

ELECTRONIC SYSTEMS TECHNOLOGIES

www.siu.edu/~asaocap



Southern
Illinois University
Carbondale

College of Applied Sciences and Arts - Off-Campus Academic Programs
Great Lakes Naval Training Center

2221 MacDonough Building 617 Room 204 Great Lakes, IL 60088

Phone 847-689-3055 Fax 847-689-3057

Program Advisor Email: ocapgl@siu.edu

ABOUT THE PROGRAM

The Electronic Systems Technologies Bachelor of Science degree program is designed to provide course work and experience in the areas of management and supervision in electronic-related fields.

This is a career-oriented degree program that meets the needs of individuals who have electronic-related work experience and/or technical certification training from military schools, technical institutes, or industry training programs.

Created with the working adult in mind, classes are held on Saturday and Sunday every other weekend. The 48 hour major is offered in 4 semesters, 12 hours each, over 16 months at various locations. (no main campus attendance required)

THE DEGREE PROGRAM

The degree program consists of three parts:

PART ONE:

A 48 semester-hour major with courses in a weekend format that spans four semesters.

PART TWO:

31 semester-hours of career electives that can be satisfied with previous military schools, community college, or technical school courses/degree.

PART THREE:

41 semester-hours of University Core Curriculum (general education) that can be completed from transfer credit from other accredited institutions, including community colleges, CLEP, DANTES, proficiency testing.

THE COURSES

- Introduction to Electronic Systems Technologies Research
- Optical Electronics
- Electronics Occupations Internship
- Application of Solid State Devices
- Digital Circuit Applications
- Microcontroller Applications Lecture
- Microcontroller Applications Laboratory
- Readings in Electronics Systems Technologies
- Electronics Industry Data Applications
- Applications of Technical Writing
- Fiscal Aspects of Electronics Systems Technologies
- Electronics Industry Labor-Management Relations
- Legal Aspects of Electronics
- Analysis of Issues in the Electronics Industry
- Communication Systems Management
- Career Development for Electronics Managers
- Management Problems in the Electronics Industry
- Current Trends in Electronics Systems Technologies

ELECTRONIC SYSTEMS TECHNOLOGIES

www.siu.edu/~asaocap



Southern
Illinois University
Carbondale

College of Applied Sciences and Arts - Off-Campus Academic Programs
Great Lakes Naval Training Center

2221 MacDonough Building 617 Room 204 Great Lakes, IL 60088

Phone 847-689-3055 Fax 847-689-3057

Program Advisor Email: ocapgl@siu.edu

COURSE DESCRIPTIONS

EST 300 – Introduction to Electronic Systems Technologies Research. An introduction to library resources, electronic media resources and formal academic writing styles common to electronic systems technologies research. Introduction to basic theories, concepts and practices pertinent to electronic systems technologies. Independent study.

EST 302 – Optical Electronics. This course is designed to provide the theory and practice necessary to introduce the student to the broad fields of fiber optics and optoelectronics. Fiber optics is the optical technology concerned with the transmission of radiant power through transparent fibers and optoelectronics pertains to devices that emit, modify, or respond to optical radiation. Applications of fiber optics and optoelectronics to communications, imaging and sensing will be emphasized, with a concentration on communications applications.

EST 319 – Electronic Occupations Internship. Internships may be performed in one of the following areas: (a) Biomedical Equipment Technology, (b) Communications Technology, (c) Computer Technology, or (d) Industrial Electronics Technology. Prerequisite: consent of department. Mandatory pass/fail.

EST 340 – Application of Solid State Devices. A technical and managerial approach to the practical application of discrete solid state devices and linear integrated circuits. The characteristics of these devices will be reviewed to assist the student in understanding their selection and application process.

EST 341 – Digital Circuit Applications. Applications of digital electronic devices and circuits in business and industry. Geared to the needs of the technical manager, this course builds upon the student's knowledge of basic electronics theory. Basic principles of subsystems are reviewed to assist the student in understanding their selection and application to business/industrial settings.

