I usually give the most pertinent information about the lecture, assignments, and testing at the beginning of class.  You are responsible to find out what you missed from classmates if you arrive late.

## COLLEGE Policies
**Academic Honesty Policy:**
Any project, paper, or examination is expected to be the student's own work, in the student's own words. Willful academic dishonesty (including but not limited to copying another student's work or allowing one's own work to be copied; using notes or books during an examination without the instructor's advance permission; presenting information or images copied from a book, journal, or online source as one's own) will not be tolerated.
 **Other Policies:**

- Each student is responsible for accessing the http://wcb.neit.edu/shandbook/syllabuspolicies.pdf web site and becoming familiar with all academic policies. Students should be familiar with the following policies:
- Course Registration – Add and Drop Policy
- Challenge Exams
- Portfolio Review and Assessment Policy
- Student Computing and Networking Use Policy
- Electronic Communication Device Acceptable Use Policy

# ACADEMIC SUPPORT

Academic support services are available through the Academic Skills Center, Student Support Services, and the Library as well as in the department. See the tutoring schedule.

## STUDENT CONCERNS

All student concerns should be addressed to:
>Erik Van Renselaar
>IT Department Chair
>Email: evanrenselaar@neit.edu

# SE126 COURSE SCHEDULE

| Week | Topic | In-Class Activity | Outside Class Activity | Due Date |
|------|-------|-------------------|------------------------|----------|
| One | Course introduction and syllabus. Review of: Variables Loops If statements | Students will work in groups and develop a solution to a problem and develop the Python code. Students will save their work to their Repository on GitHub | Programming Assignment #1 Video on Python Functions GitHub Account Creation | End of Week 1 |
| Two | Sequential file handling techniques. Will also allow for more review on Variables Loops If statements | Practice assignment will be a reference for programming assignment #2 Students will save their work to their Repository on GitHub | Programming Assignment #2 Selected readings from the textbook and/or the Internet | End of Week 2 |

| Three | Sequential file handling techniques continued | Go over reading assignment / group discussion<br><br>Practice assignment will be a reference for programming assignment #2<br>Students will save their work to their Repository on GitHub | Programming Assignment #3<br><br>Selected readings from the textbook and/or the Internet on sequential file handling. | End of Week 3 |
|---|---|---|---|---|
| Four | Lists and Single Dimension Array processing and sequential search algorithm | Students will work in groups on the in-class activity.<br><br>Students will save their work to their Repository on GitHub | Programming Assignment #4<br><br>Selected readings from the textbook and/or the Internet on array processing and sequential search. | End of Week 4 |
| Five | **Midterm Exam will be given last class day of the week**<br><br>Last week to hand in late labs. | Any outstanding assignments from weeks #1 - #4 are due at the end of class on Wednesday.<br><br>Students will save their work to their Repository on GitHub | Programming Assignment #5 | End of Week 6 |
| Six | Bubble Sort Algorithm | Class activity where students will simulate the Bubble Sort<br><br>Students will save their work to their Repository on GitHub | Programming Assignment #5 | End of Week 6 |
| Seven | Bubble Sort algorithm and Binary Search | Practice assignment will be a reference for programming assignment #6<br>Students will save their work to their Repository on GitHub | Programming Assignment #6<br><br>Reading assignment on the Bubble Sort | End of Week 7 |

| Eight | Duplicate arrays, Index arrays and Double Subscripted variables | Programming Assignment #7<br><br>Students will save their work to their Repository on GitHub | Programming Assignment #7 | End of Week 8 |
|---|---|---|---|---|
| Nine | Menu Driven programs | Any outstanding assignments from weeks #5 - #7 are due at the end of class on Wednesday. | Programming Assignment #7<br><br>Prepare for Final Exam | End of Week 9 |
| Ten | **Final Exam<br>will be given the last class day of the week.** | | | |

## *Caveat*

NEIT reserves the right to change the above schedules and requirements without advance notice.