

IDAHO STATE UNIVERSITY COLLEGE OF TECHNOLOGY

PROGRAM TITLE: GEOMATICS 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:

Geomatics Technology, Bachelor of Science

8 Semesters

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

**Approximate cost
for books, tools,
& supplies:**
\$1,552
(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
208-282-2622
e-mail: ctech@isu.edu
www.isu.edu/ctech/

Job Description: This program was created through the efforts of the Idaho Society of Professional Land Surveyors to provide education and training in the surveying and mapping, satellite positioning, and geographical information systems disciplines. Graduates of this program are in tremendous demand both in Idaho and across the country. If you like working outdoors, love to look at maps, like doing something different everyday, and enjoy using the latest in computers, software, and technology then maybe surveying is for you.

People in this profession obtain field data and prepare drawings and maps pertaining to angles, elevations, azimuth points, contours, earthwork, or for other purposes. They use theodolites, electronic total stations, levels, geodetic levels, global positioning surveying (GPS), and other instruments. They perform measurements from aerial photographs. They plan, design and perform construction staking tasks necessary for the construction of highways, railroads, bridges, buildings, airfields, subdivisions, and other facilities.

Aptitudes and Interests: Learn and apply theoretical principles and technical knowledge easily, perform mathematical computations accurately, visualize shapes and forms from survey data or sketches, concentrate on details for long periods to avoid errors, use judgment in planning work and handling problems. Work with Auto Cad on computers and other design software. Workers should like work of a scientific and technical nature involving preparation of maps, charts, and drawings; be able to work as part of a team and exercise tact in dealing with persons whose opinions may conflict with your own; enjoy work which requires great precision and accuracy and be willing to accept responsibility for performance in accordance with prescribed standards; enjoy working with the latest electronic computers, surveying and testing equipment.

Educational Requirements: Completion of high school or GED is required.

Helpful High School Courses:

Algebra, Computers, Drafting, English, Geometry, Keyboarding, Physics, Trigonometry

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.

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COURSE SEQUENCE

The Bachelor of Science in Geomatics Technology requires a minimum of 131 credits;
36 must be upper division credits.
See a College of Technology Student Services Counselor for appropriate credit requirements.

1st Year - 1st Fall Semester

| Course # | Course Title | Credits |
|--------------|----------------------|---------|
| CET/GEMT 111 | Drawing with CAD | 3 |
| CET/GEMT 112 | Beginning Surveying | 5 |
| ENGL 101 | English Composition | 3 |
| MATH 108 | Intermediate Algebra | 3 |

1st Year - 1st Spring Semester

| Course # | Course Title | Credits |
|---|--|-----------------|
| CET/GEMT 121 | Civil Engineering Technology Drafting | 3 |
| CET/GEMT 122 | Intermediate Surveying | 5 |
| CET 110 AND CET 120 OR MATH 147 | Applied Mathematics I Applied Mathematics II Precalculus | (4) (4) 5 |
| ENGL 102 | Critical Reading and Writing | 3 |

2nd Year - 2nd Fall Semester

| Course # | Course Title | Credits |
|--------------|--|---------|
| CET/GEMT 212 | Route Survey, Design and State Plane Coordinates | 10 |
| MATH 170 | Calculus I | 4 |
| PHYS 101 | Elements of Physics | 3 |
| PHYS 101L | Elements of Physics Lab | 1 |

2nd Year - 2nd Spring Semester

| Course # | Course Title | Credits |
|--------------|-------------------------------|---------|
| CET/GEMT 224 | Land and Construction Surveys | 10 |
| COMM 101 | Principles of Speech | 3 |
| MATH 175 | Calculus II | 4 |

3rd Year - 3rd Fall Semester

| Course # | Course Title | Credits |
|----------|--|---------|
| GEMT 310 | Surveying Law and Boundary Description | 3 |
| GEMT 311 | Advanced Surveying | 3 |
| GEMT 312 | Public Land Surveys | 3 |
| GEMT 313 | Surveying Software Applications | 3 |
| MATH 253 | Introduction to Statistics | 3 |
| GOAL 4 | Biological Sciences | 4 |

3rd Year - 3rd Spring Semester

| Course # | Course Title | Credits |
|----------|--|---------|
| GEMT 314 | Research and Evidence in Surveying | 3 |
| GEMT 315 | Surveying Adjustments and Coordinate Systems | 3 |
| GEMT 413 | Land Information System | (3) |
| ECON | Choose from ECON 100, 201, or 202 | 3 |
| GEMT 416 | Surveying Project | 3 |

