

Rowan College at Burlington County

Science, Technology, Engineering, and Mathematics Division

Course Title: Advanced Programming Workshop I

Course Code: CSE 222 750

Prerequisite: CSE 112 or CSE 135

Credits: 2

Contact hours: 4 Lab

Class Time: Mon/Wed 3:00 – 4:50

Location: TEC 306

Instructor: Chris Simber

email: csimber@rcbc.edu

Phone: x 2090

Office: TEC – 211G

Office hours: M/W 11:00 – 12:00, T/TH 3:00 – 4:00
Others by appointment

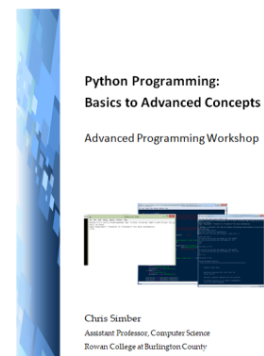
SECTION 1:

Course Description: This is an advanced course in programming languages, integrated development environments (IDE's), application programming interfaces (API's), software packages, libraries, and programming technologies. The workshop nature of the course requires hands-on solutions in a language such as Python, including requirements definition & decomposition, IPO development, and algorithm design, development, and implementation.

Flash Drive: A flash drive is **recommended** for assignments.

Web-enhanced: This is a web-enhanced course utilizing **Blackboard**.

Provided Text: **Python Programming: Basics to Advanced Concepts**
Chris Simber, OER Text



Course Learning Outcomes: Upon completion of this course, students will be able to:

- Perform abstract and requirements decomposition, IPO and algorithm development from requirements and develop a complex software solution in a programming language.
- Develop, present, and demonstrate a complex software solution in a programming language utilizing an Integrated Development Environment (IDE) to write, compile, and test programs.
- Analyze medium to high complexity operations and effectively break down problems into sub-problems utilizing logical thinking and engineering ethics to develop efficient algorithms and the programmed solutions.
- Expand upon previously learned programming concepts to write programs using advanced concepts and operations in a collaborative environment.
- Design and implement classes and methods for procedural abstraction, using code libraries and advanced programming language features to perform specific tasks.

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General Education Outcomes:

- Written and Oral Communication: Communication
 - Students will logically and persuasively support their points of view or findings
- Technology Competency or Information Literacy: Technology
 - Students will demonstrate the skills required to find, evaluate, and apply information to solve a problem

Core Course Content:

- Abstract Decomposition and Requirements Definition
- Input, Processing, and Output (IPO) generation
- Algorithm Design and Development, and ethical standards
- Integrated Development Environments
- Advanced computer programming
- Data types and Decision Structures
- Functions, Files, and Exceptions
- Integrated Object Oriented programming
- GUI Programming

SECTION 2:

Course and Classroom Policies:

Expectations: Students are expected to attend class prepared, having read the text, and to complete and submit assignments on or before the due date, collaborate with other students in the course, and to participate in discussions. Students are expected to conduct themselves in a professional manner in forums.

Required email: Students are assigned an email account by the college (*name@mymail.rcbc.edu*). Students are to use this account to correspond with the instructor, and submit assignments.

Criteria for Grade Determination:

Grading: Grades will be based on design, operation, documentation, and meeting the requirements of the programming project. There are six (6) Milestones consisting of documentation with code submissions, and two (2) presentations of the documentation, code, demonstration of the running program at Milestones 3 and 6. Presentations consist of a brief review of added functionality since the previous Milestone using the Design Document and comments with respect to development experiences (issue and obstacle experiences and resolutions), and demonstrating the running program and Milestone. The workshop nature of the course requires research and experimentation with the language to design and develop the solution. Collaboration is encouraged.

Late assignment submissions will receive partial credit, but will **not** be accepted more than one (1) week late.

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Assessment Methods:

Letter Grades

Milestone

#1 – Design Document w/ code	15%	A	= 90 - 100
#2 – Design Document w/ code	15%	B+	= 85 - 89
#3 – Design Document w/ code & Demo	20%	B	= 80 - 84
#4 – Design Document w/ code	15%	C+	= 75 - 79
#5 – Design Document w/ code	15%	C	= 70 - 74
#6 – Final Program Demonstration	10%	D	= 60 - 69
<u>#6 – Final Design Document w/ code</u>	<u>10%</u>	F	= Below 60
100%			

Course Outline/Schedule (tentative):

Each week, milestone and language specific programming topics will be discussed.

<u>Week</u>	<u>Application/Chapter</u>	
1	Introduction to the Course Python and Project Development (Chapter 1)	
2	Python particulars (Chapter 2) Getting Started in Python, Project Selection, IDLE IDE (Chapter 3) Conditionals, Loops, and Functions (Chapter 4)	
3	GUIs (Chapter 5), Launching the Main Window, and the Main Loop, and Problem Solving	
4	Milestone #1 requirements, Python Widgets, GUIs, Grid Layouts	Milestone #1
5	File Handling and Exceptions (Chapters 6) Account Creation example, Multi-window & Design (Chapter 7)	
6	Data Design (Chapter 8), Strings & Lists (Chapter 9) Files to Lists	Milestone #2
7	Remove/Hide Widgets and StringVar (Chapter 10), Main GUI Interface (Chapter 11)	
8	Menus and Button Groups (Chapter 12), and Modifying Main	Milestone #3
9	Presentations/Demonstrations/ Collaborative Workshops	
10	Date & Time (Chapter 13), Displaying Data (Chapter 14)	Milestone #4
11	Modules and Matplotlib (Chapter 15), the PIP Installer	
12	File Dialogs, HTML, and Animation (Chapter 16)	Milestone #5
13	Advanced Programming Elements/Collaborative Workshop	
14	Final Demonstrations/Presentation	
15	Final Design Document Submissions	Milestone #6

