Laser and Fiber Optics Engineering Technology

The Laser and Fiber Optics Engineering Technology program is the only program of its kind in the metropolitan area and is accredited by the Technology Accreditation Commission of ABET (TAC of ABET). Additional information on TAC of ABET can be found at ABET, Inc., 111 Market Place, Suite 1050, Baltimore, MD 21202, telephone 410-347-7700 and www.abet.org.

Educational Objectives for the A.A.S. in Laser and Fiber Optics Engineering Technology

Graduates of the program will be prepared for the following career and professional accomplishments during the first three to five years following graduation:

1. Career Preparation and Advancement – Graduates will demonstrate mastery of the knowledge and skills needed for entry into or advancement in the field of Laser and Fiber Optics Engineering Technology.

2. Engineering Competence - Graduates will be competent technicians with problem solving and design skills, and have the ability to apply mathematics, science and modern engineering software to solve laser and fiber optics engineering problems.

3. Professional Skills - Graduates will have strong communication skills, and the ability to work successfully in teams in industry.

4. College Transfer - Graduates will meet the requirements for transfer into the junior year of a baccalaureate program in engineering technology.

5. Well-rounded Education - Graduates will demonstrate respect for diversity and knowledge of contemporary professional, societal, ethical, and global issues, and they will engage in life-long learning.

Recipients of the A.A.S. degree may choose to work in industry, continue their academic studies in a Bachelor of Engineering Technology program, or do both.

The program is under the supervision of the Department of Physics.

Lasers and fiber optics have become a multi-billion dollar industry. Medical, consumer electronics and telecommunication applications of lasers and fiber optics are expanding very rapidly. Lasers and fiber optics are finding use in an ever-widening variety of surgical, diagnostic and medical research situations. Communications between large computers are currently transmitted via fiber optics systems, particularly in large financial institutions. The long-distance telephone system in the United States is now nearly all fiber optic, as is international long distance. Cable television is using fiber as a “backbone” for their systems and is also delivering broadband Internet access through it. Fiber to the house is becoming a reality providing even greater speed.

Other applications of laser and fiber optics technology are already standard. For example, lasers are incorporated into the scanners used at retail checkout counters and libraries. For many fabrication requirements, especially for the materials of high technology, lasers are the instruments of choice. Laser interferometry is used for quality control and testing in applications as diverse as checking computer disks and airplane turbine fans.
Laser and Fiber Optics Engineering Technology
A TAC of ABET ACCREDITED ENGINEERING TECHNOLOGY CURRICULUM

REQUIREMENTS FOR THE A.A.S. DEGREE

GENERAL EDUCATION CORE REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>EN-101, 102</td>
<td>English Composition I, II</td>
<td>6</td>
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<tr>
<td>MA-114§</td>
<td>College Algebra and Trigonometry for Technical Students</td>
<td>4</td>
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<td>MA-128†</td>
<td>Calculus for Technical and Business Students</td>
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<td>PH-201*, 202*</td>
<td>General Physics I, II</td>
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<tr>
<td>SS- or HI-</td>
<td>Electives in Social Sciences or History (HI-100 series)</td>
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**Total Credits Required** ........................................... 64

REQUIREMENTS FOR THE MAJOR

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<thead>
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<tbody>
<tr>
<td>ET-910</td>
<td>Principles of Electrical Technology</td>
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<td>ET-210§, 220</td>
<td>Electronics I, II</td>
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<td>PH-231</td>
<td>Fundamentals of Lasers and Fiber Optics</td>
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<td>PH-232§</td>
<td>Laser and Electro-Optics Technology</td>
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<tr>
<td>PH-233</td>
<td>Laser/Electro-Optics Devices, Measurements and Applications</td>
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<td>PH-234</td>
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<td>PH-235**</td>
<td>Laser/Electro-Optics Projects</td>
<td>3</td>
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<tr>
<td>PH-236†††</td>
<td>Introduction to Computers in Electro-Optics</td>
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**Total Credits Required** ........................................... 64

**SUGGESTED SEQUENCE OF COURSES**

**Semester 1**

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<tr>
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Sub-total 14

**Semester 2**

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Sub-total 18

**Semester 3**

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<td>ET-210</td>
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Sub-total 16

**Semester 4**

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<td>PH-236</td>
<td>Introduction to Computers in Electro-Optics</td>
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<td>ET-220</td>
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</table>

Sub-total 16

**Total Credits Required** ........................................... 64

‡ See Understanding Program Requirements

††† MA-440, 441 may be substituted for MA-114, 128.

* Physics 301, 302 or 411, 412, 413 courses may be substituted for PH-201, 202.

** PH-931 may be substituted for PH-235.

+++ PH-240 may be substituted for PH-236.

§ Sections of this course denoted as “WT” may be taken to partially satisfy the Writing Intensive Requirement.

Two (2) Writing Intensive classes are required for the Associate degree. See page 71.

Note: On the basis of a Speech Placement Test administered to all students upon admission, up to two semesters of remedial speech may be required.