

DEPARTMENT OF LAND RESOURCES

Dr. Milan Vavrek, Department Chairperson

Professors: R. Sypolt, M. Vavrek

Associate Professor: R. Gazal

Assistant Professors: B. Perkins, R. Witte

Instructor: J. Wilson

The Department of Land Resources prides itself on a “hands on” approach to learning. Students are provided a teaching/learning experience that duplicates as closely as possible real world applications. The baccalaureate degree in Natural Resource Management will take advantage of two associate degree programs in the Department of Land Resources and the strength of course offerings in the Department of Science and Mathematics, Department of Business and Department of Social Science. The degree is developed around the general education baccalaureate degree component, a Natural Resource Management core, seven major concentration areas and a block elective component. The seven degree concentrations are Applied Science, Business Management, Criminal Justice, Environmental Science, Forest Technology, Landman Technology and Land Surveying Technology.

The Department of Land Resources is housed in Eberle Hall about one mile from the main campus. The department has about 300 acres of land adjacent to the building for outdoor projects. A greenhouse and sawmill are located on the property for student use along with storage buildings for timber harvesting equipment. A modern computer lab is available for use in appropriate classes. This lab contains computers, plotters, scanner and software that replicate those used in government, business, and industry. A wide array of hand tools, equipment and land surveying instruments appropriate for teaching field labs are available to enhance instruction and learning. Global Positioning Systems (GPS) and Geographic Information Systems (GIS) technologies are used in several classes.

For additional information about the Department of Land Resources, its programs, faculty and organizations, contact Glenville State College, 200 High Street, Glenville, West Virginia 26351. Phone: (304) 462-6370 or send e-mail to Milan.Vavrek@glenville.edu.

Degree Programs: The following programs are available in the Department of Land Resources.

Baccalaureate (4-year non-teaching) Majors:

Bachelor of Science

Natural Resource Management with concentrations in

Applied Science, Business Management, Criminal Justice, Environmental Science, Forest Technology, Landman Technology (OR) Land Surveying Technology

Biology combined with Forestry

Business combined with Forestry

Associate of Science (2-year) Majors:

Forest Technology

Land Surveying

The NRMT: Forestry and NRMT: Land Surveying programs are listed on the Southern Regional Educational Board's (SREB) Academic Common Market and are available to out-of-state students subject to provisions of the Academic Common Market. This allows qualifying out-of-state students to attend Glenville State College at the in-state tuition rate.

The baccalaureate Natural Resource Management degree program provides the student with the opportunity to develop a concentration in one of the following concentration areas:

Applied Science – This concentration centers on biological science with an emphasis on courses that build a solid applied science background. This degree in Natural Resource Management can help the students get a variety of jobs. Other students may wish to use this degree as a foundation for continuing their education in the science field.

Business Management – This concentration is designed for students primarily interested in the business management aspect of natural resources. This program prepares the student to deal with personnel management, budgetary items, and other financial concerns.

Criminal Justice – This concentration is designed for those students who want to become Conservation Officers or other enforcement personnel in the natural resource area.

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Environmental Science – This concentration is designed for those students interested in environmental regulatory careers with government agencies and business consulting firms. The Environmental Science concentration prepares students for career opportunities in the private, public, academic and nonprofit sectors. Employers may include Federal, state, and local governments; the natural resource sector; utilities; manufacturers; and industry, as well as small business.

Forest Technology – This concentration provides a pathway for associate degree students in forest technology to continue their education and receive the baccalaureate degree. Students would be able to broaden the perspectives in the natural resource area for careers with government agencies as well as the private sector. Students would have the necessary credentials to be registered as a professional forester and practice forestry in West Virginia as a technician or professional.

Landman Technology – This concentration is designed for those students interested in working in the oil and gas industry in West Virginia and the region. Students in this concentration become technically proficient in landman technology and are eligible for four “credit years” of work experience to become certified by the American Association of Professional Landmen (AAPL). Landman degrees are currently available in three states east of the Rocky Mountains. Professional landmen are persons that are involved with negotiations for acquisitions or divesture of mineral rights or negotiate for business agreements that provide for the exploration or development of mineral rights. Graduates of this program are able to find a large number of career opportunities with federal government agencies, such as U. S. Forest Service, the Bureau of Land Management and the Environmental Protection Agency. At the state level, graduates qualify for opportunities with the Department of Natural Resources, Department of Environmental Protection and others.

