SYLLABUS Embry-Riddle Aeronautical University Daytona Beach Campus

Course Number:	MA 242
<u>Term</u> :	Springg 2018
Instructor:	Dr. E. Jacobs
E-Mail Address:	jacobs50@xecu.net
Office:	COAS 301-23
Office Hours:	MWF 2:00 - 2:50 PM, Thurs 5:00 - 5:30 PM
<u>Course Title</u> :	Calculus II Cr. Hrs. 4
Meetings:	Section 06: MWF 3:00 - 3:50 in COAS 405 and Thurs 2:15 - 3:30 in COAS 405
	Section 07: MWF 4:00 - 4:50 in COAS 317 and Thurs 3:45 - 5:00 in COAS 407
Course Text:	Calculus by James Stewart
Calculus II Website:	www.xecu.net/jacobs/index242.htm

Course Description:

Differentiation and integration of transcendental functions; special integration techniques; applications of the definite integral; numerical methods; infinite series

Prerequisite: MA 241

<u>Goals</u>:

This course is required in Aerospace Engineering, Electrical Engineering, Engineering Physics, Aviation Computer Science, Aircraft Engineering Technology, Aviation Technology and Avionics Technology programs. Its purpose is to enable the students to apply the calculus of transcendental functions and techniques of integration to engineering and scientific problems.

<u>Performance Objectives</u>: The following is a minimal list of skills that you must attain. The requirements of the course include but are not limited to this list.

- 1. Calculate volumes of solids of revolution by the disk method, washer method and the method of cylindrical shells.
- 2. Calculate the length of a plane curve and the area of a surface of revolution.
- 3. Solve applied problems such as those involving work, force or liquid pressure.
- 4. Recognize the domain, range, and algebraic properties of the logarithmic and exponential functions and sketch their graphs.
- 5. Compute derivatives and integrals of logarithmic and exponential functions.
- 6. Apply the definitions, algebraic properties, and identities of the hyperbolic functions and sketch their graphs.
- 7. Compute derivatives and integrals of the hyperbolic functions.
- 8. Identify the domain, range, and apply algebraic properties of the inverse trigonometric functions and sketch their graphs.
- 9. Compute derivatives and integrals of the inverse trigonometric functions.
- 10. Apply the definitions and algebraic properties of the inverse hyperbolic functions and sketch their graphs.
- 11. Compute derivatives and integrals of the inverse hyperbolic functions.
- 12. Evaluate integrals using integration by parts, trigonometric substitutions, partial fractions and miscellaneous substitutions.
- 13. Evaluate integrals involving powers of trigonometric functions.
- 14. Approximate integrals using the Trapezoidal Rule and Simpson's Rule.
- 15. Recognize various indeterminate forms and evaluate limits using L'Hopital's Rule.
- 16. Evaluate integrals involving infinite limits and unbounded functions.
- 17. Calculate Taylor series for a given function and test for convergence.
- 18. Sketch curves given in parametric form and calculate their arc length.

Grading:

The grade in this course will be computed from homework and exams. There are four exams altogether, including the final exam. All exams are equally weighted.

Exam Average	88%
Assignments	12%

Final Exam:

The final exam for this course will take place on Saturday, April 28 at 12:30 PM.

Conduct During Exams:

Students will not be allowed to use any formula sheets or notes on exams. Students may not receive assistance from classmates or attempt to copy the work of a classmate during an exam. Violators are subject to immediate failure in the course as well as other administrative sanctions such as suspension if appropriate.

Missed Exams:

A student who misses a regularly scheduled exam may, at the discretion of the instructor, take a make-up exam. However, the student must contact the instructor within 24 hours of the original exam to be eligible for a make-up exam. A make-up exam may be more difficult than the original exam.

Disability Support Services:

Those students who have been appropriately certified by the DSS office may take their exams there. However, Dr. Jacobs will deliver and pick up all such exams personally rather than rely on students transporting the exams in a sealed envelope. Students will be required to complete all relevant DSS paperwork for each exam and give the "Testing Modifications" form to Dr. Jacobs no later than one week before the exam. Since exams are announced a month in advance, this should pose no hardship to any student.

Calculator:

You may need a scientific calculator on some exams. You may *not* use a calculator capable of doing symbolic calculus operations, such as derivatives and integrals on exams. Graphing calculators are permitted on midterm exams but not on the final exam.

Homework Assignments:

Homework assignments are collected and graded. Homework must be handed in at the beginning of the class period on the due date. A late homework assignment that is submitted within 24 hours of the due date will still be graded but will only be given half credit. Homework that is submitted later than this will automatically be given a score of zero and will not be corrected. The instructor also reserves the right to reject homework that is submitted late excessively. If more than one sheet of paper is needed for an assignment then the pages must be stapled. Homework not meeting this standard will be returned with a score of zero. Please do not e-mail scanned assignments to me. If you can't make it to class, just give your homework to a classmate to hand in for you.

Students who are having difficulty with any homework assignment are permitted to get some assistance from other instructors or classmates. However, students should not simply copy solutions verbatim or permit others to do their assignments for them.

Attendance:

Attendance is recorded regularly. A student's attendance record will not be counted toward the final course grade except for borderline cases.

When a student attends a lecture, he should stay for the entire class period. However, if a student becomes ill during class or needs to get to a bathroom, this rule may be ignored.

Canvas:

All information for this section of MA 242 will be found at www.xecu.net/jacobs/index242.htm instead of on Canvas.