4th Year - 4th Fall Semester

| Course # | Course Title | Credits |
|-------------------|--|---------|
| GEMT 317 | Subdivision Planning and Platting | 3 |
| GEMT 416 | Surveying Project | 3 |
| GEMT 415 | Survey Office Practice | 3 |
| GOAL 6, 7, 8 | Choose one class that satisfies one of these goals | 3 |
| GOAL 10A, 10B, 12 | Choose one class that satisfies one of these goals | 3 |

4th Year - 4th Spring Semester

| Course # | Course Title | Credits |
|--------------|---|---------|
| GEMT 413 | Land Information System | (3) |
| GEMT 411 | Geodesy | 3 |
| GEMT 425 | Principles of Cartography | 3 |
| GEMT g430 | GPS Principles and Applications | 3 |
| GEMT g432 | Principles of Photogrammetry | 3 |
| HIST 118 | US History and Culture | 3 |
| ENGL 307 | Technical Writing | 3 |
| GOAL 6, 7, 8 | Choose one more class that satisfies one of these goals | 3 |

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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

FIRST SEMESTER (1ST FALL)

I. BOOKS (LISTED BY COURSE) & SUPPLIES (CET/GEMT 111, 112)

| DESCRIPTION | APPROXIMATE PRICE | |
|---|-------------------|-----------------|
| CET/GEMT 111 DRAWING WITH CAD | | |
| APPLYING AUTOCAD 2008 | 0078801532 | 65.00 |
| Class fee (CET/GEMT 111) | | 20.00 |
| CET/GEMT 112 BEGINNING SURVEYING | | |
| ELEMENTARY SURVEYING (W/CD) | 0136154310 | 153.00 |
| SURVEYING FIELD BOOK (Level), K & E | | 21.00 |
| SURVEYING FIELD BOOK (Transit), K & E | | 21.00 |
| Class fee (CET/GEMT 112) | | 15.00 |
| 2 ea - Notebook , Loose-leaf 2 ea - Binder , 3-Ring with 400 sheets of engineering paper 2 set - Dividers, notebook | | 19.00 |
| APPROXIMATE TOTAL BOOKS & SUPPLIES FOR FIRST SEMESTER | | \$314.00 |

II. TOOLS (All items as specified or as approved by instructor)

| QUANTITY | DESCRIPTION | APPROXIMATE PRICE |
|----------|---|-------------------|
| 1 ea | Calculator (HP 48GX) | 260.00 |
| 2 ea | Eraser Holder with soft eraser jet, #825-B Pink, Pocket | 2.00 |
| 1 ea | French curve, Acrylic | 3.00 |
| 2 ea | Lead (for mechanical pencils) H, 2H, 3H | 9.00 |
| 1 ea | Printer (Infra-red for HP48GX) | 100.00 |
| 1 ea | Protractor, 6" Circular, Kohinoor #8220-6 | 4.00 |

| | | |
|---|---|-----------------|
| 1 ea | Scale, 12" Engineer's (Triangular) Combination scales | 5.00 |
| 1 ea | Scale, 12" Metric | 5.00 |
| 1 ea | Survey Pac (TDS Co. Go.) | 100.00 |
| 2 ea | Tape, Drafting in dispenser, Scotch #3852-E | 2.00 |
| 1 ea | Tape, 25' Steel Measuring (decimal, feet, inches, & metric combination) | 7.00 |
| 1 ea | Triangle, Pro. Topaz #1045T, 12" 45 degrees | 8.00 |
| 1 ea | Triangle, Pro. Topaz #12-60T, 12" 30-60 degree | 8.00 |
| APPROXIMATE TOOLS FOR FIRST SEMESTER | | \$513.00 |

III. UNIFORMS OR OTHER EQUIVALENT WARM CLOTHING (Suggested)

Raincoat
 Coveralls - Insulated
 Belt

| | |
|--|-----------------|
| APPROXIMATE TOTAL UNIFORMS FOR FIRST SEMESTER | \$150.00 |
|--|-----------------|

| | |
|--|-----------------|
| APPROXIMATE TOTAL FOR ENTIRE FIRST SEMESTER | \$977.00 |
|--|-----------------|

SECOND SEMESTER (1ST SPRING)**I. BOOKS LISTED BY COURSE (CET/GEMT 121, 122)**

| DESCRIPTION | APPROXIMATE PRICE | |
|---|-------------------|----------------|
| CET/GEMT 121 CIVIL ENGINEERING TECHNOLOGY DRAFTING | | |
| CIVIL DRAFTING TECHNOLOGY (with CD/ROM) | 0130498793 | 64.00 |
| CET/GEMT 122 INTERMEDIATE SURVEYING Previously purchased | | |
| APPROXIMATE TOTAL BOOKS FOR SECOND SEMESTER | | \$64.00 |

