Rationale: This course is designed to prepare students to follow the biomedical physics courses by providing training in specific, applied topics of mathematics.

Prerequisite: PHY 2130/31, PHY 2140/41, MAT 2010 (Calculus I)
Co-requisite: MAT 2020 (Calculus II)

Lecture hours/Location: M W 11:45 am – 1:35 pm., Rm. 245 Physics Bldg.

*Certain topics including Statistics will be covered through Handouts.

Lecturer: Punya Talagala
Office: Rm.262 Physics Building
Telephone: (313)577-8220
E-mail: punya@wayne.edu
Office Hours: M W 1:45 p.m. – 2:45 p.m., or by appointment

Tentative Topics
- Review of Pre-Calculus and Fundamentals of Calculus
- Complex Numbers
- Vector Algebra, Scalar and Vector Products
- Differential Equations; first order and second order with constant coefficients
- Partial differentiation, Partial differential equations
- Determinants, Matrices, and their applications
- Spherical and Cylindrical coordinates
- Integration and applications, Net change, Integration in 2D and 3D, line integrals, volume integrals, Gauss’ Law, etc.
- Taylor series and approximations
- Vector Calculus, Differentiation and Integration of Vectors
- Introduction to Probability and Fundamentals of Statistics

Exam Schedule

| Exam 1     | Wednesday 02/13/08 |
| Exam 2     | Wednesday 03/19/08 |
| Final Exam | Thursday 04/24/08 – 10:40 am. – 1:10 pm |

<table>
<thead>
<tr>
<th>Grade Schedule</th>
<th></th>
<th>Grading Scale</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>20%</td>
<td>A</td>
<td>87 – 100%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>20%</td>
<td>B</td>
<td>73 – 86%</td>
</tr>
<tr>
<td>In-class quizzes</td>
<td>15%</td>
<td>C</td>
<td>60 – 72%</td>
</tr>
<tr>
<td>Homework</td>
<td>20%</td>
<td>D</td>
<td>47 – 59%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
<td>F</td>
<td>Below 47%</td>
</tr>
</tbody>
</table>