# ILLINOIS INSTITUTE OF TECHNOLOGY

**SPRING 2009**  
**MATH 148 - 002**  
**CALCULUS/PRECALCULUS I**

## INSTRUCTOR
Dr. David J. Maslanka

## LECTURES
Monday, Wednesday, and Friday at 10:00 – 11:15 AM,  
Room 222 Alumni Memorial Hall.

## OFFICE HOURS
Monday, Wednesday, and Friday from:  
12:30 – 1:30 PM, and 3:30 – 5:00 PM, or by appointment,  
Room 234D E1 Building.

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## WEB SITE
www.iit.edu/~maslanka

## TEXTBOOK

## TOPIC | CHAPTER.SECTION
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The real numbers, the real line, absolute value, inequalities factoring polynomials | C1.1 – C1.3, Append B4
Division of polynomials, factorization theorems, solving inequalities involving polynomials | C12.2, C12.3, C12.5, C2.3, C2.4
Rectangular coordinates, the distance formula, graphing equations and analyzing their symmetry in the plane | C1.4 – C1.7
Functions: domain and range, increasing/decreasing, function composition, the Vertical Line Test, average rates of change | S1.1 – S1.3, C3.1 – C3.3
The δ-ε limit definition, limit laws, continuity, tangent lines, the derivative, differentiation formulas, applications | S2.1 – S2.5, S3.1 – S3.3, S3.7
Right triangle trigonometry, general trigonometric functions, fundamental identities, the unit circle | C6.1 – C6.5
Radian measure, angular and linear speed, graphs of the trigonometric functions | C7.1 – C7.5, C7.7
Sum and difference trigonometric identities, the double angle formulas | C8.1 – C8.4
Derivatives of trigonometric functions, the chain rule, implicit differentiations | S3.4 – S3.6
COURSE OBJECTIVES

The successful student will:

- Learn to use the Cartesian coordinate system and analytic geometry to investigate functions.
- Learn to perform algebraic and numeric operations with functions.
- Learn to solve linear, quadratic, and rational equations and
- Learn to use trigonometry and fundamental trigonometric
- Learn to compute limits of simple functions.
- Learn to identify differentiate polynomial, rational and trigonometric functions by using the definition and formulae.

COURSEWORK

- Homework
  Homework problems will be assigned regularly and collected on a weekly basis. Each assignment should be submitted complete and on time in order to receive full consideration. Assignments submitted more than one week late will receive no credit.

- Quizzes
  There will be a thirty minute quiz given on a weekly basis throughout the course of the semester. Each quiz will be based on the previous week’s lecture notes and homework assignment. Make-up quizzes will not be given. However, the lowest quiz score will be dropped in the calculation of the semester quiz average. Missed quizzes will be assigned a grade of zero.

- Exams
  There will be three midterm exams and a mandatory final examination. Students will be given at least one week advance notice of the date of each of the midterm examinations in class. The time and date of the two-hour final examination is to be determined by the university and will be posted on the web page:
  http://www.enrollment.iit.edu/calendar/futuredates/

EVALUATION GRADE SCALE

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
<td>A</td>
</tr>
<tr>
<td>Quizzes</td>
<td>10%</td>
<td>B</td>
</tr>
<tr>
<td>Midterm Exams</td>
<td>54%</td>
<td>C</td>
</tr>
<tr>
<td>Final Exam</td>
<td>26%</td>
<td>D</td>
</tr>
</tbody>
</table>

A : 85 - 100
B : 74 - 84
C : 60 – 73
D : 55 - 59
E : 0 - 54
NOTES

- Attendance will be taken at every class session this semester. Students are required to attend all sessions and to arrive for class on time. A student who attends and participates in class regularly will be awarded “bonus points” on examinations. The final course grade of a frequently absent student may be lowered for “nonparticipation” at the discretion of the instructor.

- Illinois Institute of Technology expects students to maintain high standards of academic integrity. Students preparing for the practice of a profession are expected to conform to a code of integrity and ethical standards commensurate with the high expectations that society places upon the practitioners of a learned profession. Therefore, incidents of cheating, plagiarism, or interference with the work of others during an examination will not be tolerated. Such acts of academic dishonesty will be reported to the chair of the Department of Applied Mathematics and to the Dean of Students and may be grounds for immediate dismissal from the class with a grade of E.

- During all course lectures and examinations, students are prohibited from playing all personal music/video devices. This prohibition extends to, but is not limited to, all iPods, MP3 players, CD players and notebook computers. All cell phones should also be silenced before the start of class each day.