Integrated Calculus I Fall 05-1
Group S Course Information

Overall plan

There are 42 class sessions and 14 laboratory sessions in the Fall term.
6 sessions are reserved for two midterm exams and four reviews.
So there will be 36 substantive sessions.
The term is divided into three phases, each phase culminating in a review session and an examination.

Phase I Functions and their Derivatives
Begin: Monday August 30th.
End: Friday October 1st.
14 sessions, 5 labs.
Review I, Wednesday September 29th.
Exam I: Friday October 1st.

Phase II Motion, Vectors and Parametric Equations
Begin: Monday October 4th.
End: Friday November 5th.
15 sessions, 5 labs.
Review II, Wednesday November 3rd.
Exam II: Friday November 5th.

Phase III Applications of the Derivative
Begin: Monday November 8th.
End: Friday December 10th.
13 sessions, 4 labs.
Review III, Wednesday December 8th and Friday December 10th.
Final Examination:
Tuesday December 14th in Lawrence 120 at 4pm; two hours
• Classes

CRN 19561: George Sparling sparling@twistor.org
Three classes a week in BE621: Mondays, Wednesdays and Fridays: 11.00-11.50am.

• Recitations

CRN 21623: Marie Hufford mahst61@pitt.edu
Each Tuesday: 11.00-11.50am in Benedum 525.

CRN 25008: Dana Mihai dam33@pitt.edu
Each Tuesday: 11.00-11.50am in BE 722.

• Laboratories

Sparling, Hufford, Mihai
Each Thursday: 11.00-11.50am in GSCC138.
Grading

Your grade will be curved and based on your total score only, if you pass the Final Exam, except that the Mathematics Department’s one-letter grade rule will be in effect:

- Your final grade cannot be better than your grade in the final by more than one letter grade. So, for example, if you get a C on the final, the best grade you could get would be a B+.
- If you pass the Final (i.e. C or better), you can expect a grade in the range A+ to B-.
- If you fail the Final (i.e. C- or worse), you can expect a grade in the range C+ to F.

Grading scheme

<table>
<thead>
<tr>
<th>Category</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team and Personal Dossiers:</td>
<td>300</td>
</tr>
<tr>
<td>Graded Homework assignments:</td>
<td>300</td>
</tr>
<tr>
<td>Quizzes:</td>
<td>150</td>
</tr>
<tr>
<td>Midterm exams:</td>
<td>250</td>
</tr>
<tr>
<td>Final exam:</td>
<td>200</td>
</tr>
<tr>
<td>Maximum possible score:</td>
<td>1200</td>
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Textbook

The textbook for this course is Calculus by Elgin H. Johnston and Jerold C. Mathews, published by Addison Wesley ISBN 0-321-00682-8. We cover the material of the first four chapters and chapter five up to section 5.4, together with appendices A1-A4.
Guiding Principles

At all stages the development of your intuition will be fostered: use of pictures, relation to the real world, extrapolation from simple examples to the general case. Rigor will be maintained, but at a reasonably informal level (no $\epsilon - \delta$s). Numerical approximations will be discussed and used. Whenever possible, the errors in such approximations will be analyzed.

Problem solving skills will be developed. Word problems from real life and connected to the other courses in the integrated curriculum.

At least four kinds of technology will be available to you: graphing calculators, Microsoft Excel, Maple and Matlab. You will be encouraged to be selective in your use of technology, learning to use the right tool (or no tool at all) to achieve the desired result. Every effort will be made to ensure that you are comfortable with the various calculational aids. However at the same time, we are determined to provide a solid grounding in mathematics: we will try not to confuse the tool and the theory.

Throughout the term, you will be required to maintain a dossier of computer workbook files, together with written work, containing the results of projects completed in class and at home, either individually, or as part of a team. Some projects will be returned to as more theoretical tools or more data become available for the student to use. You should submit your dossier at the end of each Phase and at the end of term, for grading.

Typically, computer assignments for each class will be carried out in teams of three. Some provision will be made for rearranging teams, if necessary, at the end of each Phase of the term.

The course material will be written up in HTML and be available on the Web. All computer and homework assignments will be written up for the Web, so as to be available at all times.