EST 342 – Microcontroller Applications Lecture. This course emphasizes microcontroller fundamentals and applications as seen from the standpoint of the technical manager. Microcomputer theory is introduced since microcontrollers are a subset of microcomputer technology. Basic characteristics and principles of microcomputers and microcontrollers will be reviewed to provide an understanding of applications in specific business and industrial settings. Prerequisite: EST 341.

EST 343 – Microcontroller Applications Laboratory. Laboratory experiences selected to reinforce microcontroller characteristics and applications in business and industry. Students sample microcontroller programming on operational microcontrollers and through the use of simulation software. Included is the theory of operation, the control of input and output devices, multi-controller communication, and program development and entry. Students will be required to purchase a microcontroller system ranging in cost between \$100-130. Prerequisite: EST 342 or concurrent enrollment in EST 342; Independent study.

EST 351– Readings in Electronic Systems Technologies. The use of written and electronic media resources relevant to electronic systems technologies and the development of an electronic systems technologies research bibliography. The use of bibliographic resources to produce written comparative or persuasive research reports. Independent study. Prerequisite: EST 300.

EST 365 – Electronics Industry Data Applications. The application of statistical data within the electronics industry to include an introduction to the basic statistical treatment of data, data sources and the design of statistical studies. Emphasis is on the principles and techniques of data analysis, synthesis, and utilization as applied to decision making in the electronics field. Student will gain experience in applying data to decision making through case studies and class projects.

ELECTRONIC SYSTEMS TECHNOLOGIES

www.siu.edu/~asaocap



Southern
Illinois University
Carbondale

College of Applied Sciences and Arts - Off-Campus Academic Programs
Great Lakes Naval Training Center

2221 MacDonough Building 617 Room 204 Great Lakes, IL 60088

Phone 847-689-3055 Fax 847-689-3057

Program Advisor Email: ocapgl@siu.edu

COURSE DESCRIPTIONS

ISAT 366 – Applications of Technical Writing. The course will increase students' abilities in communicating various workplace documents common to technical disciplines. Oral presentations use computerized presentation software. The course is designed to meet the writing portion of the college's Communication-Across-the-Curriculum initiative. A grade of C or better is required. Prerequisite: ENGL 101; restricted to Applied Sciences and Arts major.

EST 385 – Fiscal Aspects of Electronic Systems Technologies. An introduction to the types of fiscal problems encountered in the electronics industry. The course will address the diverse sizes and types of business within the field and will include an introduction to the accounting process. Emphasis will be given to financial management systems, financial analysis tools, cash flow management and budgeting procedures.

EST 387 – Electronics Industry Labor-Management Relations. A study of economic situations that affect labor-management relations in electronics-related career fields. Study will include the evolution of labor relations in the American electronics industry and interactive differences in labor-management relations from a global perspective. Laws that are common to both union and non-union employees will be emphasized.

EST 388 – Legal Aspects of Electronics. An introduction to the types of legal problems encountered in the electronics industry to include American legal heritage and legal rights. The course will emphasize the nature and classification of contracts, warranties, product liabilities, consumer protection and applicable employment laws.

EST 401 – Analysis of Issues in the Electronics Industry. The identification and study of current economic, regulatory or operational issues impacting the electronics industry. The use of both written and oral reports to present a critical analysis of selected topics. Independent study. Not for graduate credit. Prerequisite: EST 300.

EST 404 – Communication Systems Management. Coverage of a broad range of material that will introduce the student to maintenance, evaluation, installation, troubleshooting and management of communications equipment, with an emphasis on computer networks. This course will also provide advanced knowledge about the theory of operation, terminology and the underlying principles associated with the transmission of voice, data and video information through telephone, satellite and cellular radio communications equipment. Not for graduate credit.

EST 441 – Career Development for Electronics Managers. A study of elements to consider when seeking employment in an electronics career field. These elements include personal inventories and resumes, placement service and employment agencies, interviewing techniques, letters of application, references and employment testing. Emphasis will be placed on the roles of mentoring, membership in professional organizations, continuing education and other opportunities for professional growth throughout a career in the electronics industry. Each student will develop a portfolio including personal and professional information related in individual career goals. Not for graduate credit.

