Discrete Mathematics I – MATH – 2305.021/.022
Department of Mathematics and Statistics
Spring 2019

A. COURSE INFORMATION
Course number/section: MATH – 2305.021/.022
Class meeting time: TR 11:00 am – 12:15 pm
Class location: IH - 157
Course Website: bb9.tamucc.edu

B. INSTRUCTOR INFORMATION
Instructor: Lane Cosper
Office location: CI 314
Office hours: Monday: 9:00 am -11:00 am
Tuesday: 1:00 pm - 2:00 pm
Wednesday: 10:00 am - 12:00 noon
Telephone: N/A
E-mail: lane.cosper@tamucc.edu
Appointments: Additional times available by appointment – send e-mail

C. COURSE DESCRIPTION
Catalog Course Description
An introduction to topics in discrete mathematics with an emphasis on applications in mathematics and computer Science. Topics include formal logic, graphs, trees and related algorithms, and combinatorics and discrete probability.

D. PREREQUISITES AND COREQUISITES
Prerequisites
MATH 1314 and 1316, or MATH 2312, or placement beyond MATH 2312

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES
Required Textbook(s)


F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what
students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. Demonstrate knowledge of elementary formal logic.
2. Apply knowledge of general-purpose proof methods, including direct proof, proof by contradiction, and mathematical induction to construct or understand elementary proofs in discrete mathematics.
3. Demonstrate knowledge of fundamental properties of graphs and trees.
4. Apply elementary combinatorial methods to the solution of counting and discrete probability problems.
5. Exhibit knowledge of other topics to include (as time permits) the asymptotic functional notations $O$, $\Theta$, $\Omega$, and, sequences, and relations on sets.

G. INSTRUCTIONAL METHODS AND ACTIVITIES

The instructional method is a combination of lectures and student activities. Students are expected to participate through in-class activities, preparation for class meetings, and homework.

H. MAJOR COURSE REQUIREMENTS AND GRADING

<table>
<thead>
<tr>
<th>I. ACTIVITY</th>
<th>% of FINAL GRADE</th>
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</thead>
<tbody>
<tr>
<td>Exams</td>
<td>45%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Homework</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20%</td>
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<table>
<thead>
<tr>
<th>LETTER GRADE</th>
<th>RANGE OF GRADE %</th>
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<tbody>
<tr>
<td>A</td>
<td>100%-90.00%</td>
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<tr>
<td>B</td>
<td>89.99%-80.00%</td>
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<tr>
<td>C</td>
<td>79.99%-70.00%</td>
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<tr>
<td>D</td>
<td>69.99%-60.00%</td>
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<tr>
<td>F</td>
<td>59.99% and below</td>
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Exams (45%)
There will be 4 exams, which will be given in class. A calculator is allowed. Exam dates will be announced at least on week in advance, but a tentative exam schedule is given. If you miss an exam for any reason, the score on that exam is 0. The score from the final exam can replace one low score if it will be to the advantage of the student. Partial credit is given on the exam. Exam rules are NO CELLPHONE, NO TALKING, NO OUTSIDE HELP, NO NOTES, NO COMPUTER, and NO CHEATING. Any infraction on these rules will result in a 0%, and will be reported appropriately. I will review proper test procedures during class.

Quizzes (15%)
There will weekly quizzes throughout the semester given as mastery assessments. The quizzes will be done in class usually during the first 15 minutes of class. Quizzes follow the same rules as exam.

Homework (20%)
Homework will be assigned at the beginning of each week. Homework will be due the following week. I will provide a detailed schedule of when the homework is due. All work should be shown on the homework in order to receive full credit.

Final Exam (20%)
The Final Exam is comprehensive, and follows normal exam rules. The final exam can also be used to replace one low score if it will be to the advantage of the student. The final exam is currently scheduled for Friday, May 3, from 1:45-4:15 pm.

J. COURSE CONTENT/SCHEDULE

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
<th>ASSIGNMENT(s) ASSIGNED</th>
<th>ASSIGNMENTS DUE</th>
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<tbody>
<tr>
<td>T 1/15</td>
<td>Intro, 1.1</td>
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<tr>
<td>R 1/17</td>
<td>1.2</td>
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<tr>
<td>T 1/22</td>
<td>1.3</td>
<td></td>
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<tr>
<td>R 1/24</td>
<td>2.1</td>
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<tr>
<td>T 1/29</td>
<td>2.2</td>
<td></td>
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<tr>
<td>R 1/31</td>
<td>2.3</td>
<td></td>
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<tr>
<td>T 2/5</td>
<td>Review</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R 2/7</td>
<td>Exam 1</td>
<td></td>
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<tr>
<td>T 2/12</td>
<td>3.1, 3.2</td>
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<tr>
<td>R 2/14</td>
<td>3.2, 3.3</td>
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<tr>
<td>T 2/19</td>
<td>3.4, 4.1</td>
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<tr>
<td>R 2/21</td>
<td>4.1, 4.2</td>
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<tr>
<td>T 2/26</td>
<td>4.3, 4.6</td>
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<tr>
<td>R 2/28</td>
<td>4.6</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

K. COURSE POLICIES

Attendance/Tardiness
Attendance will be taken, but an attendance grade will not be taken. If you arrive tardy please enter the room quietly and quickly find your seat.

Late Work and Make-up Exams
No late homework or quizzes can be made up. If you miss an exam, the final exam can replace one low score on an exam.

Extra Credit
There is no extra credit in this class.

Cell Phone Use
Please keep all cell phones put away and silent during class. If cell phones become an
issue I will start deducting 1% off of the student whose phone goes off each time class is disrupted.

**Laptop Use**
Laptops are allowed if the student is taking notes. If laptops are an issue the student’s permission will be revoked.

**Food in Class**
No distracting and no noisy food will be allowed, and the student must clean up after themselves.

**Missed Exam**
If you miss an exam for any reason, the score on that exam is 0. The score from the final exam can replace one low score if it will be to the advantage of the student.

**Participation**
Participation, just like attendance, will not be graded, but is highly encouraged.

**Extensions**
If an extension is requested and I feel it is appropriate the final day I will accept any Assignment is 5/2. If an extension is given it will be announced via the University’s e-mail.

**Contacting the Professor**
All e-mail communications with the professor should be done so with the student’s University email. The reason for this is the spam filter in the e-mail system will often filter out other e-mail addresses.

L. **COLLEGE AND UNIVERSITY POLICIES**

- **Academic Integrity (University)**
  University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

- **Classroom/Professional Behavior**
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under
Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Statement of Civility**
  Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

- **Deadline for Dropping a Course with a Grade of W (University)**
  I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. *Please consult with your academic advisor, the Financial Aid Office, and me, before you decide to drop this course.* Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.
• **Disability Services**  
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

http://disabilityservices.tamucc.edu/

• **Statement of Academic Continuity**  
In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.

M. **OTHER INFORMATION**

• **Academic Advising**  
The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

**GENERAL DISCLAIMER**
I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.