

**Professor: Donald Adongo, Ph.D.**

**Syllabus for MAT 530-02**

**Mathematics and Industry**

**Spring 2017**

**Time:** 2:30 pm – 3:45 pm MW    **Location:** FH 307

**Email:**            dadongo@murraystate.edu

**Office:** FH6A-2                      **Phone:** (270)8092490

**Office Hours:** By Appointment

**DEPARTMENT: Mathematics & Statistics**

**COURSE PREFIX:** MAT

**COURSE NUMBER:** 530

**CREDIT HOURS:** 3

**I. TITLE:**

Special Topics in Mathematics I

**II. COURSE DESCRIPTION AND PREREQUISITE(S):**

Library investigations of various lengths concerning special topics in mathematics. Periodic conferences will be arranged with the supervising faculty member on an individual basis. May be repeated for credit.

**Prerequisite(s):** Six hours of mathematics courses numbered 400 and above with a mathematics GPA of at least 3.0; consent of instructor.

**III. COURSE OBJECTIVES:**

The student will:

- A. Use their prerequisite knowledge to investigate industrial problem in business, industry, and government;
- B. Enhance their prerequisite knowledge with implementation of the problem for oral and written presentations to the peer group and industrial partners
- C. Incorporate computational skills in demonstrating graphical solution mechanisms.
- D. Develop materials/applications that are useful for the industrial partners.

**IV. CONTENT OUTLINE:**

- A. Oral and written presentation skills analysis;
- B. Team building through innovation;
- C. Case studies involving business, industry, and government;
- D. Sensitivity analysis of dynamics projects;
- E. Data Mining, database discussions, and statistical analyses;

**V. INSTRUCTIONAL ACTIVITIES:**

The groups of 2-5 students and faculty will be engaged in oral and written presentations throughout the semester in an interactive and collaborative format in concert with discussions with the industrial partners.

**Preparation is mandatory.** This course is a research type experience with journal documentation of all work, bimonthly oral presentations, and research project writing updates made on at least once every three week basis. There will be meetings with the industrial sponsors. Since this is a National Science Foundation sponsored grant, there will be assessments that students are required to take. Additionally, the students and faculty will have regular meetings with the industrial partners to ascertain that the projects are moving in the direction that all see that is most beneficial. Since this is a research experience, the ability to

work with your groups as well as individually will take time outside of class. The expectation is approximately 10 dedicated hours exterior to class, but more may be needed as the project progresses.

**VI. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:**

Trips to industrial partners as needed with computer conferences used as much as possible.

**VII. TEXT(S) AND RESOURCES:**

Research texts applicable to the industrial project will be used. The library resources will be highly sought.

**VIII. EVALUATION AND GRADING PROCEDURES:**

A) Evaluation information is given below. However the grading scale is standard.

<b>Grading:</b>	<b>Grading Scale:</b>	
Journal Documentation: 10%	90 - 100 %	A
Group Assessments: 10%	80 - 89 %	B
Biweekly presentations: 20%	70 - 79 %	C
Research report updates: 20%	60 - 69 %	D
Oral Presentation: 10%	Below 60%	E
Research project: 30%		

B) **Auditing:** If you seek to change your status to audit, then this must be done early in the term. Due to the nature of this project, we truly need all hands on deck, if you will. We can discuss challenges if they arise. You must attend classes regularly after the audit is given and miss no more than 1 class period after the audit is given. If these requirements are not followed, then an “E” will be earned for this course.

C) **Final Exam:** The final exam will be the oral presentation and the research project completion.

**IX. ATTENDANCE POLICY:**

*Students are expected to adhere to the MSU Attendance Policy outlined in the current MSU Bulletins.*  
Click here to enter additional attendance policy if necessary.

**X. ACADEMIC HONESTY POLICY:**

Murray State University takes seriously its moral and educational obligation to maintain high standards of academic honesty and ethical behavior. Instructors are expected to evaluate students’ academic achievements accurately, as well as ascertain that work submitted by students is authentic and the result of their own efforts, and consistent with established academic standards. Students are obligated to respect and abide by the basic standards of personal and professional integrity.

