

Syllabus

Course Number: MT320

Course Title: Discrete Mathematics

Course Description:

Introduces mathematical tools used by computer scientists with an emphasis on developing problem solving abilities. Topics include machine logic, set theory, Boolean algebra, mathematical induction, and data structures.

Prerequisite Courses:

None

Course Outcomes:

Upon completion of this course, learners should be able to:

- Use the properties of formal logic to assess the truth of logical statements
- Illustrate the concept of a function using sets
- Describe the complexity of an algorithm
- Explain the relationship between induction and recursion
- Compute permutations and combinations and explain their meanings
- Describe the types of problems that can be modeled using graphs and trees

Course Materials:

Required Texts:

Discrete Mathematics and its Applications. 7th Edition, McGraw-Hill. A MathConnect Access code is required. If using financial aid to purchase access, be sure to use the bookstore.

Access can be purchased directly from McGraw Hill when you sign up for the course.

Option 1 (Only e-text and MathConnect Access):

Connect 1 Semester Connect Access Code: ISBN: 978-0077353520 (the \$107.25 ‘used’ option from the bookstore is the correct one. Ignore the ‘new’ option)

Option 2 (e-text, MathConnect Access and Loose Leaf Binder Book)

Loose Leaf + 1 Semester Connect Access Code ISBN: 978-1260211177

Optional Materials:

(Hard Copy) Rosen, K. H. (2012) Discrete Mathematics and its Applications. New York: McGraw-Hill. 7th Edition. ISBN-13: 978-0073383095.

Course Assignments and Activities:

| | Topics | Readings | Activities Assignments and Associated Points |
|---|--|--------------------------------------|---|
| 1 | Logic | Sections 1.1, 1.2, 1.3, 1.4, and 1.5 | MathConnect Week 1 - Homework 100pts Discussion 20pts |
| 2 | Logic and Proofs | Sections 1.6, 1.7, and 1.8 | MathConnect Week 2 - Homework 100pts Discussion 20pts |
| 3 | Sets, Functions, Sequences, and Series | Sections 2.1, 2.2, 2.3, and 2.4 | MathConnect Week 3 - Homework 100pts Discussion 20pts |
| 4 | Algorithms | Sections 3.1, 3.2, and 3.3 | MathConnect Week 4 - Homework 100pts Discussion 20pts MathConnect MidTerm Exam 100pts |
| 5 | Induction and Recursion | Sections 5.1, 5.2, 5.3, and 5.4 | MathConnect Week 5 - Homework 100pts Discussion 20pts |
| 6 | Counting | Sections 6.1, 6.2, and 6.3 | MathConnect Week 6 - Homework 100pts Discussion 20pts |
| 7 | Graphs | Sections 10.1, 10.2, 10.3, and 10.4 | MathConnect Week 7 - Homework 100pts Discussion 20pts |
| 8 | Trees | Sections 11.1, 11.2, and 11.3 | MathConnect Week 8 - Homework 100pts Discussion 20pts MathConnect Final Exam 100pts |
| | | | Maximum Points Possible: 1160 |

Course Policies and Procedures:

The course instructor will inform you of the McGraw Hill MathConnect policies for the homeworks and exams.



CC&IS Grading Scale

| Letter Grade | Percentage | Grade Point |
|--------------|--------------------|-------------|
| A | 93 to 100 | 4.00 |
| A– | 90 to less than 93 | 3.67 |
| B+ | 87 to less than 90 | 3.33 |
| B | 83 to less than 87 | 3.00 |
| B– | 80 to less than 83 | 2.67 |
| C+ | 77 to less than 80 | 2.33 |
| C | 73 to less than 77 | 2.00 |
| C– | 70 to less than 73 | 1.67 |
| D+ | 67 to less than 70 | 1.33 |
| D | 63 to less than 67 | 1.00 |
| D- | 60 to less than 63 | .67 |
| F | Less than 60 | 0 |

Additional information about grading can be found in the latest edition of the University Catalog, available at <http://www.regis.edu/Academics/Course%20Catalog.aspx>.

CC&IS Policies and Procedures

Each of the following CC&IS Policies & Procedures is incorporated here by reference. Students are expected to review this information each term, and agree to the policies and procedures as identified here and specified in the latest edition of the University Catalog, available at <http://www.regis.edu/Academics/Course%20Catalog.aspx> or at the link provided.

- The CC&IS Academic Integrity Policy.
- The Student Honor Code and Student Standards of Conduct.
- Incomplete Grade Policy, Pass / No Pass Grades, Grade Reports.
- The Information Privacy policy and FERPA. For more information regarding FERPA, visit the [U.S. Department of Education](http://www.ed.gov).
- The HIPAA policies for protected health information. The complete Regis University HIPAA Privacy & Security policy can be found here: <http://www.regis.edu/About-Regis-University/University-Offices-and-Services/Auxiliary-Business/HIPAA.aspx>.
- The Human Subjects Institutional Review Board (IRB) procedures. More information about the IRB and its processes can be found here: <http://regis.edu/Academics/Academic-Grants/Proposals/Regis-Information/IRB.aspx>.

The CC&IS Policies & Procedures Syllabus Addendum summarizes additional important policies including, Diversity, Equal Access, Disability Services, and Attendance & Participation that apply to every course offered by the College of Computer & Information Sciences at Regis University. A copy of the CC&IS Policies & Procedures Syllabus Addendum can be found here: <https://in2.regis.edu/sites/ccis/policies/Repository/CCIS%20Syllabus%20Addendum.docx>.