

IDAHO STATE UNIVERSITY COLLEGE OF TECHNOLOGY

PROGRAM TITLE: ELECTRONIC SYSTEMS TECHNOLOGY

Information included in this handout may change at anytime without notice and should not be considered as a binding contract between Idaho State University and students.

Program Options & Length:

Electronic Systems Technology, Associate of Applied Science	6 Semesters
Electronic Systems with Laser option, Associate of Applied Science	6 1/2 Semesters
Electronic Systems Technology, Advanced Technical Certificate	6 Semesters

**Entry dates
for this program:**
August and January

**Approximate cost
for books, tools,
& supplies:**
\$2,965 to \$3,095
(See below for registration
fees.)

**For more information,
Contact:**
Idaho State University
College of Technology
Student Services Office
Campus Box 8380
Pocatello, ID 83209-8380
1.208.282.2622
e-mail: ctech@isu.edu
www.isu.edu/ctech/

Job Description: Electronic Technicians may perform their duties in the manufacture of electronic equipment, research and development of new equipment and the repair and maintenance of existing equipment, modify computers and other electronic equipment. They may perform tests and inspections of electronic equipment on assembly lines; test, adjust and repair completed equipment; make complex tests or set up testing equipment; build complete experimental models of equipment; make complex tests of newly developed instruments and instrument groups called systems; determine how equipment will respond under various conditions such as heat and cold; inspect equipment while in use and perform preventative maintenance; locate trouble and either repair or replace defective parts; read diagrams and follow mathematical formulas in diagnosing problems and carrying out completed complicated wiring plans used in electronic equipment.

Aptitudes and Interests: Have an above average ability in mathematics and problem solving, learn and apply scientific principles and technical knowledge easily, handle and manipulate tools and equipment skillfully, perform mathematical computations accurately, evaluate data revealed by tests and observations and work to precise standards and tolerances, use judgment in planning sequence of operations and in selecting proper tools and materials, interested in work of a scientific and technical nature, like to do mechanical work requiring precise measurements and great accuracy, be willing to assume responsibility for quality of work, enjoy working out problems on own and able to follow through on an assignment with a minimum of supervision.

Helpful High School Courses:

Algebra/ Trigonometry English Chemistry Drafting Electricity Geometry Physics

TUITION AND FEES

Fees apply to the current Idaho State University fee schedule located at <http://www.isu.edu/finserv/costinfo.shtml>.

Fees include **mandatory** student health insurance, any student with existing health insurance coverage may be exempt and waivers are available at <http://www.isu.edu/stuhlth/insurance/pp.html>.

ADMISSION STEPS

- Complete and return an Application for Admission along with a check or money order for \$40 (non-refundable), payable to Idaho State University. You may also apply online via the Idaho State University home page: www.isu.edu . Click on Prospective Students.
- Submit official college transcripts, if applicable, from each accredited institution of higher education that you have attended.
- Submit an official copy of your high school transcript or GED scores (Not required if you have completed and submitted proof of 14 or more academic credits from an accredited institution of higher education.)
- Meet with a College of Technology counselor, if desired, to obtain more in-depth information. To make an appointment, call (208)282-2622.
- Either:
 1. Complete the COMPASS Placement test. This test enables us to place you in the appropriate classes to enhance your success in college.
 2. Submit ACT/SAT scores, valid for seven (7) years from the date of testing. ACT scores are not required for acceptance to the College of Technology, however they are required to qualify for some scholarships
- Apply for financial aid if needed. Questions, call (208) 282-2756.
- Former College of Technology students who have been out of school one semester or more must complete the necessary forms in the Student Services office before returning to the program. Re-entering student must meet the requirements as outlined in the catalog effective at the date of their re-enrollment.

Idaho State University subscribes to the principles and laws of the State of Idaho and the federal government, including applicable executive orders pertaining to civil rights. All rights, privileges, and activities of the University are made available without regard to race, creed, color, sex, age, disability, national origin or veteran status. The University is an Equal Opportunity and Affirmative Action employer. Evidence of practices that are not consistent with such a policy should be reported to: Leonard E. "Buddy" Frazier, Affirmative Action Director; Museum Building, Room 422 Box 8315.E-mail frazleon@isu.edu, (208) 282-3964.

