



**GOSHEN COLLEGE**  
**MATHEMATICS DEPARTMENT**  
**MATH 412 SEMINAR: CONNECTIONS – SPRING 2019**

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| <b>Description</b>         | A study of the interconnections among mathematics, other disciplines, ethics, careers, and society.   |
| <b>Learning Goals</b>      | <p>The student will</p> <ol style="list-style-type: none"><li>1. Describe the interplay between axiomatic and construction approaches to understanding the natural, rational, real, and complex numbers;</li><li>2. Describe the connections between geometry and algebra illustrated by the conic sections, angle trisection, polyhedrons, and map coloring;</li><li>3. Describe applications of mathematics to other disciplines;</li><li>4. Describe careers in which mathematical knowledge and skills are used and opportunities for further study of mathematics;</li><li>5. Describe ethical questions that arise out of mathematics;</li><li>6. Learn mathematics by reading, listening, exploring, and conversing in an effective manner;</li><li>7. Explain and critique mathematical reasoning through speaking and writing in a precise and articulate manner in both informal and formal settings;</li><li>8. Exhibit curiosity, playfulness, creativity, confidence, perseverance, interest in multiple perspectives, and a collaborative spirit.</li></ol> |
| <b>Prerequisites</b>       | Math 205, 212, and two upper level Math courses.  |
| <b>Activities</b>          | Students will complete assignments in preparation for a seminar discussion. Students are expected to constructively engage in the discussion. After the discussion, students will have an opportunity to correct and refine their responses to the assignment before it is graded.  |
| <b>Instructor</b>          | David Housman, SC 117, dhousman@goshen.edu, 535-7405 (office), 612-7185 (cell)<br>Office hours posted on office door and on Moodle.   |
| <b>Class Time</b>          | Tuesdays, 4:30-5:15PM in SC 117.  |
| <b>Grade</b>               | Based on participation in seminar discussions (30%) and completion of assignments (70%).  |
| <b>Participation</b>       | <p>Criteria for participation grades:</p> <p>C (70-80): Attend all seminars and participate when explicitly requested.<br/>B (80-90): In addition, ask appropriate questions and voluntarily offer constructive ideas and critique.<br/>A (90-100): In addition, provide partial or full solutions.</p> <p>If the IDEA student rating for this course is not completed, 5 points will be subtracted from the participation score.</p>   |
| <b>Assignments</b>         | There will be 13 assignments that are equally weighted. For the mathematically oriented assignments, points will be earned for the correctness and clarity of the solutions and explanations. For the other assignments, points will be earned for the completeness and clarity of the descriptions. Students should have a first draft ready for class discussion during our Tuesday meeting. The final draft will be due the following Monday at 8:00AM.  |
| <b>Tutoring</b>            | The Academic Success Center provides tutoring and writing support for free to all undergraduate students. Make an appointment at goshen.edu/asc. Unfortunately, no current student has previously completed this course. Therefore, make use of David's office hours.   |
| <b>Disability Services</b> | Goshen College is committed to providing all students equal access to programs and facilities. Students who need accommodations based on disability should contact the Director of the Academic Success Center (ASC). Students must register with ASC before faculty are required to provide reasonable accommodations. For more information or to register, please contact the Director of the ASC, Judy Weaver, Good Library 112, jweaver@goshen.edu or 574-535-7560. To ensure that learning needs are   |

met, contact the director of the ASC the first week of classes.

**Collaboration  
and  
Academic  
Integrity**

You are encouraged to use all available resources in order to learn the concepts and techniques discussed in this course. However, simply copying someone else's work subverts the learning process.

For assignments, you may look at and discuss another student's work; however, you must give written acknowledgement to people and written materials that were used.

Failure to observe the above rules will result in a zero on the assignment. Any violation of academic integrity will be reported to the Academic Dean. Observation of the above rules will help you learn the material well and give you the satisfaction of knowing that you have earned your grade.

**Due Date  
Policy**

Class participation and assignments can only be excused or made up if (1) there is a serious medical problem, a death in the immediate family, or an irreconcilable conflict with another official Goshen College activity; (2) there is written documentation signed by proper authorities; and (3) the instructor is notified prior to the due date or as soon as possible afterwards.