EST 450 – Management Problems in the Electronics Industry. The identification and study of problems related to management within the electronics industry. The application of electronic systems technologies theories, concepts and practices to the identified management problems. The use of written and electronic media research resources to produce a written problem solving report. Independent study. Prerequisite: 351 or 401.

EST 451 – Current Trends in Electronic Systems Technologies. This course is designed to familiarize the student with current managerial trends that support the installation, evaluation, repair and maintenance of electronic systems. Topics may include, but are not limited to, economic justification and cost control, quality control, and program improvement, compliance with codes, equipment control and evaluation and input to administration. This course is writing intensive and reflects the College's Communication-Across-the-Curriculum initiative. Not for graduate credit.

ELECTRONIC SYSTEMS TECHNOLOGIES

www.siu.edu/~asaocap



Southern
Illinois University
Carbondale

College of Applied Sciences and Arts - Off-Campus Academic Programs
Great Lakes Naval Training Center

2221 MacDonough Building 617 Room 204 Great Lakes, IL 60088

Phone 847-689-3055 Fax 847-689-3057

Program Advisor Email: ocapgl@siu.edu

CAREER POSSIBILITIES

Combining the Bachelor's Degree in Electronic Systems Technologies, with a Specialization in Electronics Management, and your military experience or other technical experience better prepares you for positions in management and supervision across the industry.

Below are just a few of the many career possibilities you could pursue.

- Telephone and Cellular Companies
- Television Cable and Broadcasting
- Computer Systems Support
- Network Installation and Administration
- Manufacturing Plants
- Engineering and Research Firms
- Hospitals and Biomedical Companies
- Transportation Companies

OFF-CAMPUS LOCATIONS

- Marine Corps Air Station Havelock, NC 28532 (252) 447-1688
- North Chicago Great Lakes, IL 60088 (847) 689-3055
- Naval Air Station Jacksonville, FL 32212 (904) 778-3130
- Marine Corps Air Station Jacksonville, NC 28540 (910) 449-6250
- North Island Coronado, CA 92178 (619) 435-6445

ELECTRONIC SYSTEMS TECHNOLOGIES

www.siu.edu/~asaocap



Southern
Illinois University
Carbondale

College of Applied Sciences and Arts - Off-Campus Academic Programs
Great Lakes Naval Training Center

2221 MacDonough Building 617 Room 204 Great Lakes, IL 60088

Phone 847-689-3055 Fax 847-689-3057

Program Advisor Email: ocapgl@siu.edu

Degree:	Bachelor of Science in Electronic Systems Technologies from Southern Illinois University Carbondale	
Classroom Location:	Life Long Learning Center SIU-CASA, Rm 204 2221 MacDonough Great Lakes, IL 60088	Life Long Learning Center SIU CASA Building 617 Rm 214
Program Length:	Major course work can be completed in 16 months for full-time students enrolled in 12 semester hours each semester	
Type of Courses:	12 accelerated lecture courses 4 independent study courses	
Course Length:	Lecture – each course meets for 3 weekends (attendance required) Independent Study – each one lasts for 16 weeks (must attend the portion of first lecture course of the semester for orientation with independent study instructor)	
Meeting Dates:	Flexible meeting dates to accommodate the work constraints of this specialized student population. Classes meet every other Saturday and Sunday. (Attendance to all classes is required.)	
Class Length:	Meets on Saturday and Sunday from 8:00AM to 4:50PM	
Cost:	\$225 per semester hour or \$675 per course	
Payment Options:	Tuition can be paid in full when enrolling or by the installment plan	
Financial Assistance:	Student Loans, Federal Pell Grants, GI Bill, and Illinois Veteran's Grant Benefits. Active Duty Military can use Tuition Assistance.	
Transcripts:	<u>Official Transcripts</u> from ALL post-secondary institutions ever attended must be received at this office by the end of the first semester. Failure results in a transcript hold and ineligibility to register for the following semester.	
Registration:	Once an application has been completed with a <u>non-refundable \$30.00 application fee</u> , and you have been officially admitted to the University, registration forms will be processed. This can take several weeks to complete.	
Books:	A detailed textbook list will be mailed with registration materials. Students are required to obtain their own textbooks. A list of textbook vendor options will be supplied.	