**Violations of Academic Honesty include:**

**Cheating** - Intentionally using or attempting to use unauthorized information such as books, notes, study aids, or other electronic, online, or digital devices in any academic exercise; as well as unauthorized communication of information by any means to or from others during any academic exercise.

**Fabrication and Falsification** - Intentional alteration or invention of any information or citation in an academic exercise. Falsification involves changing information whereas fabrication involves inventing or counterfeiting information.

**Multiple Submission** - The submission of substantial portions of the same academic work, including oral reports, for credit more than once without authorization from the instructor.

**Plagiarism** - Intentionally or knowingly representing the words, ideas, creative work, or data of someone else as one’s own in any academic exercise, without due and proper acknowledgement.

Instructors should outline their expectations that may go beyond the scope of this policy at the beginning of each course and identify such expectations and restrictions in the course syllabus. When an instructor receives evidence, either directly or indirectly, of academic dishonesty, he or she should investigate the instance. The faculty member should then take appropriate disciplinary action.

Disciplinary action may include, but is not limited to the following:

- 1) Requiring the student(s) to repeat the exercise or do additional related exercise(s).
- 2) Lowering the grade or failing the student(s) on the particular exercise(s) involved.
- 3) Lowering the grade or failing the student(s) in the course.

**If the disciplinary action results in the awarding of a grade of E in the course, the student(s) may not drop the course.**

Faculty reserve the right to invalidate any exercise or other evaluative measures if substantial evidence exists that the integrity of the exercise has been compromised. Faculty also reserve the right to document in the course syllabi further academic honesty policy elements related to the individual disciplines.

A student may appeal the decision of the faculty member with the department chair in writing within five working days. Note: If, at any point in this process, the student alleges that actions have taken place that may be in violation of the Murray State University Non-Discrimination Statement, this process must be suspended and the matter be directed to the Office of Equal Opportunity. Any appeal will be forwarded to the appropriate university committee as determined by the Provost.

**Note:** Faculty reserve the right to invalidate any examination or other evaluative measures if substantial evidence exists that the integrity of the examination has been compromised.

## **XI. NON-DISCRIMINATION POLICY STATEMENT:**

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. In particular and without limiting the preceding and pursuant to and consistent with the requirements of Title VI of the Civil Rights Act of 1964 and its regulations 34 CFR 100 et seq.; Section 504 of the Rehabilitation Act of 1973 and its regulations 34 CFR 104; Title IX of the Education Amendments of 1972, 20 USC 1681 et seq., and its regulations 34 CFR 106 et seq; and the Age Discrimination Act of 1975 and its regulations 34 CFR 110, Murray State University does not discriminate on the basis of race, color, national origin, sex, handicap, or age in its educational programs and activities. This non-discrimination in education programs and activities extends to employment and admissions and to recruitment, financial aid, academic programs, student services, athletics, and housing. Murray State is required by Title IX and 34 CFR part 106 not to discriminate on the basis of sex and the prohibition against sex discrimination specifically includes a prohibition of sexual harassment and sexual violence. For more information contact the Executive Director of Institutional Diversity, Equity, and Access/ Murray State University Title IX Coordinator, Murray State University, 103 Wells Hall, Murray, KY 42071 Telephone: (270) 809-3155 Fax: (270) 809-6887; TDD: (270) 809-3361; Email: [msu.titleix@murraystate.edu](mailto:msu.titleix@murraystate.edu)

### Students with Disabilities

Students requiring special assistance due to a disability should visit the Office of Student Disability Services immediately for assistance with accommodations. For more information, students should contact the Office of Student Disability Services, 423 Wells Hall, Murray, KY 42017. 270-809-2018 (voice) 270-809-5889 (TTD).

## **XII. Other required departmental or collegiate committee information**

[Click here to enter text.](#)