Course Syllabus

Department: Science and Technology

Date: 12/12/12

I. Course Prefix and Number: TECH 105

Course Name: Engineering Drawing I

Credit Hours and Contact Hours: 3 credit hours / 6 contact hours

Catalog Description including pre- and co-requisites:

This course introduces the fundamental concepts related to technical drawing and hand drafting. Topics that will be explored include drawing equipment, sketching, line weights, lettering, geometric constructions, orthographic projection & multi-views, axonometric & isometric views, shading, dimensioning, sections, and working drawings. Architectural floor plans, elevations, sections, & details will also be examined.

Relationship to Academic Programs and Curriculum including SUNY Gen Ed designation if applicable:

The course is required for A.A.S. Architectural Technology & Building Sciences and A.A.S. Mechanical Technology. Students in other programs may take the course as a general elective.

II. Course Student Learning Outcomes:

Students will:
1. Name, use, and maintain common drafting tools and materials.
2. Use freehand sketching to study objects and plan drawing layouts.
3. Use line weights to improve drawing legibility.
4. Use the single stroke gothic lettering style to annotate drawings; write letters and numbers at the proper size and shape; produce the proper spacing of letters and words.
5. Use geometric construction as a design and layout tool.
6. Use orthographic projection and multi-view drawings to describe complex three-dimensional objects.
7. Construct axonometric, isometric, and similar pictorial views of three-dimensional objects.
8. Apply shading to make pictorial drawings more legible and realistic.
9. Identify and properly apply a variety of dimensioning methods.
11. Plan, produce, and assemble working drawings.
12. Draw and dimension architectural floor plans, elevations, sections, and details.
College Learning Outcomes Addressed by the Course:

- Writing
- Computer literacy
- Oral communications
- Ethics/values
- Reading
- Citizenship
- Mathematics
- Global concerns
- Critical thinking
- Information resources

III. Assessment Measures:

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<thead>
<tr>
<th>Identified College Learning Outcomes</th>
<th>Specific Assessment Measures</th>
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<tbody>
<tr>
<td>Reading</td>
<td>Homework questions related to textbook chapters will be assigned and evaluated weekly or bi-weekly.</td>
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<td>Information Resources</td>
<td>Selected questions on an exam will test the students’ knowledge of the conventions described in the ASME standards.</td>
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<td>Critical Thinking (Problem Solving)</td>
<td>Students will complete a drawing project in which they represent an existing three dimensional object using applicable drafting conventions such as orthographic, section, and/or paraline views (mechanical emphasis).</td>
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<tr>
<td>Ethics / Values (Professional Values)</td>
<td>Students will complete a drawing project in which they represent an existing building using applicable drafting conventions such as floor plans, elevations, and/or sections (architectural emphasis).</td>
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IV. Instructional Materials and Methods

Types of Course Materials:

Textbook, drawing equipment

Methods of Instruction:

Lecture, lab, demonstrations, reading assignments, drawing assignments, projects, formal and informal critiques

V. General Outline of Topics Covered:
1. Introduction
2. Sketching, Lettering, & Lines
3. Geometric Constructions
4. Orthographic Projection
5. Paraline Drawings
6. Shading
7. Dimensioning
8. Working Drawings
9. Architectural Floor Plans
10. Architectural Elevations
11. Architectural Sections & Details