Rowan College at Burlington County

Science, Technology, Engineering, and Mathematics Division

Course Title: Advanced Programming Workshop II **Course Code**: CSE 223 – 170

Class Time: Mon/Wed 10:00 – 11:50 **Location:** DLC

Prerequisites: CSE 112 or CSE 135 **Credits**: 2

Instructor: Chris Simber **email:** csimber@rcbc.edu **Phone:** x 2090

Office: TEC – 211G **Office hours**: by Appointment 2:00-3:00
Schedule via email for WebEx

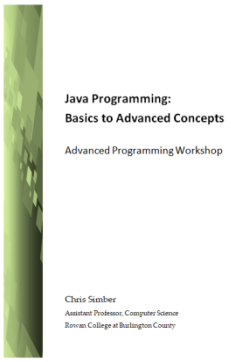
SECTION 1:

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 high-level language, including requirements definition & decomposition, IPO development, and algorithm design, development, and implementation.

Web-enhanced: This is an online course and will utilize **Blackboard**.

Text Provided: Java Programming: Basic to Advanced Concepts

Required Materials: Access to a computer with a hard drive, capable of installing and running the Eclipse IDE, JVM, JDK, and saving files



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).
- 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, and use code libraries and advanced programming language features in programs to perform specific tasks.

**Course Learning Outcomes map to Program Learning Outcomes for AS.CSE and AS.INF*

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 engineering ethics
- Integrated Development Environments
- Advanced 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 sessions, be prepared, complete assignments and submit them on or before the due date, and to conduct themselves in a professional manner in class sessions and discussion forums.

Class Attendance when a course is not meeting face-to-face is determined as logging into Blackboard and RCBC email on a daily basis.

Required email: Students are assigned an email account by the college (*name@mymail.rcbc.edu*), and 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.

Design Document: A Design Document (Word/pdf file) is required and will be submitted at all milestones for grading and as a final submission. It will include step-by-step implementation descriptions, explanations, and screen captures of functionality in the program (see the sample file). The Design Document will contain a section for each Milestone and will include all code at the end of the document. The quality of the document shall be professional enough to submit as a work sample to a prospective employer.

Project Program: the project is complex and development shall be modularized through the use of methods, classes and multiple files within the project package. The project interfaces and operations will be high quality. Interfaces shall have components spaced and aligned appropriately, and include graphics, window titles, and appropriate components. The program shall loop when certain windows are closed or a Cancel button is clicked, so that it does not have to be restarted by the user. Keyboard entry and file data will be validated with error handling, and the program will continue. The program should be user friendly and have icons, images, and color as appropriate. The completed project should be professional enough to submit as a work sample to a prospective employer.

Face-to-Face Instruction: Two (2) in-class presentations are required during the semester at Milestones 3 and 6 (the final demonstration). 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 current Milestone.

Online/Virtual Instruction: The Design Document will carry additional weight and will be critiqued to a greater degree. Screen captures and explanations should cover every aspect of the design and operations of the program as well as project progress, and will be included in grading. The Design Document should be considered a deliverable to a prospective employer.

The workshop nature of the course requires research and experimentation with the language to design and develop the solution. Collaboration is encouraged.

Late submissions will receive a **penalty of five (3) points per day** after the first day, and will **not** be accepted **more than one (1) week late**.

Assessment Methods:

Milestone

#1 – Design Document	20%
#2 – Design Document	20%
#3 – Design Document *	20%
#4 – Design Document	20%
#5 – Final Design Document *	20%
	100%

Letter Grades

A	= 90 - 100
B+	= 85 - 89
B	= 80 - 84
C+	= 75 - 79
C	= 70 - 74
D	= 60 - 69
F	= Below 60

* For face-to-face instruction, Milestones 3 and 5 include a presentation of the Design Document and a demonstration of the running program as 50% of the grade for that Milestone.

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

Course Outline/Schedule (tentative):

Week	Application/Chapter	
1	Introduction to the Course, Java (Chapter 1) Eclipse – Getting Started (Chapter 2)	
2	Java Programming (Chapter 3) Decisions, Loops, and Methods (Chapter 4) Project Choices	
3	Interface Design and Development (Chapter 5) Swing Components and Action Listeners (Chapter 5-1) Milestone #1 Requirements	Milestone #1
4	File Handling (Chapter 6) Strings and ArrayLists (Chapter 7)	
5	Multi-win Programming Milestone #2 Requirements	Milestone #2
6	Main GUI Design and Components (Chapter 8) Problem Solving	
7	Buttons and Action Listeners, and Controls	
8	Spring Break	
9	Main GUI Design and Data Display (Chapter 9) Milestone #3 Requirements	Milestone #3**
10	A Second Window and JFileChooser	
11	Data Handling, Parsing, and StringBuilder	
12	Advanced Programming Elements Milestone #4 Requirements	Milestone #4
13	Date, Time, Sound, and More (Chapter 10)	
14	Advanced Programming Elements	
15	Advanced Programming Elements	Milestone #5**

* Course Outline is subject to change

**For face-to-face instruction, Milestones 3 and 5 require presentation of the Design Document and demonstration of the running program. For virtual instruction, the Design Document will be critiqued to a greater degree.

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 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

Weather Closure:

In the event that the College is closed due to weather, students should access the course Blackboard shell for announcements and course material.

- **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/conduct**

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/tutoring**

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Academic Advisement – RCBC provides Academic advising and free referral services to all students through the office of Academic Advising. Call extension 7337 at (856) 222-9311 or visit the website at: **http://www.rcbc.edu/advising**

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 Mount Laurel campus at the Student Success Center and online at http://www.rcbc.edu/library. Online services include IM Chat, text, and phone support during regular hours and access to a wide variety of journals and databases 24/7/365 from both on and off campus. Library hours are posted in the libraries 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 http://www.rcbc.edu/studentsupport.

Educational Technology Statement: Rowan College at Burlington County (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)