Introduction to Engineering Technology

COURSE DESCRIPTION (INCLUDE REQUISITE/RESTRICTIONS):
Introduction to careers in engineering technology, with a focus on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Introduction to analytical and computational problem-solving techniques using the electronic calculator, the factor-label method of unit conversion, engineering graphs, and spreadsheets. Introduction to laboratory testing and technical reports through the integrated use of software packages. P: none.

COURSE LEARNING OUTCOMES

OFFICE OF THE REGISTRAR
Course Title: ET 10600 Introduction to Engineering Technology

ET 10600 Introduction to Engineering Technology, Class 3, Cr. 3

Introduction to careers in engineering technology, with a focus on academic, career, and personal development success strategies including lifelong learning skills and professional ethics. Introduction to analytical and computational problem-solving techniques using the electronic calculator, the factor-label method of unit conversion, engineering graphs, spreadsheets, and project management software. Introduction to laboratory testing and technical reports through the integrated use of software packages.

Prerequisites

None

Course Instructor

Dr. Barry Dupen

Associate Professor, Mechanical Engineering Technology

Department of Manufacturing & Construction Engineering Technology and Interior Design, ET 221

Indiana University – Purdue University Fort Wayne

2101 E. Coliseum Blvd., Fort Wayne, IN 46805-1499

Contact: (260) 481-6383 or dupenb@ipfw.edu

Justification for the Course

This 3-credit course replaces ENGR 10100 (1 credit) and MET 10600 (2 credits). The proposed course combines and revises the content of the two old courses, with a broad appeal to all Engineering Technology majors.

Course Objectives and Outcomes

A student who successfully fulfills the course requirements will have demonstrated the ability to:

1. Understand engineering technology disciplines, and the similarities and differences between engineering technology and engineering degree programs.
2. Understand technical approaches to societal problems, including sustainable use of energy and materials.
3. Understand and apply concepts of professional and ethical responsibility.
5. Convert units within and between the English and International systems of units.
6. Use dimensional analysis to yield units that are dimensionally correct for all physical quantities.
7. Solve engineering equations.
8. Work on a team to collect engineering laboratory data.
9. Write an engineering laboratory report using MS Word and MS Excel.
10. Make a team engineering presentation using MS PowerPoint.
11. Present engineering laboratory data using graphs.
12. Develop Gantt charts using MS Project.
Schedule (continued)

<table>
<thead>
<tr>
<th>Meeting</th>
<th>Topic</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>Introduction to spreadsheets / Lab #16</td>
<td>Johnson Ch. 9, 10, &amp;11</td>
</tr>
<tr>
<td>23</td>
<td>MS Excel spreadsheets / Lab #17</td>
<td>Johnson Ch. 9, 10, &amp;11</td>
</tr>
<tr>
<td>24</td>
<td>MS Excel trigonometric calculations &amp; charts / Lab #18</td>
<td>Johnson Ch. 9, 10, &amp;11</td>
</tr>
<tr>
<td>25</td>
<td>MS Excel calculations and x-y scatter charts / Lab #19</td>
<td>Johnson Ch. 9, 10, &amp;11</td>
</tr>
<tr>
<td>26</td>
<td>MS Excel calculations and histograms / Lab #20</td>
<td>Johnson Ch. 9, 10, &amp;11</td>
</tr>
<tr>
<td>27</td>
<td>MS Excel sorting and filtering / Lab #21</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>MS Project / Lab #22</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Student project team presentations</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>Final exam period</td>
<td></td>
</tr>
</tbody>
</table>