ELECTRONIC SYSTEMS TECHNOLOGIES

www.siu.edu/~asaocap



Southern
Illinois University
Carbondale

College of Applied Sciences and Arts - Off-Campus Academic Programs
Great Lakes Naval Training Center

2221 MacDonough Building 617 Room 204 Great Lakes, IL 60088

Phone 847-689-3055 Fax 847-689-3057

Program Advisor Email: ocapgl@siu.edu

Fall Semester 2009

EST 340	EST 341	EST 342
Application of Solid State Devices	Digital Circuit Applications	Microcomputer Applications
August 29 & 30	October 3 & 4	November 7 & 8
September 12 & 13	October 17 & 18	November 21 & 22
September 26 & 27	October 31 & November 1	December 5 & 6
Microcomputer Application Laboratory		
Course: EST 343 - Laboratory	Aug. 29 to Dec. 6 Due dates for reports established by instructor.	

Spring Semester 2010

EST 387	ISAT 366	EST 404
Electronics Industry Labor-Management Relations	Applications of Technical Writing	Communication Systems Management
January 9 & 10	February 20 & 21	March 27 & 28
January 23 & 24	March 6 & 7	April 10 & 11
February 6 & 7	March 20 & 21	April 24 & 25
Independent Study Classes - Research Paper		
Courses available: EST 300, EST 351, & EST 450	January 9 to April 25: Due dates for reports established by instructor.	

Summer Semester 2010

EST 385	EST 451	EST 302
Fiscal Aspects of Electronics Systems	Current Trends in Electronic Management	Optical Electronics
May 8 & 9	June 12 & 13	July 24 & 25
May 22 & 23	June 26 & 27	August 7 & 8
June 5 & 6	July 10 & 11	August 21 & 22
Independent Study Classes - Research Paper		
Courses available: EST 300, EST 351, & EST 450	May 8 to August 22: Due dates for reports established by instructor.	

Fall Semester 2010

EST 441	EST 388	EST 365
Career Development for Electronics Managers	Legal Aspects of Electronics	Electronics Industry Data Applications
August 28 & 29	October 2 & 3	November 6 & 7
September 11 & 12	October 16 & 17	November 20 & 21
September 25 & 26	October 30 & 31	December 4 & 5
Independent Study Classes - Research Paper		
Courses available: EST 300, EST 351, & EST 450	Aug. 28 to Dec. 5: Due dates for reports established by instructor.	

ELECTRONIC SYSTEMS TECHNOLOGIES

www.siu.edu/~asaocap



Southern
Illinois University
Carbondale

College of Applied Sciences and Arts - Off-Campus Academic Programs
Great Lakes Naval Training Center

