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| **Course Title/Number** | MTH 411 – Mathematical Modeling |
| **Semester/Year** | Spring 2016 |
| **Days/Time** | MWF 12 – 1 |
| **Location** | Smith Hall 509 |
| **Instructor** | Dr. Clayton Brooks |
| **Office** | SH723 |
| **Phone** | x6-6807 |
| **E-Mail** | brooksc@ |
| **Office Hours** | MTWR 10 – 11:30 |
| **University Policies** | By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to [www.marshall.edu/academic-affairs](http://www.marshall.edu/academic-affairs) and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to [www.marshall.edu/academic-affairs/policies/](http://www.marshall.edu/academic-affairs/policies/). Academic Dishonesty/Excused Absence Policy for Undergraduates/Computing Services Acceptable Use/Inclement Weather/Dead Week/Students with Disabilities/Academic Forgiveness/Academic Probation and Suspension/Academic Rights and Responsibilities of Students/Affirmative Action/Sexual Harassment |

**Course Description: From Catalog**

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| MTH 411 - Mathematical Modeling  Students work in teams to construct mathematical models of various real-world situations.  Problems to be modeled are drawn from diverse areas of application and use a wide range  of undergraduate mathematics. PR: MTH231. 3 hours. |

**Course Objectives:**

**• Expose students to mathematical techniques not typically seen at this point**

**• Expose students to short-term problem solving**

**• Expose students to long-term problem solving of open-ended, real-world problems.**

**• Expose students to work within assigned teams assembled to solve extended problems.**

**• Provide beginning skills for attacking problems presented imprecisely.**

**• Provide an opportunity for students to translate features of the real-world into mathematical terms without an obvious “chapter topic” for guidance.**

**• Provide experience in making open-ended problems more tractable by neglecting some aspects and crafting simplifying assumptions about others.**

**Learner Outcomes:**

**Students will learn:**

**• informal group dynamics by necessity and osmosis;**

**• to neglect and to assume in order to simplify a problem for initial attack;**

**• to trust teammates’ work and ideas for the common solution;**

**• to depend on teammates to do their share of the group work;**

**• that the professor has abdicated the role of intellectual authority figure while the teams are working on a project;**

**• to write portions of a common report;**

**• to make oral presentations before their peers for every project;**

**Required Texts, Additional Reading, and Other Materials**

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| A First Course in Mathematical Modeling (3rd edition) by Giordano et al |

**Course Requirements**

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| The majority of class time will be spent on students presenting solutions to short exercises and projects to the rest of the class, which will assist and critique the presenter.  The remaining portion of the class will be spent on the results of individual and group long-term projects, just as above, but as a more formal presentation  A midterm and final exam may be given to assess knowledge of fundamental concepts. |

**Grading Policy**

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| Equal weight will be given to:   * Daily presentations and peer evaluation. * Long-term projects * Possible mid-term exam * Possible final exam |

**Attendance Policy**

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| See University Policies above |

**Course Schedule**

TBA