Course Syllabus – Spring 2019

COURSE: MATH 241 – Discrete Mathematics

INSTRUCTOR: Jim Anthony

OFFICE: 158 Hoyt

OFFICE HOURS:
M 9:20 am – 10:20 am
WF 12 pm – 1 pm
Also by appointment.

PHONE: x7285

WEB-PAGES: www.westminster.edu/staff/anthonj/

E-MAIL: anthonj@westminster.edu

ONLINE BOOK: Book of Proof, 3rd edition by R. Hammack

https://www.people.vcu.edu/~rhammack/BookOfProof/Main.pdf

GRADING 500 total points

Homework: Homework will be collected on most Fridays. At the end of the semester, the homework scores will be used to generate a score out of 150 points.

Exams: There will be two 100-point exams (not including the final).

Final: There will be a required comprehensive final given on Monday, May 6th from 8-10:30 am. The final exam will count as 150 points.

There are NO makeup quizzes and late homework or problem sets will NOT be accepted. Make-up exams will be possible with permission of the Dean. Make-up exams may be more difficult than the original exam. Class participation/contribution and attendance may be used to determine borderline cases.

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<tr>
<th>Grade</th>
<th>Min Score</th>
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<th>Min Score</th>
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<tbody>
<tr>
<td>A</td>
<td>93.3</td>
<td>C+</td>
<td>76.6</td>
</tr>
<tr>
<td>A -</td>
<td>90.0</td>
<td>C</td>
<td>70.0</td>
</tr>
<tr>
<td>B+</td>
<td>86.6</td>
<td>D</td>
<td>60.0</td>
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<tr>
<td>B</td>
<td>83.3</td>
<td>F</td>
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<tr>
<td>B -</td>
<td>80.0</td>
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These cutoffs may be lowered and there may be chances for extra-credit during the course.
EXTRA-CREDIT

There may be optional extra-credit opportunities throughout the semester. **Students with poor attendance (2 or more unexcused absences) will not receive any extra-credit in the course.**

CELL PHONES & OTHER ELECTRONIC DEVICES

Cell phones and any other electronic devices are to be put away (not lying on desk/lap/etc.) & turned off or silenced during class. For each violation, five points may be deducted from a homework score.

There are two exceptions to this rule:

1. Students may use laptop computers to access webassign during the homework question & answer period.

2. Students can ask (before class) if they can leave their phone on their desk in case of an emergency situation.

ATTENDANCE

Attendance is required. Math is difficult to learn at times as the new material builds on the previous material. If you miss a class, it is crucial to learn the material as soon as possible. Please let me know prior to missing a class. If there is an emergency and you need to miss class, please notify me as soon as possible afterwards.

**Each unexcused absence will lower your final grade percentage by ONE percent.**

**Perfect attendance will raise your final grade percentage by TWO percent.**

Goals:
- To gain complete familiarity with logic, sets, functions, relations, mathematical induction, recurrence relations, and graphs.
- To gain the ability to prove statements using various techniques involving deductive reasoning.
- To strengthen one’s overall understanding of the skills related to mathematics.
- To strengthen one’s mathematical writing.

Course Topics:
- Topics covered include
  - Logic
  - Sets
  - Functions
  - Relations
  - Counting
  - Mathematical induction
  - Recurrence relations
  - Graphs.
Course Objectives:
Students should be able to
• demonstrate various proof techniques.
• use deductive reasoning to prove theorems.
• use mathematical counting techniques appropriately.
• demonstrate their understanding of sets and logic.
• use mathematical induction to prove statements that are true for all natural numbers.
• illustrate their understanding of graphs and graph theory.
• demonstrate their understanding of recurrence relations and how closed formulas are obtained.
• illustrate mathematical properties using functions and relations.
• demonstrate the ability to write mathematical proofs.

These course objectives will be assessed through examinations, homework, group-work activities, as well as students individually working through problems during class.

ASSIGNED WORK IS NOT ACCEPTED LATE unless the delay is due to a verified emergency, crisis, or death, in which case a note from the Dean of Student Affairs will be forthcoming. Absence from class is not a reason for submitting late work.

HOMEWORK ASSIGNMENTS are to be submitted on Friday at the beginning of class.

All information in this outline is subject to change at the discretion of the instructor.

ACADEMIC INTEGRITY: Central to the purpose and pursuit of any academic community is academic integrity. All members of the Westminster community, including students, faculty, staff, and administrators, are expected to maintain the highest standards of honesty and integrity, in keeping with the philosophy and mission of the College. Academic dishonesty is a profound violation of this code of behavior.

This academic integrity statement is taken from the Westminster College Undergraduate Catalog. It is imperative that you never submit the work of others as though it is your own work nor should you ever allow anyone else to use your work without giving credit to you. The penalty for academic dishonesty in this class is minimally the grade of 0 on the assignment and, except for unusual circumstances, a grade of F for the course. Any event of academic dishonesty is reported to the Dean of the College. Other details of violations and consequences are given in the catalog.
GROUP WORK: Group work is a proper and effective way to study and learn if all participants do their full share of the work. It is possible to misunderstand exactly what it means to be responsible for “doing your own work.” You may (and should) discuss problems with other students and reach conclusions together. However, it is a form of academic dishonesty for a student, who has not attended class, read the assignment, or thought about the problem on their own to try to use the ideas developed by a group or claim credit for work to which one has not contributed. It is also dishonest to encourage or allow such practices on the part of others. You must, in all cases, leave the group discussion and write your own solutions for the exercises you submit for grading.

ACCESSIBILITY STATEMENT:
Westminster College actively strives for the full inclusion of all our students. Students with disabilities who require access solutions for environmental or curricular barriers should contact Faith Craig, Director of Disability Resources, located in 209 Thompson-Clark Hall. phone: 724-946-7192 e-mail: craigfa@westminster.edu

ACADEMIC SUCCESS CENTER:
The Academic Success Center can help you with free academic support, including drop-in tutoring hours and individual tutoring for specific subjects, as well as individualized academic consultations to help you with goal setting, time management, note-taking, reading strategies and other skills that will help you reach your academic goals.

Located on the fourth floor of Thompson-Clark Hall, the center also offers rooms for individual or group studying on a first-come, first-serve basis until 10 pm. For more information, visit www.westminster.edu/academics/learning-center/index.cfm, or contact Coordinator Jessica Shelenberger by visiting TC 412, by emailing shelenjp@westminster.edu or by calling (724) 946-6700.

CATALOG DESCRIPTION:
MTH 241 Discrete Mathematics (4 SH). An introduction to discrete mathematics. Topics covered include logic, sets, functions, relations, counting, mathematical induction, recurrence relations, and graphs. The topics are tied together through an emphasis on proof techniques and mathematical writing. Prerequisite: C- or better in MTH 150 or a higher-level math course, or permission of the instructor. (Offered every semester).