

INSTRUMENTATION (IT)

The Instrumentation program prepares graduates for careers as instrumentation technologists in such diverse areas as data acquisition, process control, system integration, installation, and repair for laboratories and medical facilities, as well as for industries such as power generation, chemical processing, pulp and paper processing, electronic fabrication, and heavy manufacturing.

The program is intended as a terminal degree program for students who do not intend to pursue an education beyond the baccalaureate level. A student who wishes to pursue a program which offers a greater level of preparation and which serves as an entry point for graduate study should consider the Bachelor of Science in Physics with Instrumentation option.

Bachelor of Science - Instrumentation Major MAJOR CODE: 41.9999

Program components for the Bachelor of Science degree with a major in Instrumentation include:

1. **APPLICABLE GENERAL UNIVERSITY REQUIREMENTS:**

To graduate, each student must:

- complete a minimum of 33 semester hours of the last 39 semester hours at ASU.
- complete 60 to 64 semester hours of upper level college/university credit (300-400 level courses).
- complete a minimum of 15 semester hours of upper (300/400) level coursework in his or her major at Athens State University, not including courses taken by consortium arrangement. School or departmental regulations may require more than 15 semester hours of coursework in the major at Athens State University.
- complete all course requirements for major(s).
- complete all course requirements for minor (if applicable).
- complete all of the general education requirements for the degree.
- attain an overall grade point average of 2.0, a 2.0 on all coursework attempted at Athens State University and at least a 2.0 in the major field. School or departmental regulations may require more than a 2.0 grade point average (see major requirements in each discipline).
- complete the total hour requirement as specified by the degree.
- complete the teacher certification requirements (if applicable).

EACH STUDENT MUST ASSUME RESPONSIBILITY FOR KNOWING THE ACADEMIC REQUIREMENTS FOR THE DEGREE THAT IS BEING PURSUED.

2. **GENERAL EDUCATION REQUIREMENTS:**

Area I. Written Composition 6 semester hours ___ __

Area II. Humanities/Fine Arts (12 semester hours)

At least one fine arts course 3 semester hours ___

At least one literature course 3 semester hours ___

Other Humanities/Fine Arts courses 6 semester hours ___ __

Area III. Mathematics and Natural Sciences (11 semester hours)

Precalculus Algebra or Precalculus Algebra & Trigonometry 3-4 semester hours ___

General Physics I (Calculus based) 4 semester hours ___

General Physics II (Calculus based) 4 semester hours ___

Area IV. History/Behavioral and Social Sciences (12 semester hours)

At least one history course 3 semester hours ___

Other History/Behavioral or Social Science courses 9 semester hours ___ __ __

TOTAL GENERAL EDUCATION REQUIREMENTS **41 SEMESTER HOURS**

3. **MAJOR PREREQUISITE COURSES (PRE-PROFESSIONAL)**
 Calculus I 4 semester hours ____
 General electives (Should be fulfilled by completion of introductory electronics courses (e.g., AC and DC circuits, semiconductor electronics, analog electronics, digital electronics, microprocessors, trouble shooting and repair).....19 semester hours ____ ____

TOTAL MAJOR PREREQUISITE HOURS: 23 SEMESTER HOURS
TOTAL GEN. ED. REQ. & MAJOR PREREQUISITE HOURS: 64 SEMESTER HOURS
4. **PROFESSIONAL COURSES:**
 MA 304 Calculus II 3 semester hours ____
 CIS 301 Problem Solving With Computers 3 semester hours ____
 CH 301 Introductory Chemistry 3 semester hours ____
 PY 303 Calculus Physics III (Modern Physics) 4 semester hours ____
 IT 306 Interfacing Techniques 4 semester hours ____
 IT 316 Applied Digital Design 4 semester hours ____
 IT 320 Math Methods for Instrumentation 4 semester hours ____
 IT 400 Advanced Analog Instrumentation 4 semester hours ____
 IT 401 Applied Data Communications 4 semester hours ____
 IT 420 Electro-Optics 4 semester hours ____
 IT 425 Introduction to Robotics 4 semester hours ____
 IT 440 Process Control Instrumentation 4 semester hours ____
 IT 441 Computer Instrumentation 4 semester hours ____
 Electives (Faculty Advisor approved courses in instrumentation, physics, mathematics or computer science) 8 semester hours ____ ____
TOTAL PROFESSIONAL HOURS: 57 SEMESTER HOURS
5. The Instrumentation major must complete a minimum of 15 semester hours of upper division 300/400 level instrumentation coursework at Athens State University.
6. A minor **is not** required.
7. **GENERAL ELECTIVES 7 semester hours ____ ____**
8. **TOTAL HOURS FOR GRADUATION 128 SEMESTER HOURS**

Instrumentation Minor

The minor must include the following courses or their approved equivalents of which at least 9 semester hours must be taken at Athens State University.

Introductory Level Electronics Courses (Should include background in AC and DC Circuits, Semiconductor Electronics, Analog and Digital Electronics, Microprocessors, and Troubleshooting)		15 semester hours
Calculus I, II (MA 303, 304)		8 semester hours
IT 306 Interfacing Techniques		4 semester hours
IT 316 Applied Digital Design		4 semester hours
IT Electives		8 semester hours
TOTAL HOURS FOR MINOR:		39 semester hours