Land Surveying Technology – This concentration provides a pathway for associate degree students in land surveying to continue their education for a baccalaureate degree. Students will be technically proficient in land surveying and will be able to develop a strong concentration in geographic information systems and resource allocation for careers with government agencies and the private sector. This degree will also provide the baccalaureate degree necessary for licensure as a professional land surveyor in West Virginia and Ohio.

***Several scholarships are available specifically to students who are enrolled in the Land Resource programs.**

Associate Degree Programs

The associate degree programs have active advisory committees comprised of representatives from government, business, and industries that hire graduates. These advisory bodies ensure that classes are continually updated and help greatly with job placement for graduates. Job opportunities remain strong for all program graduates. Graduates receive the associate degree upon completion of their programs in forestry or land surveying.

Forest Technology – GSC has offered an exemplary associate degree program in forestry since 1971. Graduates now work in all aspects of forestry in the state and region. This program is one of only twenty three programs in the United States that is recognized by the Society of American Foresters. The minimum requirement to be registered with the state of West Virginia as a forest technician is an associate degree in forestry from a two year technical forestry program recognized by the Society of American Foresters and 4 years of forestry work experience.

Land Surveying Technology – Glenville State College has been providing well educated students for the land surveying profession since 1974. These graduates currently work in all aspects of surveying including; retracement, construction, route, mineral, and others. The minimum requirement for licensure is an associate degree with 30 hours of surveying classes and four years of experience.

Graduates of the land surveying associate degree program receive a “surveyor intern” status as the curriculum is approved by the West Virginia Board of Examiners of Land Surveyors and the degree provides two of the six years required for licensure. The baccalaureate Natural Resource Management degree with the Land Surveying Technology concentration provides three of the six years required for licensure.

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BACHELOR OF SCIENCE NATURAL RESOURCE MANAGEMENT

General Education Requirement **43 hours**

Natural Resource Management Core **33 hours**

BIOL 400	Ecology and Field Biology	4
CSCI 260	Management Information Systems	3
ENVR 352	Air/Water/Soil Quality	4
ENVR 393	Environmental Compliance	4
MGMT 201	Principles of Management	3
MGMT Elective (300-400 level)		3
NRMT 125	Computer Assisted Mapping	3
NRMT 201	Forest Ecology	3
NRMT 234	GIS Applications I	3
NRMT 493	Natural Resource Management Applications	3

Concentration requirement hours required vary by program area from 33-52.

Block Electives (select from the following 300-400 level courses)

Hours required vary by program area from 4-15 hours.

BIOL 302	General Entomology	4
BIOL 305	General Botany	4
BIOL 335	Cell Physiology	4
BIOL 352	Plant Anatomy and Morphology	4
BIOL 361	Microbiology	4
BIOL 362	Plant Physiology	4
BIOL 363	Non-vascular Plants	4
BIOL 456	Genetics	4
BUSN 330	Quantitative Business Analysis II	3
ENVR 351	Soils and Land Reclamation	3
GEOG 304	North American Geography	3
LAND 335	Hydrology, Drainage and Subdivision Design	3
MGMT 383	Labor Management Relations	3
MGMT 384	Human Resource Management	3
MGMT 487	Operations Management	3
NRMT 311	Natural Resource Permitting	2
NRMT 312	Sustainable Trails Design & Construction	3
NRMT 334	GIS Applications II	3
NRMT 351	Flora of West Virginia	3
NRMT 389	Community Service (OR)	
NRMT 499	Individual Research Problems	3
NRMT 410	Energy Resource Law	3
STAT 361	Introduction to Statistical Analysis	3

Block Electives (select from the following restricted)

Hours required vary by program area 0-13 hours

BIOL 101	General Biology I	4
BIOL 102	Introduction to Cellular Biology	4
BIOL 108	Dendrology I	1
BIOL 109	Dendrology II	1
BIOL 110	Dendrology III	1
BIOL 203	Plant Disease and Insect Control	3
BIOL 293	Techniques of Science	2
BUSN 230	Quantitative Business Analysis I	3
BUSN 270	Business Law I	3
ECON 201	Principles of Microeconomics	3
FRST 202	Forest Recreation and Wildlife Management	3
FRST 206	Timber Harvest Planning & Systems	3
FRST 209	Silviculture and Vegetation Management	4
LAND 124	Land Survey Boundary Law	3
LAND 232	Cartographic Surveying	4
LAND 244	Remote Sensing and Aerial Photo Interpretation	1
MATH 202	Calculus I	4
MATH 256	Probability and Statistics I	3
MGMT 202	Small Business Management	3
PHYS 201	General Physics I	4
PHYS 202	General Physics II	4
PHYS 209	General Geology	4
SCNC 101	Earth Science	4