Idaho State University is committed to equal opportunity in education for all students, including those with documented disabilities. If you have a diagnosed disability or if you believe that you have a disability that might require reasonable accommodations, please contact: Dennis J. Toney, ADA Disabilities and Resource Center Director; Gravely Hall, Room 123 Box 8121.E-mail tonedenn@isu.edu, (208)282-3599.

Licensure, certification, and/or employment applications related to some degree programs require students to disclose any history of criminal prosecution which may include the student's driving record. Students who have a criminal history are strongly encouraged to contact the licensing agency or meet with the coordinator of the program they are interested in, prior to beginning classes, to discuss potential impediments to licensure, certification, or employment.

IDAHO STATE UNIVERSITY COLLEGE OF TECHNOLOGY

PROGRAM TITLE: ELECTRONIC SYSTEMS TECHNOLOGY**COURSE SEQUENCE**

1st Year - 1st Semester

ATC	AAS	Course #	Course Title	Credits
x	x	ELTR 141	Applied Mathematics I	4
x	x	ELTR 153	Electronic Theory	5
x	x	ELTR 155	Electronic Laboratory	5
x	x	COMM 101	Principles of Speech	3

1st Year - 2nd Semester

ATC	AAS	Course #	Course Title	Credits
x	x	ELTR 142	Applied Mathematics II	4
x	x	ELTR 154	Electron Control Devices Theory A	5
x	x	ELTR 156	Electron Control Devices Laboratory A	5
x	x	PHYS 101	Elements of Physics	3
x	x	PHYS 101L	Elements of Physics Lab	1
x	x	TGE 158	Employment Strategies	2

2nd Year - 3rd Semester

ATC	AAS	Course #	Course Title	Credits
x	x	ELSY 251	Systems Analog Digital Theory	7
x	x	ELSY 253	Systems Analog Digital Laboratory	5
x	x	ELSY 264	Introductory Calculus	4
x	x	ELSY 269	Electronic Drafting I	2

2nd Year - 4th Semester

ATC	AAS	Course #	Course Title	Credits
x	x	ELSY 267	Radio Frequency Transmission Theory	7
x	x	ELSY 268	Radio Frequency Transmission Laboratory	5
x	x	ELSY 270	Electronic Drafting II	2
X	X	ELSY 265	Computer Fundamentals and Introduction to Programming	4

2nd Year - Summer Session (Optional)

ATC	AAS	Course #	Course Title	Credits
	#	ELSY 331	Laser Systems / Optics Theory	4
	#	ELSY 332	Laser Systems / Optics Laboratory	4

3rd Year - 5th Semester

ATC	AAS	Course #	Course Title	Credits
x	x	ELSY 371	Advanced Math of Intermediate Electronics	4
x	x	ELSY 373	Advanced Digital Theory	5
x	x	ELSY 375	Advanced Digital Laboratory	5

3rd Year - 6th Semester

ATC	AAS	Course #	Course Title	Credits
x	x	ELSY 372	Calculus for Advanced Electronics	4
x	x	ELSY 374	Advanced Pulse Theory	5
x	x	ELSY 376	Advanced Pulse Laboratory	5

Students will also need to schedule the following classes if they are seeking the Associate of Applied Science degree: ENGL 101; three (3) credits from Goals 6, 7, 9, 10A, 11, or 12.

IDAHO STATE UNIVERSITY COLLEGE OF TECHNOLOGY

PROGRAM TITLE: ELECTRONIC SYSTEMS TECHNOLOGY**BOOK AND TOOL LIST**

Textbooks may be purchased at the University Bookstore located at the Pond Student Union - Building #14. Textbooks may also be purchased or reserved on-line through www.efollett.com or the bookstore's website at www.isu.edu/bookstor. Payments may be made with cash, check, VISA, Mastercard, American Express, or Discover. A shipping charge will be added for mail orders. See the bookstore's website for more information on purchasing or reserving books or for refund policy information. **Save Your Receipts!**

Approximate total book and tool costs for this program's options are listed below.
Additional book costs will vary depending on the courses taken to fulfill
general education requirements for the AAS degree.
For a breakdown of books by individual class requirements, you must check your course curriculum.

