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| **Course Number and Name:**  | **MTH201, Calculus III** | **MTH201** |
| **Class Time and Location:**  | **TR:08:00-09:15,Zakhem Engineering Building** |
| **Credits and Contact Hours:**  | **3 Credits, 2 sessions per week** |
| **Semester:**  | **Fall 2015** |
|  |  |  |

Instructor

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***Course Page*: Blackboard**

***Office: Part-time office***

***Office Hours:TR 09:15-10:15***

**Current Catalog Description**

This course covers hyperbolic functions, integration techniques and improper integrals. The course covers also infinite sequences and series: limits of sequences of numbers, bounded sequences, integral test for series, comparison tests, ratio and root tests, alternating series test, absolute and conditional convergence, power series, Taylor and Maclaurin series, and applications of power series. Polar functions, polar coordinates, and graphing of polar curves are also covered. In addition, topics from multivariable calculus are introduced: functions of several variables, partial derivatives, double integrals, applications to double integrals, and double integrals in polar form.

Course Prerequisite/Co-requiste

Prerequisite: Sophomore Standing.

**Textbook and References**

Weir/Hass/Giordano, Thomas’ Calculus, 12th edition, Addison Wesley.

**Course Type**

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| **R**equired | [ ]  | **E**lective | [ ]  | **S**elective **E**lective | [ ]  |

**Course Learning Outcomes**

CLO1.Students will acquire the skills needed to solve definite, indefinite, improper and double integrals.

CLO2.Students will be able to solve applied problems using integrals.

CLO3.Students will be able to identify simple series and to find and/or estimate the sum of a series using partial sums

CLO4.Students will be able to test the convergence of sequences and series, and to create MacLaurin series for transcendental functions.

Course Grading and Performance Criteria

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| 2 Exams  | **70 %**  |
| Final exam (cumulative) |  **30 %** |

**Topics Covered in the Course**

1. Hyperbolic Functions
2. Techniques of Integration
3. Polar Coordinates
4. Infinite sequences and series
5. Functions of several variables
6. Double Integrals

**Lecture Material and Schedule**

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| **Chapter** | **Section** | **Objective** |
| 7 | 7.6 | Inverse Trigonometric Functions |
|  | 7.7 | Hyperbolic Functions |
| 8 | 8.4 | Partial fractions |
| 8 | 8.7 | Improper Integrals |
| 10 | 10.1 | Sequences |
|  | 10.2-10.5 | Series – Tests of Convergence |
|  | 10.6 | Alternating series |
|  | 10.7 | Power Series |
|  | 10.8-10.10 | Taylor and Maclaurin Series and applications |
| 11 | 11.3-11.4 | Polar Coordinates; Graphing in Polar Coordinates |
| 14 | 14.1 | Functions of Several Variables |
|  | 14.2 | Limits and Continuity |
|  | 14.3 | Partial Derivatives |
|  | 14.4 | The Chain Rule  |
| 15 | 15.1-15.2 | Double Integrals over Rectangles/General Regions |
|  | 15.3 | Area by Double Integral |
|  | 15.4 | Double Integrals in Polar form |
|  | 15.6 | Moments and Centers of Mass |

**Policy on Cheating and Plagiarism**

Students caught cheating on an exam receive a grade of zero on the exam in their first cheating attemptand receive a warning. Students caught cheating for the second time will receive a grade of “F” in the course and another warning.Plagiarism on assignments and project work is a serious offense. If plagiarism is detected, a student will be subject to penalty, similar to the cheating case, which ranges from receiving a zero on the assignment concerned to an “F” in the course in addition to a warning.

#### **Attendance Policy**

1. Students are expected to attend all classes.

2.      For valid reasons, students may miss classes for a maximum that is equivalent to two regular weeks.

3.      When exceeding the maximum number of absences, it is the instructor’s prerogative to ask the concerned student to stop attending and drop the course. In this case, it is the student’s responsibility to drop the course; otherwise a grade of “F” or “NP” will be given.

4.      In exceptional justified cases (long illness, etc…), where absences exceed the maximum, the student has to petition to the department Chair to be allowed to stay in the course.

5.      Students are held responsible for all the material presented in the classroom, even during their absence.

**Withdrawal policy**

“Students wishing to withdraw from one or more courses must follow the withdrawal procedure provided by the Registrar’s Office. Students withdrawing from courses after the late registration period and before the withdrawal deadline will receive Ws for all the courses in progress.”

New Withdrawal Policy

1. A student who withdraws after the Drop/Add period and by the end of the 5th week of classes (10th day of classes for Summer Modules) will obtain a “WI” on that particular course.  The student may process such request directly through the Registrar’s Office.

**The deadline for WI is September 08, 2015.**

1. A student who withdraws from a course between the 6th week and the end of the 10th week of classes (18th day of classes for Summer Modules) will receive either a “WP” or a “WF”.  “WP” or “WF” will be determined by the instructor based on the achieved academic performance in that course till the time of withdrawal.
2. The “WI” and the “WP” will not count as a Repeat; whereas the   “WF” will count as a Repeat.

 “WI”, “WP” and “WF”  will not count towards the GPA calculation.

   WI is equivalent to Early Withdrawal

   WP is equivalent to Withdrawal/Pass

   WF is equivalent to Withdrawal/Fail

**The deadline for WP/WF is November 13, 2015.**

**Course Evaluation**

As per SAC decision on Jan. 10/Jan. 17, 2014: Students are urged to complete course evaluation, for improvement purposes.