MATH 4091 – 010 – Research on Rainbow Coloring – Spring 2020

Contact Information:

- Instructor: Jesse Taylor
- Office: MCS 219E
- Email: jesse.taylor@angelo.edu
- Our Classroom: MCS 219E
- Meeting Times: 11:00-12:00pm Wed and 2:00-3:00pm Fri
- Office Hours:
  - Monday: 12:30-4:30pm
  - Tuesday: 10:30-11:00am, 12:00-12:30pm
  - Wednesday: 12:00-1:00pm
  - Thursday: 10:30-11:00am, 12:00-12:30pm
  - Friday: 12:30-1:00pm, 3:00-4:00pm
  - If the above times do not work please email me to set up another time to meet

Required Textbook

There is no required textbook for our class. Instead we will be studying several academic papers related to the concept of rainbow coloring in graphs.

Homework

Homework will be assigned regularly throughout the semester. In general, I will assign problems or readings each week. It is always your responsibility to attend our meetings and know when an assignment is due and to make sure it is turned in or taken on time.

Tests

We will have one test. It will constitute the “final project” portion of this course and will be taken during our final exam slot or at another time as arranged by the instructor and the students in the course.

<table>
<thead>
<tr>
<th>Test</th>
<th>Material Covered</th>
<th>Date</th>
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<tbody>
<tr>
<td>Final Exam</td>
<td>Cumulative</td>
<td>3:30-5:30pm, Mon May 4</td>
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Grading

Your grade in this class will be determined based on the following grading rubric.

- Homework: 75%
- Final: 25%
Your final letter grade in this class will be determined based on a ten-point grading scale.

**Attendance**

Attendance will be taken regularly, and each student’s absences will be reported with their final grade at the end of the semester.

**Technology**

Unless you have special accommodations documented with the Student Life office, no cell phones, tablets, laptops, games, or other electronic devices may be used at any time during class or during any test.

**Study Aids**

Feel free to come by my office for help. I will be in or near my office during office hours (or there will be a note telling you when I will be back). If my office hours are not convenient for you, email me or speak with me during class to arrange another time that is more convenient.

**Notes**

- If the university is unexpectedly closed for a scheduled class time, whatever was scheduled for that day and/or whatever was due that day will be scheduled and/or due on the next scheduled class day.
- All electronic correspondence will be sent to your ASU email account unless other arrangements are made.
- If you do not receive a graded homework assignment, quiz, or test on the day they are returned, please come by my office during office hours to pick the assignment up.
- Good luck. I want you to succeed in this course. If at any point during the semester you feel as if you do not understand the material, please come talk with me as soon as possible. An ounce of prevention is worth a pound of cure.
- All items and dates in this syllabus are subject to change as the semester progresses. Students will be notified in class of any changes, and the changes will not be updated within this syllabus.

**Mathematics 4091 – Rainbow Coloring II**

**Student Learning Outcomes**

1. **The students will demonstrate factual knowledge including the mathematical notation and terminology used in this course.** Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in graph theory and, more specifically, for rainbow coloring graphs.

2. **The students will describe the fundamental principles including the laws and theorems arising from the concepts covered in this course.** Students will
develop and apply the fundamental properties of graphs, graph colorings, and rainbow colorings. Students will also prove basic theorems related to coloring, and attempt to prove new theorems related to rainbow coloring.

3. **The students will apply course material along with techniques and procedures covered in this course to solve problems.** Students will use the facts, formulas, and techniques learned in this course to prove theorems about the structure, size, and nature of graph colorings and rainbow colorings.

4. **The students will apply course material along with techniques and procedures covered in this course to solve problems.** Students will use the facts, formulas, theorems, and techniques learned in this course to prove theorems about the structure, size, and nature of graph colorings and rainbow colorings.

**Course Content**

We will be using a selection of academic papers on rainbow coloring instead of a traditional textbook for this course.

**Anticipated Schedule**

Below is a table containing an approximate guide to what we will cover during each class of the semester. These topics are subject to change.

<table>
<thead>
<tr>
<th>Course Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1</td>
<td>Review of graphs</td>
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<tr>
<td>2</td>
<td>Basics of coloring</td>
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<td>3</td>
<td>Basics of edge coloring</td>
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<td>4</td>
<td>Introduction to rainbow coloring</td>
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<tr>
<td>5</td>
<td>Literature review</td>
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<td>6</td>
<td>Literature review</td>
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<td>7</td>
<td>Literature review</td>
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<tr>
<td>8</td>
<td>Literature review</td>
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<tr>
<td>9</td>
<td>Proof writing and problem solving</td>
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<tr>
<td>10</td>
<td>Proof writing and problem solving</td>
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<td>11</td>
<td>Proof writing and problem solving</td>
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<tr>
<td>12</td>
<td>Proof writing and problem solving</td>
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<tr>
<td>13</td>
<td>Proof writing and problem solving</td>
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<tr>
<td>14</td>
<td>Proof writing, problem solving, and Thanksgiving</td>
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<tr>
<td>15</td>
<td>Study period for final exam</td>
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</tbody>
</table>

Final Exam | Monday, May 4, 3:30am-5:30pm |
Student Disability Services

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student's responsibility to initiate such a request by contacting:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Title IX at Angelo State University

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance. This is done in order to connect students with resources and options in addressing the allegations reported. As a student, are encouraged to report any incidents of sexual misconduct directly to ASU’s Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator. You may do so by contacting:

Michelle Boone, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-942-2022
michelle.boone@angelo.edu

You may also file a report online 24/7 at www.angelo.edu/incident-form.

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

The Office of Title IX Compliance also provides accommodations related to pregnancy (such as communicating with your professors regarding medically necessary absences, modifications required because of pregnancy, etc.). If you are pregnant and need assistance or accommodations, please contact the Office of Title IX Compliance utilizing the information above.

For more information about Title IX in general you may visit www.angelo.edu/title-ix.
Student Absence for Observance of Religious Holy Days
A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. The full details can be found in ASU Operating Policy OP 10.19 Observance of Religious Holy Days.

Incomplete Grade Policy
It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Student Conduct Policies

Academic Integrity
Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the Statement of Academic Integrity.

Plagiarism
Plagiarism is a serious topic covered in ASU’s Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else’s work, idea, etc., and passing it off as one’s own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center.

Copyright Policy
Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.
General Policies Related to this Course

- All students are required to follow the policies and procedures presented in these documents:
  - Angelo State University Student Handbook
  - Angelo State University Catalog

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i Observance of Religious Holy Days: [http://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of](http://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of)
i Grading Procedures: [http://www.angelo.edu/content/files/14197-op-1011-grading-procedures](http://www.angelo.edu/content/files/14197-op-1011-grading-procedures)
i ASU Writing Center: [http://www.angelo.edu/dept/writing_center/academic_honesty.php](http://www.angelo.edu/dept/writing_center/academic_honesty.php)
i University Catalog: [http://www.angelo.edu/catalogs/](http://www.angelo.edu/catalogs/)