NOTE: PRICES ARE SUBJECT TO CHANGE AT ANYTIME WITHOUT PRIOR NOTIFICATION

****SEE INSTRUCTOR BEFORE PURCHASING****

FIRST SEMESTER – ELECTRONICS CORE

I. BOOKS & SUPPLIES:

DESCRIPTION	APPROXIMATE PRICE	
ELECTRONICS & COMPUTER MATH	0131711372	149.00
GROB'S BASIC ELECTRONICS	0072974751	137.00
Engineering Computational paper		7.00
Single subject spiral notebook		3.00
Jump Drive		20.00
Lab Book		14.00
Lab Lock Deposit (refundable at the end of 2 nd Semester)		(5.00)
TOTAL BOOKS & SUPPLIES – FIRST SEMESTER		\$330.00

II. LAPTOP/NOTEBOOK COMPUTER:

MINIMUM CONFIGURATION GUIDELINES

Processor	Intel Core 2 Duo processor T5500 (1.66GHz)
Memory (RAM)	2GB
Hard Drive	80GB
Optical Drive	CD-RW/DVD
Wireless	802.11b/g
Ethernet	1Gb
Battery Life	3-4 hours
Warranty	3 years
Operating System	Windows Vista Home Premium
Software, Office Suite	MS Office Pro 2007

Laptop/Notebook Computer and Software (approximate minimum cost)	\$890.00
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ISU Bookstore offers the Windows Vista operating system upgrade for \$90.00 and MS Office Professional 2007 for \$200.00. (Check with Bookstore for updated prices.)

Computer Account (needed on all wireless computers). Purchase at Rendezvous Building (#38) Computer Lab or Business Administration Building (#5) Basement A18.	\$25.00
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****NOTE: DO NOT PURCHASE TOOLS UNTIL AFTER STUDENT ORIENTATION****

III. TOOLS

DESCRIPTION	APPROXIMATE PRICE
Wire stripper	4.50
Diagonal Pliers	12.00
Needle/long nose pliers 4 1/2"	10.00
Screwdriver, slotted 3/16 & 1/4" tips	6.25
Screwdriver, Phillips #0 & #1 tips	6.50
Screwdriver, Precision/Jewelers set	5.00
Alligator clip leads	4.20
Soldering Aide	3.25
Soldering Iron/pencil 25 Watt (or less) with holder	25.00
Solder, 1/4 lb 60-40 Rosin Core	4.25
Solder wick (braided flat copper wire)	3.75
Desoldering bulb or pump, 060820 Electronix Express or equivalent	6.00
Circuit board holder, Helping Hands	8.10
Safety glasses	8.00
Proto Board or Bread Board	25.00
Scientific Calculator	15.00
Tool Box with lock (large enough to store volt-ohm meter)	20.00
Digital Volt-Ohm-Millammeter (see specifications below)	65.00
TOTAL TOOLS – FIRST SEMESTER	\$231.80

DIGITAL VOLT-OHM-MILLAMPMETER SPECIFICATIONS:

DC Voltage ranges = 2V, 20V, 200V, 600V
 Resistance ranges = >200Ω, 2KΩ, 200KΩ, 2MΩ, 20MΩ
 AC Current ranges = >200mA, 20A
 DC Current ranges = >20μA, 200μA, 200mA, 10A
 Input Impedance = 10 – 12 MΩ

APPROXIMATE TOTAL BOOKS, COMPUTER, AND TOOLS - FIRST SEMESTER	\$1,476.80
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SECOND SEMESTER - ELECTRONICS CORE**I. BOOKS & SUPPLIES**