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**NATURAL RESOURCE MANAGEMENT
APPLIED SCIENCE CONCENTRATION**

General Education Requirement **43 hours**

Students must complete BIOL 101, GEOG 203, MATH 102 and POSC 203 as part of the General Education requirement.

Natural Resource Management Core **33 hours**

Applied Science Concentration **33 hours**

BIOL 109	Dendrology II	1
BIOL 205	Invertebrate Zoology (OR)	
BIOL 206	Vertebrate Zoology	4
BIOL 293	Techniques of Science	2
BIOL 305	General Botany	4
BIOL 352	Plant Anatomy and Morphology (OR)	
BIOL 362	Plant Physiology	4
BIOL 361	Microbiology	4
BIOL 493	Senior Seminar	2
CHEM 101	General Chemistry I	4
CHEM 102	General Chemistry II	4
PHYS 209	General Geology	4

Block Electives (300-400 level) **12 hours**

Block Electives (restricted) **9 hours**

Total minimum hours required for degree **130 hours**

GATEWAY ASSESSMENT - BIOL 293

CAPSTONE ASSESSMENT - NRMT 493

**NRMT: APPLIED SCIENCE
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 101.....	4	ART 200, CART 200 (OR)	
BIOL 109.....	1	MUSC 200	2
CHEM 101	4	CART 101.....	3
ENGL 101	3	CSCI 101	3
GSC 100	1	CHEM 102.....	4
MATH 102	3	GEOG 203	3
Total Hours – Fall Semester	16	PED 101.....	1
		Total Hours – Spring Semester	16

SECOND YEAR

BIOL 102, CHEM 100, ENVR 101, PHYS 201 (OR) SCNC 101.....	4	BIOL 293.....	2
BIOL 205 (OR) BIOL 206	4	CSCI 260	3
HIST 201, 202, 207 (OR) 208	3	ENGL 102.....	3
NRMT 125	3	MGMT 201.....	3
POSC 203	3	PHYS 209.....	4
PED 201	1	Total Hours – Spring Semester	15
Total Hours – Fall Semester	18		

THIRD YEAR

ART 200, CART 200 (OR) MUSC 200	2	ENGL 203, 204, 205 (OR) 206	3
BIOL 305.....	4	ENVR 352	4
BIOL 361.....	4	ENVR 393	4
NRMT 201	3	BLOCK ELECTIVE.....	5
NRMT 234	3	Total Hours – Spring Semester	16
PED 301	1		
Total Hours – Fall Semester	17		

REQUEST DEGREE EVALUATION

FOURTH YEAR

BIOL 352 (OR) BIOL 362	4	BIOL 493.....	2
BIOL 400.....	4	MGMT ELECTIVE (300-400 level).....	3
BLOCK ELECTIVES (300-400 level).....	8	NRMT 493.....	3
Total Hours – Fall Semester	16	BLOCK ELECTIVES	4
		BLOCK ELECTIVES (300-400 level)	4
APPLY FOR GRADUATION		Total Hours – Spring Semester	16

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**NATURAL RESOURCE MANAGEMENT
BUSINESS MANAGEMENT CONCENTRATION**

General Education Requirement 43 hours

Students must complete GEOG 203, MATH 102 and POSC 203 as part of the General Education requirement.

