MATH 511. Calculus and Analytic Structures. Fall 2013. WWP
Offered as part of the elective content for the Master of Science in Community/Technical College Mathematics

Course Description. Topics from among the following: Continuity, limits, derivatives, integrals, sequences, series, basic differential equations, introductory numerical analysis.

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Office Hours: to be posted and announced

Prerequisite or corequisite: C or better in MATH 509; eligibility for graduate program in mathematics.

Reference Text: Calculus (9th edition)
Varberg, Purcell, Rigdon
Materials: Calculator **, computer access ***

** Please note: For certain assignments and exams, the use of calculators is either prohibited or limited.

*** All assignments, notes, announcements, etc. will be posted on Moodle or be conveyed by Nicholls email. Students enrolled in a web class must have basic computer skills [such as word processing (MS WORD and EXCEL), managing email, scanning, navigating the Internet (web browser), reading pdf files, etc.] and must have self-discipline and self-motivation. Homework and tests must be submitted by prescribed deadlines, and must be legible. Email will be our primary means of communication, so students must check their Nicholls email accounts regularly. Students should also consistently check their Moodle accounts.

Distance education students must choose an approved testing center in their local area and complete a Proctor Approval Form (to be supplied to the student) prior to taking any proctored examinations. Once the form has been given to you, you will have two weeks to inform me of your choice of proctor, whom I will then contact, and then either approve or not approve the selection.
For tests which do not require a proctor, the student must adhere to academic honesty and must work alone. Test work submitted must be only the student’s intellectual product and work. Academic dishonesty on such tests so designated will not be tolerated. For homework which is to be submitted to the instructor, students are permitted to communicate with one another, but only with one another. The best way to do this, I believe, (but left to the individual student’s discretion) is to copy everyone (students and instructor) on email correspondence regarding questions and insights. Emails for instructor’s eyes only must be denoted CONFIDENTIAL within the subject line; otherwise correspondence related to class questions and insights will be assumed open to all participants. We will also make use of asynchronous Forum and synchronous Chat in Moodle. We will also make use of Moodle assignment submission repositories for unmonitored assessments.

Evaluation: Final course grade is determined by total earned points as a percentage of all possible points in the course. Each assessment item throughout the semester will have a point value attached to it, and revealed at the time the assessment is given.

Scale:

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<th>59.5</th>
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<td>Grade</td>
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Content:

I. Review of Double Integration

II. Mean Value Theorems and Average Value

III. Average Value for Double Integrals

IV. Selected Topics from Calculus

Note: Students are responsible for being aware of changes in topics or schedule. Check Nicholls email and Moodle frequently.
The objectives of this course are in line with the departmental guidelines on reform and on technology-assisted teaching. Specifically, the course is designed to help students solve pure and applied problems and to effectively communicate and disseminate mathematics.

Specifically, students will be able to:
1. Apply standard language in mathematical analysis;
2. Formulate definitions of objects in analysis;
3. Develop assertions as theorems;
4. Form and test the truth of conjectures;
5. Apply various methods of proof;
6. Communicate concepts to colleagues.

**Americans With Disabilities Act:**
If you have a documented disability that requires assistance, you will need to register with the Office of Disability Services for coordination of your academic accommodations. The Office of Disability Services is located in Shaver Gym, 158-A. The phone number is (985) 448-4430 (TDD 449-7002). Additional information can be found at [www.nicholls.edu/disability](http://www.nicholls.edu/disability).

**DROP DATE:** The last day to drop a course with a “W” is: November 5.

**Academic Grievances:**
The proper procedure for filing grade appeals or grievances related to academic matters is listed in Section 5 of the Code of Student Conduct and at the following link: [http://www.nicholls.edu/documents/student_life/code_of_conduct.pdf](http://www.nicholls.edu/documents/student_life/code_of_conduct.pdf).

**Academic Honesty:**
The University expects all students to maintain absolute integrity and a high standard of individual honor in all academic work.

Effective immediately, Section five of the Code of Student Conduct: Academic Dishonesty and Disruptive Behavior, has been revised and includes a requirement that faculty file a charge complaint statement with the dean whenever a student is confronted and/or disciplined for cheating. The Office of Academic Affairs will maintain these records and any student confronted and/or disciplined for multiple offenses (more than one) of academic dishonesty will be brought before the Academic Affairs Integrity Committee for further review and/or sanctions. Please read the Code of Student Conduct for further details regarding this policy.
Continued Learning following an Extreme Emergency:

In order to make continued learning possible following an extreme emergency, **students are responsible for:**

- reading regular emergency notifications on the NSU website;
- knowing how to use and access Moodle (or university designated electronic delivery system);
- being familiar with emergency guidelines;
- evacuating textbooks and other course materials;
- knowing their Moodle (or designated system) student login and password;
- contacting faculty regarding their intentions for completing the course.
**Homework Problems for Evaluation and GOMO Problems**

**Homework Problems**

Problems to be graded will be designated by the title \textit{HW Problem} followed by a number; for example, \textit{HW Problem 7}. Each of these problems will have a point value attached to it, along with a due date. “Due date” deadline is 12 o’clock noon, central time, on the specified date and current year. Consider the following example.