DESCRIPTION	APPROXIMATE PRICE	
ELECTRONIC DEVICES:CONV CURRENT VERS (W/CD)	0132429733	140.00
DIGITAL ELECTRONICS (W/2 CDS)	0132435789	137.00
Engineering Computational paper		7.00
Single subject spiral notebook		3.00
TOTAL BOOKS & SUPPLIES – SECOND SEMESTER		\$287.00

Computer Account (needed on all wireless computers). Purchase at Rendezvous Building (#38) Computer Lab or Business Administration Building (#5) Basement A18.	\$25.00
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II. TOOLS

DESCRIPTION	APPROXIMATE PRICE	
Radio Kit (Available from the Program)		25.00
Heat Sink, GC 9077 or equivalent		1.25
Soldering aide tool, GC 9075 or equivalent		2.25
Solder wick (for de-soldering), GC 684/685 or equivalent		3.75
*Solder, 60/40 Rosin Core only, 1/4 lb reel (18GA)		4.25
*Solder Flux paste (non-acid)		3.25
TOTAL TOOLS – SECOND SEMESTER		\$39.75

*These items were purchased for 1st Semester, but additional quantities may be needed.

APPROXIMATE TOTAL BOOKS AND TOOLS - SECOND SEMESTER	\$351.75
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APPROXIMATE TOTAL BOOKS, COMPUTER, AND TOOLS – CORE YEAR	\$1,828.55
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THIRD SEMESTER - SYSTEMS ANALOG/DIGITAL**I. BOOKS & SUPPLIES**

DESCRIPTION	APPROXIMATE PRICE	
ELSY 251 SYSTEMS ANALOG & DIGITAL THEORY		
INTRO TO MECHATRONICS & MEASUREMENT SYSTEMS	0072963052	177.00
ELSY 253 SYSTEMS ANALOG & DIGITAL LABORATORY		
Class fee (ELSY 253)		15.00
ELSY 264 INTRODUCTORY CALCULUS		
TECHNICAL CALCULUS (W/CD)	0130488183	166.00
ELSY 265 COMPUTER FUND & INTRO TO PROGRAMMING		
PROGRAMMING IN VB NET 2005 EDITION (W/3 CDS)	0073304274	102.00
ELTR 269 ELECTRONIC DRAFTING I		
Class fee (ELTR 269)		15.00
Jump Drive		20.00
2 ea Notebook, Computation, National 43-649 (purchase prior to 1st day of class)		17.00
APPROXIMATE TOTAL BOOKS & SUPPLIES - THIRD SEMESTER		\$512.00

II. TOOLS - SEE DRAFTING INSTRUCTOR PRIOR TO PURCHASING THE FOLLOWING:

QUANTITY	DESCRIPTION	APPROXIMATE PRICE
1 ea	Disk, Floppy	2.00
1 ea	Eraser, Pencil (Faber Castell)	3.00
1 ea	Guide, Ames Lettering	2.00
1 pkg	Pencil, Lead 0.5 mm, H and 7H	2.00
1 pkg	Pencil, Lead 0.7 mm, H	1.00
1 ea	Pencil, Mechanical 0.5 mm	6.00
1 ea	Pencil, Mechanical 0.7 mm	6.00
1 ea	Scale, Architect's	7.00
1 roll	Tape, Drafting	1.00
1 ea	Template, Circle	7.00
1 ea	Template, Electronic Symbol, R 375 or R 301	8.00
1 ea	Triangle, 45	7.00
APPROXIMATE TOTAL TOOLS - THIRD SEMESTER		\$52.00

APPROXIMATE TOTAL BOOKS & TOOLS - THIRD SEMESTER	\$564.00
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FOURTH SEMESTER - RADIO FREQUENCY**I. BOOKS & SUPPLIES**

