

IDAHO STATE UNIVERSITY COLLEGE OF TECHNOLOGY

ELECTRONICS TECHNOLOGY (CORE)

FIRST YEAR OF ALL ELECTRONIC OPTIONS

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.

Entry dates for this program:

August and January.

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 or www.isu.edu/ctech/

Students will begin in the Electronics Core program. During the second semester of the core program, acceptance into particular options will take place, based upon available openings, grade point average, attendance, and other factors. The Electronics Core is required for entrance into Electronics Systems Technology, Laser/Electro-optics Technology, and Instrumentation and Automation Technology.

Objective: To provide students with skills in the fundamental areas of electronics including soldering, DC analysis, electrical units, Ohm's Law, series, parallel and series parallel resistive circuits, voltage, current, meters, network theorem, AC fundamentals, magnetism, inductors, capacitors, AC-DC network analysis and related algebraic principles. Students will also receive 15 hours per week of related practical laboratory experience to reinforce the theoretical principles encountered in theory courses.

Graduates will be able to install, maintain and repair equipment and circuit integrated in audio, video, wireless, digital and pulse electronic systems. It is, by design, a balance of analog and digital training with specialties in wireless telecomm and RF applications, microprocessor interfacing, digital and analog TV and component level circuit analysis.

Selection of the Electronics options for each accepted student in the Electronics Core Curriculum will occur in the second semester. Acceptance into particular options is based upon available openings and other factors such as a minimum 2.5 cumulative grade point average in core courses and attendance.

All theory courses and the laboratory courses in which those theories are applied require concurrent enrollment. For example, a student enrolled in ELTR 153 Electronic Theory must also enroll in ELTR 155 Electronic Laboratory.

Required Electronics Courses:

ELTR 141	Applied Mathematics I	4 cr
ELTR 142	Applied Mathematics II	4 cr
ELTR 153	Electronic Theory	5 cr
ELTR 154	Electron Control Devices Theory A	5 cr
ELTR 155	Electronic Laboratory	5 cr
ELTR 156	Electron Control Devices Laboratory A	5 cr

General Education Requirements:

COMM 101	Principles of Speech	3 cr
PHYS 101	Elements of Physics	3 cr
PHYS 101L	Elements of Physics Lab	1 cr

Once a student successfully completes Electronics (ELTR) 141, Applied Mathematics I, and ELTR 142, Applied Mathematics II, the student may enroll directly into an academic math course which requires Math 147 as a prerequisite. Students will receive five credits that apply towards the 128 credits required for a bachelor's degree.

Alternate Electronics Core (31-37 credits)

Students wishing to enter one of the Electronics options may also receive credit for the Electronics Core by completing the following courses. These courses are designed to allow students the opportunity to take segments of the core curriculum in circumstances where they may already have some competencies resulting from prior courses or work experience. They may also be taken by high school students for dual enrollment credit. Completion of the first 7 courses (ELTR 121 through 127) constitutes equivalency to ELTR 141, ELTR 153, and ELTR 155. Completion of the last four courses (ELTR 133 through 136) constitutes equivalency to ELTR 154, and ELTR 156.

Required Electronics Courses:

ELTR 121	Introduction to Electronics Theory	1 cr
ELTR 122	Introduction to Electronics Lab	1 cr
ELTR 123	DC Electronics Principles Theory	2 cr
ELTR 124	DC Electronics Principles Lab	2 cr
ELTR 125	AC Electronics Principles Theory	4 cr
ELTR 126	AC Electronics Principles Lab	2 cr
ELTR 127	Electronic Principles Capstone	2-8 cr
ELTR 133	Principles of Control Devices Theory	3 cr
ELTR 134	Principles of Control Devices Lab	3 cr
ELTR 135	Fundamentals of Digital Devices Theory	2 cr
ELTR 136	Fundamentals of Digital Devices Lab	2 cr

General Education Requirements:

COMM 101	Principles of Speech	3 cr
PHYS 101	Elements of Physics	3 cr
PHYS 101L	Elements of Physics Lab	1 cr

PROGRAM OPTIONS, LENGTH, AND APPROXIMATE COSTS:

****Program offering will be dependent upon sufficient student interest and availability of instructor.****

ELECTRONIC SYSTEMS TECHNOLOGY

Associate of Applied Science degree	6 semesters	109 credits
Advanced Technical Certificate	6 semesters	103 credits

An additional technical certificate in Laser/Electro-Optics Technology is available to students enrolled in the Electronic Systems Technology option.

Total approximate cost of books, tools and supplies = \$2,965 to \$3,095.

INSTRUMENTATION AND AUTOMATION TECHNOLOGY

Associate of Applied Science degree	4 1/2 semesters	85 credits
Advanced Technical Certificate	4 1/2 semesters	79 credits

Total approximate cost of books, tools and supplies = \$2,452.

INDUSTRIAL CONTROLS

Associate of Applied Science degree	5 semesters	85 credits
Advanced Technical Certificate	4 semesters	69 credits

Students pursuing an advanced technical certificate or Associate of Applied Science degree in Industrial Controls will not be required to complete the first year of Electronics but will be required to complete the technical certificate in the Electrical Technician program.

LASER/ELECTRO-OPTICS TECHNOLOGY

Associate of Applied Science degree	4 1/2 semesters	81 credits
Advanced Technical Certificate	4 1/2 semesters	75 credits

Total approximate cost of books, tools and supplies = \$2,250.

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
ELECTRONICS TECHNOLOGY (CORE)

COURSE SEQUENCE - ELECTRONICS CORE

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	Job Search	1 - 2

IDAHO STATE UNIVERSITY COLLEGE OF TECHNOLOGY

ELECTRONICS TECHNOLOGY (CORE)

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
---	-----------------

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
---	----------------

****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-Millampmeter (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
--	-------------------

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
---	----------------

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
--	-----------------

APPROXIMATE TOTAL BOOKS, COMPUTER, AND TOOLS – CORE YEAR	\$1,828.55
---	-------------------

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.