\textit{HW Problem 7}. (5 points; Sept12) Factor completely the polynomial: $x^2 - 4$. \textit{(sample only)}

This problem (sample only) has a value of 5 points and is due to the instructor by 12 o’clock noon central time on September 12, 2013.

The following are general guidelines for homework problems.

1. Show all your work. An answer alone is not acceptable. Show your steps and reasoning. Check your work and ensure that the mathematics is accurate and legitimate.
2. The work submitted must be organized, neat, and legible. Final answers, and the work used to obtain them, should be exact and in simplest form. It is preferred that numerical answers be in reduced fractional form, but some judgment may be made as to what is appropriate for a given problem. Avoid approximate “calculator” answers unless the problem prescribes otherwise.
3. Begin a new sheet or page for each numbered problem.
4. If a problem, particularly a computational problem, has a “final answer,” make sure to indicate what your final answer is, by “boxing” it or by some other appropriate measure. You still want to show all your work, and all such work will be assessed, but it is also important to know what your final conclusion is.
5. Since a course in logic/foundations is a prerequisite for this class, you may encounter problems requiring proofs. Proofs should be well-written in standard English, and should be checked for logical arguments. Make sure you properly justify your conclusions. Avoid the use of \textit{too many} symbols; opt for English words instead. For example, use the word \textit{implies} instead of the symbol “$\implies$”. Of course, standard accepted symbols, such as $\leq, \neq, \geq, =$, etc. should be utilized.
6. For homework problems, you are permitted to communicate with one another, but with no person or source outside the class. I suggest copying everyone in the class on such correspondence. Personal emails, however, should be denoted CONFIDENTIAL within the subject line. Communication with one another must not be taken to mean “copying” an answer. If you engage in “copying,” you are committing academic dishonesty, and really you are not enabling yourself to learn the content. The same is true if you “copy” from a source such as a textbook or the Internet. The instructor reserves the right to subject your work to plagiarism-detection software, or to challenge work conspicuously similar to another person’s. Communication with one another does mean exchanging ideas and learning from one another. My main objective is for you to learn concepts, and this objective can be partially attained by your interaction with one another (and with me). In any case, let’s avoid the unpleasantness associated with dishonesty, and make the problems vehicles for learning and meaningful interaction. We will also use asynchronous Forum and synchronous Chat in Moodle.

7. Certain problems may have special directions associated with them. Such instructions will be given within the statement of the problems.

8. Final work for grading should be submitted to me only, as an MS WORD document, or pdf file (scanned written work, for example), or faxed document (MS WORD or written manuscript). You may submit your work by email, by fax (985-448-4374), in Moodle repository, or in person. Faxed documents should be identified by your name, my name (Scott Beslin), and the course designation MATH 511. Once again, make sure your work is legible.

GOMO Problems

Certain “problems” or “points for discussion,” will appear but will not be evaluated for a specified point grade. These will be designated GOMO, or “getting our minds operating.” Everyone should submit correspondence regarding a GOMO problem. These are equally important as the homework problems in terms of learning the content. They will help you to formulate ideas and prepare you for other assessments as well. You can think of GOMO problems as discussions which would normally take place in on-site lecture classes, or perhaps as those “textbook” practice exercises not ordinarily submitted to the teacher for evaluation. Should GOMO problems lead to significant discussion (great!), the instructor reserves the right to include a GOMO contribution to computation of the final course grade if it is in students’ best interest. Here’s an example of a GOMO problem.

GOMO 7. What are the possibilities for the derivative of a function at a given point if the slope of the normal line at that point is undefined?

Email everyone with your comments.
People in Our Group: Class Participants

Brittany Aulds  baulds@its.nicholls.edu
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Michael St. John  mstjohn2@its.nicholls.edu
Lydia Towell  ltowell@its.nicholls.edu
Scott Beslin, instructor  scott.beslin@nicholls.edu

HW Problem 1. (4 points; Aug 26) Send an email from your Nicholls account to all class participants above. In this email, introduce yourself. State your name and how you wish to be addressed (some of you may have nicknames with which you are more comfortable). Moreover, include at least one paragraph which describes an interesting fact or two about yourself.

Reminder about HW Problem (see page 4): This assigned problem has a value of 4 points, and is due by 12:00 noon central time on August 26, 2013.

To all Participants: It would be courteous to respond to one another’s emails as you receive them; as outlined on page 2, everyone in the class should be copied.