* Course Outline is subject to change

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SECTION 3:

College Policies:

In order for students to know their rights and responsibilities, all students are expected to review and adhere to all regulations and policies as listed in the College Catalog and Handbook. The current college catalog and student handbook are important documents for understanding your rights and responsibilities as a student in the Rowan College at Burlington County (RCBC) classroom. Please read your catalog and handbook as they supplement this syllabus, and can be accessed at rcbc.edu/publications. Important policies and regulations include, but are not limited, to the following:

- College Attendance Policy
 - Grading Standards
 - Withdraw (W) and Incomplete Grades (I)
 - Withdrawal date for this semester – Academic Calendar
 - Student Code of Conduct
 - Academic Dishonesty/Plagiarism and Civility
 - Use of Communication and Information Technology
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- **Academic Integrity Code**
 - **Plagiarism** – Plagiarism includes copying or paraphrasing another's words, ideas, or facts without crediting the source; submitting a paper written by someone else, either in whole or in part, as one's own work; or submitting work previously submitted for another course or instructor. Plagiarism on any assignment will result in failure for that assignment and may result in further disciplinary action, including but not limited to failure for the course. Please refer to the Student Handbook for additional information regarding plagiarism and College regulations.
 - **Texting, Cell phones, and Laptops** – should be turned off in class or the ringer must be turned to silent. No texting is allowed in class during instruction time.
 - **Internet and Other Computer Use** – all students are required to abide by established RCBC computer and Internet use procedures and regulations. Willful damage to or misuse of RCBC computers and/or software will be considered a violation of the RCBC Student Code of Conduct. Criminal prosecution may also result. This applies to IPODS, games or electronics of any kind, instant messenger, and social media.

Student Conduct Code - We shall abide by the expectations outlined in the Student Handbook (page 106-112). RCBC students are accountable according to the standards established in this policy. <http://www.rcbc.edu/PDFFiles/publications/1314Handbook.pdf>

Tutoring - RCBC offers free tutoring for all currently enrolled students. For more information regarding the Tutoring Center, please call extension 1495 at (609) 894-9311 or visit the Tutoring Center website at : <http://www.rcbc.edu/pages/218.asp>

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Academic Advisement – RCBC provides Academic advising and free referral services to all students through the office of Academic Advising. For more information, visit the drop in center in Laurel Hall. Call extension 7337 at (856) 222-9311 or visit the website at:
<http://www.rcbc.edu/pages/206.asp>

Library Resources – The RCBC Library provides access to the information resources you need to succeed in your studies, including books, journals and databases. Library Information Specialists provide support in finding and utilizing these resources. Library services are available at the Student Success Center and online **<http://staff.rcbc.edu/library>**. Online services include IM Chat, text, and there is phone support during regular hours. There is online access to a wide variety of journals and databases 24/7/365 from both on and off campus. Library hours are posted in the library and on the library website.

Office of Student Support and Disability Services: RCBC welcomes students with disabilities into the college's educational programs. Access to accommodations and support services for students with learning and other disabilities is facilitated by staff in the Office of Student Support (OSS). To receive accommodations, a student must contact the OSS, self-identify as having a disability, provide appropriate documentation, and participate in an intake appointment. If the documentation supports the request for reasonable accommodations, the OSS will provide the student with an Accommodation Plan to give to instructors. For additional information, please contact the Office of Student Support at 609-894-9311, ext. 1208, disabilityservices@rcbc.edu, or rcbc.edu/studentsupport.

Educational Technology Statement: RCBC advocates the use of technology to enhance instruction. Students should assume that classroom and online technology will be used throughout their coursework at RCBC, as it will most certainly be used in their future education and careers. The College provides on-campus facilities for the convenience of the RCBC community. Various college departments, including the Office of Information Technology and the Office of Distance Education, provide technology training and assistance to faculty and students.

Student Success Services: RCBC offers a variety of free services for its students including those listed below. Descriptions of these services, as well as many others, can be found in the College Catalog and Handbook and on the RCBC website at rcbc.edu/publications.

- Academic Advisement (rcbc.edu/advising)
- Career Services (rcbc.edu/careers)
- Educational Opportunity Fund (EOF) (rcbc.edu/eof)
- Financial Aid (rcbc.edu/financialaid)
- International Students Office (rcbc.edu/international)
- Library/Integrated Learning Resource Center (ILRC) (rcbc.edu/library)
- Office of Veteran Services (rcbc.edu/vets)
- Student Support Counseling (rcbc.edu/cpit)
- Tutoring Center (rcbc.edu/tutoring)
- Test Center (rcbc.edu/testcenter)
- Transfer Services (rcbc.edu/transfer)