COURSE DESCRIPTION: MAC 2312 Calculus with Analytic Geometry II (5) FA SP SU
Prerequisite: MAC 2311 with a grade of "C" or better. Topics include applications of the definite integral (arc length, center of mass, work, and fluid pressure), the calculus of inverse functions with emphasis on inverse trigonometric, exponential, and logarithmic functions, indeterminate forms and use of L'Hôpital's Rule, introduction to hyperbolic functions, techniques of integration, infinite sequences and series, polar coordinates and parametric equations, and a brief study of conic sections. A graphing calculator is required. Check with instructor for the most appropriate one. Also, MAPLE® is used as a teaching and learning tool. Lecture 5 hours.


MAPLE®: I’ll be using the CAS (Computer Algebra System) MAPLE® in this class periodically as a teaching and/or learning tool.

STUDENT E-ACCOUNT: You will need to set up your Student eAccount. This can be done by going to the TCC web page: http://www.tcc.fl.edu/ and clicking on Academic Resources and then on Student Electronic Accounts. This account will provide you with a log-on for computers on campus, including those mentioned above.

WEB PAGE: I maintain a web page at http://faculty.tcc.fl.edu/scma/jonesd/index.htm. It is important that you check the Calc_02 web page frequently.

BLACKBOARD: We'll also be using BLACKBOARD, which can be accessed at https://bb.tcc.fl.edu/webapps/login

CALCULATORS: You will need a graphing calculator in this class. As it is stated in the Prototype Syllabus,

"Students are expected to own and use a scientific calculator throughout the course. If the instructor chooses, graphing calculators may be used for class presentations and on homework, quizzes, and tests. If the instructor chooses this option, (s)he should construct test items appropriate to the use of this tool and the concepts covered in the list of objectives."
However, be advised! **All calculators will be cleared (reset)** at the beginning of each test and at the Final Exam. I reserve the right to approve or reject any model calculator for use in the classroom. In particular, there will be no TI-89 or TI-92-type calculators permitted for use on in-class graded work.

**GOALS OF THE COURSE:** This course is designed for science, mathematics, engineering, and mathematics education majors and for students interested in obtaining a fairly rigorous introduction to calculus concepts. This course can be used to satisfy part of the General Education Mathematics Requirement or it can serve as an elective. A complete list of course objectives can be found at [http://faculty.tcc.fl.edu/scma/jonesd/fall2005/calc02_36686/calc02_pdf_f05/mac2312-course-performance-objectives_2002.pdf](http://faculty.tcc.fl.edu/scma/jonesd/fall2005/calc02_36686/calc02_pdf_f05/mac2312-course-performance-objectives_2002.pdf)

**ATTENTION: ACADEMIC ALERT!** The 1997 Florida Legislature passed House Bill 1545 which requires that students enrolled in the same college credit course more than two times shall pay non-resident fees the third time they sign up to take the course. Florida College and Universities will be required to start “counting” attempts beginning Fall 1997. A course is considered a valid attempt if it remains on your schedule past the published College refund date.

**ATTENTION: ENGINEERING STUDENTS!** There are more stringent performance standards-and-requirements for engineering students than for the general university population. The following information is taken from the FSU Undergraduate Academic Program Guide, requirements for Mechanical Engineering:

**Admission Requirements to Major Program of Studies**
To be admitted, students must complete at least 52 semester hours of credit with an adjusted GPA of 2.0, including at least half the required hours in the Liberal Studies program, including all of Area I (English, Math). In addition, the following requirements must be met: 1) Students must achieve a GPA of 2.5 or higher in Calculus I and II, Physics I (with lab), and Chemistry I (with lab) before enrolling in any 2000 level or higher engineering course for which any of these courses are prerequisites. A maximum of one repeat of each course is allowed in meeting this requirement. 2) In general, engineering majors must earn a grade in the range of “C” or higher in all prerequisite and engineering courses which apply toward the degree, including those which are transferred. Contact the department for further details.

**ATTENDANCE POLICY:** Class attendance is required. Roll will be taken. If you have more than three (3) un-excused absences, you may be withdrawn administratively. **If you have more than five (5) absences before Tuesday, November 8, 2005, for any reason whatsoever, you shall be withdrawn administratively.** However, if you simply stop attending class after that date, you cannot be dropped. In such event, you will receive an F in the course.

Any late arrival or early departure, without prior permission not only exhibits poor manners, but also will be counted as an absence.

If you come in late or if you intend to leave early, please sit in the first row (nearest the door). This will minimize the disturbance to the rest of the class.

Conversely, if you arrive for class in a normal time frame, please do not sit in the first row (nearest the door), unless you must leave early. This will leave the first row open for late-arrivers.

**WITHDRAWALS:** If you decide to withdraw from this course, it is your responsibility to do so. The last date for withdrawal as “W” or “AW” is
HOMEWORK: Homework must be done in order to succeed in this class! If you are unwilling or unable to devote at least two homework hours outside class for every hour inside class, you will not realize your potential. There are two types of homework assigned in this course:

- **TURN-IN HW (TI):** Selected homework problems will be collected. They will be graded for technique, accuracy, and neatness. At the end of the semester, the lowest TI grade will be dropped before computing your homework average.

- **NOTEBOOK HW (NB):** These problems are to be done on a daily basis. These problems should be kept in a separate section of your notebook. Each section must be clearly labeled. You will visit my office and show me your notebook homework at test time! The degree of completion of the assigned problems will result in a grade. Each notebook grade will count as three (3) turn-in assignments. No notebook grade will be dropped.

Detailed instructions on formatting of homework will be given in a separate handout.

**QUIZZES:** Possibly frequent Pop Quizzes will be given (take-home or in-class).

**TESTS:** There will be four (4) Unit Tests during the semester. The dates are shown on the Pacing Schedule and below. The tests will be free-response, and considerable credit will be given for correct technique and proper application of theory and concepts. The test dates are:

- Test #1: Thurs, Sept 15
- Test #2: Wed, Oct 5
- Test #3: Wed, Oct 19
- Test #4: Wed, Nov 2

**FINAL EXAM:** The Final Exam will be held at 12:30 – 2:30 pm on WED, DEC 14 in SM 129.

**GRADING SYSTEM:**

- Four Unit Tests, where $T_i = $ Each Unit Test Grade, for $i = 1...4$. No grade will be dropped or replaced.

- Homework/Quiz Average $H = \frac{\left( \sum_{i=1}^{n} TI_i + 3 \sum_{i=1}^{m} N_i + \sum_{i=1}^{m} Q_i \right)}{(n+15+m)}$ where
  - $TI_i =$ Each Turn-In Homework grade, for $i = 1...n$, and I drop the lowest TI grade;
  - $N_i =$ Each Notebook Grade, for $i = 1...5$, no grade is dropped – please note that each notebook grade counts the same as three turn-in grades; and
  - $Q_i =$ Each Quiz Grade, for $i = 1...m$, and I drop the lowest Q grade.

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1 Note: This is just homework time; it does not include the time necessary to read the textbook, work through the examples, and think about the material.
- Final Exam Grade  \( E = \text{Final Exam Grade} \) (The Final Exam \textbf{must} be taken – A missed Final Exam is an automatic F in the course), and

- Course Grade  \( G = \frac{1}{6} \left( \sum_{i=1}^{4} T_i + H + E \right) \)

**ADDITIONAL INFORMATION:**