Natural Resource Management Core 33 hours

MGMT 484 Organizational Behavior 3

Business Management Concentration 36 hours

ACCT 231 Principles of Accounting I 3

BUSN 193 Applied Business Communications 3

BUSN 230 Quantitative Business Analysis I 3

BUSN 270 Business Law I 3

BUSN 330 Quantitative Business Analysis II 3

BUSN 470 Business Law II 3

ECON 201 Principles of Microeconomics 3

FINC 321 Business Finance 3

MGMT 383 Labor-Management Relations 3

MGMT 384 Human Resource Management 3

MGMT 487 Operations Management 3

STAT 361 Introduction to Statistical Analysis 3

Block Electives (300-400 level) 5 hours

Block Electives (restricted) 13 hours

Total minimum hours required for degree 130 hours

GATEWAY ASSESSMENT - BUSN 193

CAPSTONE ASSESSMENT - NRMT 493

**NRMT: BUSINESS MANAGEMENT
SUGGESTED PLAN OF STUDY**

FIRST YEAR

ART 200, CART 200 (OR)	CART 101.....	3
MUSC 200.....	CSCI 101	3
BIOL 101, 102, CHEM 100, 101,	HIST 201, 202, 207 (OR) 208	3
ENVR 101, PHYS 201, 209	NRMT 125.....	3
(OR) SCNC 101	PED 101.....	1
BUSN 230	STAT 361	3
ENGL 101	Total Hours – Spring Semester	16
GSC 100		
MATH 102		
Total Hours – Fall Semester		16

SECOND YEAR

ACCT 231	ART 200, CART 200 (OR)	
BUSN 270	MUSC 200	2
ECON 201	BUSN 193.....	3
NRMT 201	BUSN 330.....	3
PED 201	CSCI 260	3
POSC 203.....	ENVR 352	4
Total Hours – Fall Semester	FINC 321	3
	Total Hours – Spring Semester	18

THIRD YEAR

BIOL 101, 102, CHEM 100, 101,	BUSN 470.....	3
ENVR 101, PHYS 201, 209	GEOG 203	3
(OR) SCNC 101	MGMT 383.....	3
ENGL 102	MGMT 484.....	3
MGMT 201.....	PED 301.....	1
NRMT 234	BLOCK ELECTIVE	
BLOCK ELECTIVE	(300-400 level)).....	2
(300-400 level))	Total Hours – Spring Semester	15
Total Hours – Fall Semester		

REQUEST DEGREE EVALUATION

FOURTH YEAR

BIOL 400.....	APPLY FOR GRADUATION	
ENGL 203, 204, 205 (OR) 206	ENVR 393	4
MGMT 384.....	MGMT 487.....	3
BLOCK ELECTIVES	NRMT 493.....	3
Total Hours – Fall Semester	BLOCK ELECTIVE.....	7
	Total Hours – Spring Semester	17

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**NATURAL RESOURCE MANAGEMENT
CRIMINAL JUSTICE CONCENTRATION**

General Education Requirement 43 hours

Students must complete MATH 102, POSC 203 and SOCL 205 as part of the General Education requirement.

Natural Resource Management Core 33 hours

Criminal Justice Concentration 42 hours

CRJU 111	Introduction to Criminal Justice System	3
CRJU 215	Crime Scene Management	3
CRJU 222	Police Practices and Procedures	3
CRJU 223	Corrections	3
CRJU 232	Criminal Evidence and Procedures	3
CRJU 310	Criminal Justice Management	3
CRJU 397	Work Experience	6
POSC 204	State and Local Government	3
POSC 309	Civil Liberties	3
POSC 390	Introduction to Public Administration	3
PSYC 201	General Psychology	3
SOCL 105	Interviewing and Counseling	3
SOCL 209	Social Problems	3

Block Electives (300-400 level) 11 hours

Total minimum hours required for degree 129 hours

GATEWAY ASSESSMENT – CRJU 232

CAPSTONE ASSESSMENT – NRMT 493

**NRMT: CRIMINAL JUSTICE
SUGGESTED PLAN OF STUDY**

FIRST YEAR

CRJU 111	3	BIOL 101	4
CRJU 222	3	CRJU 215	3
ENGL 101	3	CRJU 223	3
GSC 100	1	CRJU 232	3
MATH 102	3	POSC 203	
PSYC 201	3	Total Hours – Spring Semester	16
Total Hours – Fall Semester	16		

SECOND YEAR

CSCI 101	3	CRJU 310	3
ENGL 102	3	HIST 201, 202, 207 (OR) 208	3
MGMT 201.....	3	PED 101.....	1
SOCL 105.....	3	POSC 204	3
SOCL 205.....	3	BLOCK ELECTIVES	
Total Hours – Fall Semester	15	(300-400 level)	4
		Total Hours – Spring Semester	14