2221 MacDonough Building 617 Room 204 Great Lakes, IL 60088

Phone 847-689-3055 Fax 847-689-3057

Program Advisor Email: ocapgl@siu.edu

ELECTRONIC SYSTEMS TECHNOLOGIES MAJOR 48 SEMESTER HOURS	UNIVERSITY CORE CURRICULUM REQUIREMENTS 41 SEMESTER HOURS	APPROVED CAREER ELECTIVES 31 SEMESTER HOURS
EST 302 - Optical Electronics	<p>Foundation Skills: (12 SH) ENGL 101-3* "C" Required ENGL 102-3* "C" Required MATH 108 or higher, except Math 114, 120, 300i-3 SPCM 101-3</p> <p>Disciplinary Studies: (23 SH) Science-6 SH: (Select one course from each group) Group 1 Group 2 CHEM 106-3 PLB/ZOOL 115-3 GEOG 104-3 PLB 117-3 GEOG 111/112-3 PHYS 101-3 PHYS 103-3</p> <p>Social Science-6 SH: (Select only one history course) ANTH 104-3 POLS 114-3 ECON 113-3 PSYC 102-3 GEOG 100-3 SOC 108-3 GEOG 103-3 HIST 110-3 HIST 112-3</p> <p>Humanities-6 SH: (Select any two courses) AD 207a-3 AD 207b-3 AD 207c-3 CLAS 230-3 CLAS 270-3 CLAS 271-3 EA 102-3 ENGL 121-3 ENGL 204-3 HIST 101a-3 HIST 101b-3 LING 200-3 PHIL 102-3 PHIL 103a-3 PHIL 103b-3 PHIL 104-3 PHIL 105-3</p> <p>Fine Arts-3 SH: (Select any one course) AD 100a-3 AD 100b-3 AD 101-3 CP 101-3 ENGL 119-3 ENGL 206 a,b-3 FL 200 a,b,c-3 HIST 201-3 MUS 103-3 THEA 101-3</p> <p>Human Health-2 SH: (Select any one course) BIOL 202-2 FN 101-2 HED 101-2 KIN 101-2 PHSL 201-3 REHB 205-3</p> <p>Integrative Studies: (6 SH) Multicultural: Diversity in the U. S.-3 SH: (Select any one course) AD 227-3 AD 267-3 AJ 203-3 ANTH 202-3 ANTH 204-3 BAS 215-3 BAS 227-3 ENGL 205-3 FR 200-3 HIST 202-3 HIST 210-3 KIN 210-3 LING 201-3 MCMA 204-3 MUS 203-3 PHIL 210-3 PHIL 211-3 POLS 215-3 PSYC 223-3 PSYC 233-3 SOC 215-3 SOC 223-3 SPCM 201-3 WMST 200-3 WMST 201-3 WMST 223-3</p> <p>Interdisciplinary-3 SH: (Select any one course) AD 307i-3 AD 317i-3 AGRI 300i-3 ARC 314i-3 BAS 332i-3 CLAS 315i-3 ECON 302i-3 ENGL 304i-3 ENGL 307i-3 ENGR 301i-3 ENGR 303i-3 FL 301i-3 GEOG 300i GEOG 303i-3 GEOG 310i-3 GEOL 327i-3 GEOL 328i-3 GEOL 329i-3 GEOL 330i-3 JRNL 306i-3 JRNL 314i-3 LAC 300i-3 LING 320i-3 MATH300i-3 MUS 303i-3 PHIL 303i-3 PHIL 307i-3 PHIL 308i-3 PHIL 309i-3 PLB 301i-3 PLB 303i-3 POLS 314i-3 POLS 332i-3 POLS 352i-3 POLS 262i-3 SOC 304i-3 SOC 306i-3 SPCM 301i-3 WMST 307i-3 WMST 320i-3 ZOOL 312i-3</p>	<p>Formal course work or its equivalent that is technical, managerial or supervisory in nature and related to Electronic Systems Technologies.</p>
EST 340 - Application of Solid State Devices		
EST 341 - Digital Circuit Applications		
EST 342 - Microcontroller Applications Lecture		
EST 343 - Microcontroller Applications Lab.		
EST 365 - Electronics Industry Data Applications		
EST 385 - Fiscal Aspects of Electronic Systems Technologies		
EST 387 - Electronics Industry Labor-Mgmt. Relations		
EST 388 - Legal Aspects of Electronics		
EST 404 - Communication Systems Management		
EST 441 - Career Development for Electronics Managers		
EST 451 - Current Trends in Electronic Systems Technologies		
ISAT 366 - Applications of Technical Writing		
9 Semester Hours of Independent Study (3 of the following 5)		
EST 300 - Introduction to Electronic Systems Technologies Research		
EST 319 - Electronic Occupations Internship (a - d)		
EST 351 - Readings in Electronic Systems Technologies		
EST 401 - Analysis of Issues in the Electronics Industry		
EST 450 - Management Problems in the Electronics Industry		