### Instructor
Dr. David J. Maslanka

### Lectures
Monday, Wednesday, and Friday at 8:35 – 9:50 AM, Room 123 Engineering 1 Building.

### Office Hours
Monday, Wednesday, and Friday from: 11:30 AM – 12:30 PM, and 1:45 – 3:00 PM, or by appointment, Room 204 E1 Building.

### Phone
(312) 567-5342

### Email
maslanka@iit.edu

### Website
http://mypages.iit.edu/~maslanka/

### Textbook

---

**TOPIC** | **CHAPTER.SECTION**
--- | ---
Elementary Topics in Plane and 3-D Euclidean Geometry: Angles and lines, triangles, the Pythagorean Theorem, areas of polygons and circles, similarity, volume, Compass and Straight–edge constructions | Handouts, 6.1 – 6.5
Right Triangles: Right Triangle Trigonometry, vectors, applications | 7.1 – 7.4
Oblique Triangles and Trigonometry: General trigonometric functions, the Laws of Sines and Cosines, Solving Oblique Triangles, proof of Hero’s Formula | 8.1 – 8.5
Circles, Spheres, 3-Dimensional Coordinate Systems & Solar Geometry: Radian Measure, Arc Length and Rotation, Longitude and latitude, linear distances between points in space and surface distances between points on a sphere, the angle at which solar radiation reaches the surface of the Earth | Handouts, 14.1 – 14.3
Graphing in the Coordinate Plane: Cartesian & polar plotting of trigonometric functions et. al., converting equations of curves between rectangular and polar coordinates systems | 15.1, 15.2, 15.4, 15.6
Analytic Geometry of Lines and Conics:
Equations of straight lines and their slopes, the angle between two lines, the distance between points, the distance from a point to a line, equations of the conic sections: the parabola, ellipse and hyperbola. .................................................. 22.1 – 22.6

COURSE OBJECTIVES

The successful student will:
• Learn to prove basic theorems of Euclidean geometry.
• Learn to measure the areas of polygons and the volumes of polyhedra and that of other basic shapes such as cylinders, cones and spheres.
• Learn to solve right triangles using basic trigonometry.
• Learn to solve oblique triangles, including those satisfying conditions which result in the ambiguous case, by applying the Law of Sines and/or the Law of Cosines.
• Learn to plot graphs of functions in the plane, including trigonometric ones, in both the rectangular and polar coordinate systems.
• Learn to find the equations of lines, to analyze their slopes and to measure the angles made at their points of intersection.
• Learn to identify and graph the equations of the conic sections in the coordinate plane.

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.

• Worksheets
  Worksheet quizzes will be administered on a weekly basis this semester. The problems on each worksheet are to be solved in class during the corresponding workshop session and complete solutions should be submitted at the end of the class period by each student – unless otherwise indicated. Students are encouraged to work with their classmates while solving the worksheet problems and to discuss their doubts with the course instructor and the teaching assistant. The worksheet problems should provide all students a good source of review material when preparing for the course examinations.

• Exams
  There will be two midterm exams and a mandatory final examination. Students will be given at least one week’s advance notice as to the scheduled date of each midterm examination in this class. The two-hour final examination will be administered on Monday, December 3rd at 8:00 AM.
EVALUATION

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
<th>Grade</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
<td>A</td>
<td>85 – 100</td>
</tr>
<tr>
<td>Worksheets</td>
<td>25%</td>
<td>B</td>
<td>74 – 84</td>
</tr>
<tr>
<td>Exams</td>
<td>65%</td>
<td>C</td>
<td>60 – 73</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D</td>
<td>50 – 59</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E</td>
<td>0 – 49</td>
</tr>
</tbody>
</table>

NOTES

- Attendance will be taken at the start every class session this semester. Students are expected to attend each session and to arrive for class on time. The final course grade of a frequently absent student may be lowered for “nonparticipation” at the discretion of the instructor. Regular class participation, including the presentation of solutions to homework problems in class, will have a positive influence on the final grade of a "borderline" student.

- 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 Dean of Students and may be grounds for immediate dismissal from the class with a grade of E.

- Reasonable accommodations will be made for a student with a documented disability. In order to receive such considerations, the student must obtain a Letter of Accommodation from the Center for Disability Resources. He/she should then schedule an appointment to discuss the matter with the course instructor as early in the term as possible. The Center for Disability Resources (CDR) is located in the Life Sciences building, Room 218. Telephone (312)567-5744 or email disabilities@iit.edu for further details.

- During all course lectures, workshop sessions and examinations, students are prohibited from listening to audio associated with any personal music/video devices. This prohibition extends to all iPods, iPads, MP3 players, and notebook computers. Students shall not access their cell phones to send or receive phone or text messages while class is in session.