DESCRIPTION	APPROXIMATE PRICE	
ELSY 267 RADIO FREQUENCY TRANSMISSION THEORY		
ANTENNA HANDBOOK (W/Software)	0872599043	40.00
ELECTRONIC COMMUNICATION (Optional)	0070571570	(127.00)
MODERN ELECTRONIC COMMUNICATION (W/CD)	0131130374	112.00
RF CIRCUIT DESIGN	0750699469	38.00
RADIOMAN'S MANUAL OF RF DEVICES, PRINCIPLES, & PRACTICES	1884932452	75.00
ELSY 268 RADIO FREQUENCY TRANSMISSION LABORATORY		
Class fee (ELSY 268)		15.00
ELSY 270 ELECTRONIC DRAFTING II		
Class fee (ELSY 270)		15.00
Jump Drive		20.00
Disk, 3.5" computer, DS/HD floppy for ORCAD		1.00

Drafting Supplies (previously purchased in Third Semester)	n/a
Notebook, Computation, National 43-648 or 43-649	8.00
APPROXIMATE TOTAL BOOKS & SUPPLIES - FOURTH SEMESTER	\$324.00

SUMMER SESSION - LASER/ELECTRO-OPTICS TECHNOLOGY

I. BOOKS & SUPPLIES

DESCRIPTION	APPROXIMATE PRICE
ELSY 331 LASER/ELECTRO-OPTICS THEORY	
GEOMETRIC OPTICS LIGHT SOURCE AND WAVE OPTICS	69.00
INTRODUCTION TO LASER	61.00
LASER/ELECTRO-OPTIC DEVICES (Optional)	(71.00)
1 ea Tape, metric measure (Optional)	(5.00)
APPROXIMATE TOTAL BOOKS - SUMMER SESSION	\$130.00

FIFTH SEMESTER – DIGITAL

I. BOOKS & SUPPLIES

DESCRIPTION	APPROXIMATE PRICE
ELSY 371 ADVANCED MATH FOR ELECTRONICS	
PRACTICAL GUIDE TO THE UNIX SYSTEM	0805375651 76.00
VISUAL BASIC 6: HOW TO PROGRAM (W/CD)	0134569555 90.00
Class fee (ELSY 371)	15.00
ELSY 373 ADVANCED DIGITAL THEORY	
Notebook, Computation, National 43-648 or 43-649	8.00
APPROXIMATE TOTAL BOOKS & SUPPLIES - FIFTH SEMESTER	\$189.00

II. TOOLS

QUANTITY	DESCRIPTION	APPROXIMATE PRICE
1 ea	Template, Logic, Picket #1222I or Archer #276-186	7.00
1 ea	Template, IBM Flow Charting	4.00
APPROXIMATE TOTAL TOOLS - FIFTH SEMESTER		\$11.00

APPROXIMATE TOTAL BOOKS & TOOLS - FIFTH SEMESTER	\$200.00
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SIXTH SEMESTER – PULSE

I. BOOKS & SUPPLIES

DESCRIPTION		APPROXIMATE PRICE
ELSY 372 CALCULUS FOR ADVANCED ELECTRONICS Previously purchased		
ELSY 374 ADVANCED PULSE LABORATORY		
Class fee (ELSY 374)		15.00
2 ea	Disks, 3.5" Floppy	5.00
1 ea	Notebook, Computation, National 43-648 or Equivalent	8.00
Graduation Application fee for first Certificate/Degree		20.00
Optional fee for any additional Certificate/Degree		(10.00)
APPROXIMATE TOTAL BOOKS & SUPPLIES - SIXTH SEMESTER		\$48.00

APPROXIMATE TOTAL BOOKS & SUPPLIES - 6 SEMESTER AAS	\$2,964.55
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APPROXIMATE TOTAL BOOKS & SUPPLIES - 6 1/2 SEMESTER AAS	\$3,094.55
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ANTICIPATE ADDITIONAL EXPENSES ASSOCIATED WITH THIS PROGRAM:
TEXTBOOKS ASSOCIATED WITH ACADEMIC COURSES,
 TRANSPORTATION, PARKING, CHILD CARE, HOUSING.
 YOU MUST CHECK YOUR CLASS SCHEDULE TO DETERMINE TEXTBOOKS REQUIRED BY INSTRUCTOR.