THIRD SEMESTER (2ND FALL)**I. BOOKS (LISTED BY COURSE) & SUPPLIES (CET/GEMT 212)**

| DESCRIPTION | APPROXIMATE PRICE | |
|--|-----------------------|----------------|
| CET/GEMT 212 ROUTE SURVEY, DESIGN AND STATE PLANE COORDINATES | Text to be determined | |
| Class fee (CET/GEMT 212) | | 30.00 |
| APPROXIMATE TOTAL BOOKS & SUPPLIES - THIRD SEMESTER | | \$30.00 |

FOURTH SEMESTER (2ND SPRING)**I. BOOKS (LISTED BY COURSE) (CET/GEMT 224)**

| DESCRIPTION | APPROXIMATE PRICE | |
|---|-----------------------|---------------|
| CET/GEMT 224 LAND AND CONSTRUCTION SURVEYS | Text to be determined | |
| APPROXIMATE TOTAL BOOKS & SUPPLIES - FOURTH SEMESTER | | \$ - - |

FIFTH SEMESTER (3RD FALL)**I. BOOKS (LISTED BY COURSE) (GEMT 311, 312, 313)**

| DESCRIPTION | APPROXIMATE PRICE | |
|--|-------------------|----------------|
| GEMT 311 ADVANCED SURVEYING Previously purchased | | |
| GEMT 312 PUBLIC LAND SURVEYS | | |
| MANUAL OF SURVEYING INSTRUCTION for the Survey of Public Lands of the U.S. | | 30.00 |
| GEMT 313 SURVEYING SOFTWARE APPLICATIONS Text to be determined | | |
| APPROXIMATE TOTAL BOOKS & SUPPLIES - FIFTH SEMESTER | | \$30.00 |

SIXTH SEMESTER (3RD SPRING)**I. BOOKS (LISTED BY COURSE) (GEMT 314, 315, or 413, and GEMT 416)**

| DESCRIPTION | APPROXIMATE PRICE | |
|---|-------------------|-----------------|
| GEMT 314 RESEARCH AND EVIDENCE IN SURVEYING | | |
| EVIDENCE & PROCEDURES FOR BOUNDARY LOCATION | 0471390917 | 110.00 |
| GEMT 315 SURVEYING ADJUSTMENTS AND COORDINATE SYSTEMS | | |
| ADJUSTMENT COMPUTATIONS | 0471168335 | 140.00 |
| GEMT 416 SURVEY PROJECT Text to be determined | | |
| APPROXIMATE TOTAL BOOKS & SUPPLIES - FOURTH SEMESTER | | \$250.00 |

SEVENTH SEMESTER (4TH FALL)**I. BOOKS (LISTED BY COURSE) (GEMT 317, 415)**

| DESCRIPTION | APPROXIMATE PRICE | |
|--|-------------------|-----------------|
| GEMT 317 SUBDIVISION PLANNING AND PLATTING | | |
| RESIDENTIAL LAND DEVELOPMENT PRACTICES | 0784405611 | 49.00 |
| GEMT 415 SURVEY OFFICE PRACTICE | | |
| BUSINESS PLAN GUIDE for Independent Consultants | 047159735X | 30.00 |
| PRINCIPLES OF ENGINEERING ECONOMY | 047163526X | 102.00 |
| APPROXIMATE TOTAL BOOKS & SUPPLIES - SEVENTH SEMESTER | | \$181.00 |

EIGHTH SEMESTER (4TH SPRING)**I. BOOKS (LISTED BY COURSE) (GEMT 413, GEMT 411)**

| DESCRIPTION | APPROXIMATE PRICE | |
|--|-------------------|----------------------|
| GEMT 430 GPS PRINCIPLES AND APPLICATIONS Previously purchased | | |
| GEMT g432 PHOTOGRAMMETRY (Unless taken during sixth semester) | | |
| ELEMENTS OF PHOTOGRAMMETRY | 0070713456 | (145.00) |
| GEMT 411 GEODESY Text to be determined | | |
| GEMT 417 INDEPENDENT STUDY (Optional) | | |
| LAND SURVEYOR IN TRAINING SAMPLE EXAMINATION | 1888577703 | (38.00) |
| LAND SURVEYOR REFERENCE MANUAL | 1888577509 | (135.00) |
| APPROXIMATE TOTAL BOOKS & SUPPLIES - EIGHTH SEMESTER | | (((\$318.00)) |

II. OTHER FEES

| DESCRIPTION | APPROXIMATE PRICE |
|--|-------------------|
| Graduation Application Fee for First Certificate/Degree | 20.00 |
| Optional Graduation Application Fee for Each Additional Certificate/Degree | (10.00) |
| APPROXIMATE TOTAL OTHER FEES - EIGHTH SEMESTER | \$20.00 |

| | |
|---|-------------------|
| APPROXIMATE TOTAL BOOKS AND SUPPLIES - TECHNICAL PROGRAM | \$1,552.00 |
|---|-------------------|

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.