Rowan College at Burlington County

Science, Technology, Engineering, Math Division

Course Code: CSE 225-500 **Course Title:** Computer Organization **Credits**: 3

Prerequisites: CSE 210 **Location:** TEC 203 **Time**: Tues 5:00 – 07:50

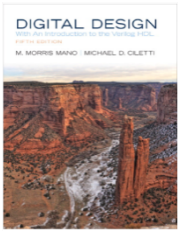
Instructor: Chris Simber **email:** csimber@rcbc.edu **Phone:** x 2090

Office: TEC – 211G **Office hours**: Mon 10:00 – 12:00, 1:00 – 2:00

SECTION 1:

Course Description: This course introduces computer system structure, operation, and organization. It emphasizes the representation of information, computer system logic, circuit analysis and design, processor architecture, and input/output.

Web-enhanced: This is a web-enhanced course and will utilize **Blackboard**.



Required Text: Digital Design, 5th edition, Mano and Ciletti, Pearson,
ISBN: 0-13-277420-8

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

- Perform arithmetic in different number systems and convert between different bases
- Utilize information representation and text codes in digital systems
- Implement logic circuit designs from Boolean expressions, truth tables, and standard forms
- Develop K-Maps and employ map simplification techniques
- Analyze and design combinational circuits and sequential circuits
- Explain the design and operation of registers, counters, and memory devices
- Incorporate binary multipliers in control logic design

General Education Outcomes:

- Written and Oral Communication: Communication
  - Students will communicate meaningfully with a chosen audience while demonstrating critical thought
- Quantitative Knowledge and Skills: Mathematics
  - Students will logically solve problems using the appropriate mathematical technique.

Core Course Content:

- Information representation
- Number systems
- Boolean algebra and Logic gates
- Circuit simplification using maps
- Logic circuit analysis and design procedures
- Combinational circuit analysis and design
- Sequential circuit design
- Registers and counters
- Memory circuits and devices
- Register transfer and data paths
- Sequencing and control logic

SECTION 2:

Course and Classroom Policies:

Expectations: students are expected to attend class, be prepared having read the text chapter beforehand, complete assignments, and to participate in discussions. Students are expected to complete assignments during the week assigned. Students are expected to conduct themselves in a professional manner.

Attendance: The course meets for one session per week making attendance essential for understanding the material. Every effort should be made to attend classes.

Required email: Students are assigned an email account by the college (*firstname_lastname@mymail.bcc.edu*). Students are expected to use this account to correspond with the instructor, and to include CSE 225 in the subject line.

Criteria for Grade Determination:

Grading: Grades for the course will be based on assignments and three exams. Text problems will be assigned for each chapter that will emphasize the chapter concepts and are due the following week. Completing assignments is essential to understanding the material, and being prepared for the exams. Makeup tests require a valid excuse and can result in loss of grade points. In addition, class participation and attendance will be considered.

Assessment Methods:

Assignments	10%
Exam 1	30%
Exam 2	30%
Exam 3	30%
Total	100%

Letter Grades

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

F = Below 60

Rowan College at Burlington County

Course Outline/Schedule*

Week	Material	Topic
1	Chapter 1	Digital Systems, Binary Numbers, Info. Representation
2	Chapter 2	Boolean algebra and Logic Gates
3	Chapter 3	Gate-Level Minimization, Simplification, K-maps
4	Chapter 3 (cont'd)	NAND and NOR Implementation
5	Review / Exam 1	Chapters 1, 2, 3, 4 to 4.4
6	Chapter 4.5	Combinational Logic, Analysis and Design Procedures
7	Chapter 4 (cont'd)	Adders, Decoders, and Multiplexers
8	Chapter 5	Sequential Circuits, Latches, Flip-Flops
9	Chapter 5 (cont'd)	Sequential Circuit Design
10	Chapter 6	Registers and Counters
11	Review / Exam 2	Chapters 4, 5, and 6
12	Chapter 7	Memory Circuits, Programmable Logic Devices
13	Chapter 8 (8.1 – 8.5)	Register Transfer, ASM Design
14	Chapter 8 (8.7 – 8.10)	Sequential Binary Multiplier, Control Logic
15	Exam 3	

** The course outline is subject to change*

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 BCC 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 & X)
  - Withdrawal date for this semester – Academic Calendar
- Student Code of Conduct
  - Academic Dishonesty/Plagiarism and Civility
- Use of Communication and Information Technology

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**

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 centers at the Lewis Parker Center (Pemberton Campus) or Laurel Hall (Mt. Laurel Campus). Call extension 7337 at (609) 894-9311 or (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 Pemberton and Mount Laurel campuses and online. In Pemberton you can visit the Library located in the William K. McDaniel Integrated Learning Resource Center (ILRC), in Mt. Laurel at the Technology and Engineering Center (TEC) and online at **http://staff.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 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 .

Rowan College at Burlington County

- 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)