SUMMER

CRJU 397	6
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THIRD YEAR

ART 200, CART 200 (OR)		ART 200, CART 200 (OR)	
MUSC 200	2	MUSC 200	2
CSCI 260	3	ENGL 203, 204, 205 (OR) 206	3
NRMT 201	3	NRMT 125.....	3
PED 201	1	MGMT ELECTIVE (300-400 level).....	3
POSC 390.....	3	BLOCK ELECTIVES	
SOCL 209.....	3	(300-400 level)	4
Total Hours – Fall Semester	15	Total Hours – Spring Semester	15

REQUEST DEGREE EVALUATION

FOURTH YEAR

BIOL 400.....	4	ENVR 352	4
CART 101	3	ENVR 393	4
PED 301	1	NRMT 234.....	3
SCNC 101 or ENVR 101	4	NRMT 493.....	3
BLOCK ELECTIVES		POSC 309	3
(300-400 level).....	3	Total Hours – Spring Semester	17
Total Hours – Fall Semester	15		

APPLY FOR GRADUATION

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**NATURAL RESOURCE MANAGEMENT
ENVIRONMENTAL SCIENCE CONCENTRATION**

General Education Requirement 43 hours

Students must complete BIOL 101, ENVR 101, GEOG 203, MATH 102 and POSC 203 as part of the General Education requirement.

Natural Resource Management Core 33 hours

Environmental Science Concentration 32 hours

BIOL 361	Microbiology	4
CHEM 101	General Chemistry I	4
CHEM 102	General Chemistry II	4
ENVR 193	Solid Waste Management	3
ENVR 255	Health and Safety	3
ENVR 351	Soils and Land Reclamation	3
ENVR 397	Work Experience	1
LAND 121	Introduction to Land Surveying	3
PHYS 209	General Geology	4
STAT 361	Introduction to Statistical Analysis	3

Block Electives (300-400 level) 15 hours

Block Electives (restricted) 5 hours

Total minimum hours required for degree 128 hours

GATEWAY ASSESSMENT - ENVR 193

CAPSTONE ASSESSMENT - NRMT 493

**NRMT: ENVIRONMENTAL SCIENCE
SUGGESTED PLAN OF STUDY**

FIRST YEAR

CHEM 101	4	CART 101.....	3
ENGL 101	3	CHEM 102.....	4
ENVR 101	4	CSCI 101	3
GSC 100.....	1	LAND 121	3
MATH 102.....	3	NRMT 125.....	3
PED 101	1	Total Hours – Spring Semester	16
Total Hours – Fall Semester	16		

SECOND YEAR

BIOL 101.....	4	ENGL 102.....	3
ENVR 193	3	ENVR 352	4
NRMT 201	3	ENVR 393	4
NRMT 234	3	PED 201.....	1
STAT 361	3	PHYS 209.....	4
Total Hours – Fall Semester	16	Total Hours – Spring Semester	16

SUMMER

ENVR 397	1
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THIRD YEAR

BIOL 400.....	4	ART 200, CART 200 (OR)	
ENVR 255	3	MUSC 200	2
ENVR 351	3	CSCI 260	3
GEOG 203.....	3	HIST 201, 202, 207 (OR) 208	3
MGMT 201.....	3	MGMT ELECTIVE (300-400 level).....	3
Total Hours – Fall Semester	16	BLOCK ELECTIVES	5
		Total Hours – Spring Semester	16

REQUEST DEGREE EVALUATION

FOURTH YEAR

ART 200, CART 200 (OR)	
MUSC 200.....	2
BIOL 361.....	4
ENGL 203, 204, 205 (OR) 206	3
POSC 203	3
BLOCK ELECTIVES	
(300-400 level).....	4
Total Hours – Fall Semester	16

APPLY FOR GRADUATION

NRMT 493.....	3
PED 301.....	1
BLOCK ELECTIVES	
(300-400 level).....	11
Total Hours – Spring Semester	15

**NATURAL RESOURCE MANAGEMENT
FOREST TECHNOLOGY CONCENTRATION**

General Education Requirement 43 hours

Students must complete BIOL 101, MATH 102, and POSC 203 as part of the General Education requirement.

Natural Resource Management Core 33 hours

Forest Technology Concentration 39 hours

BIOL 108	Dendrology I	1
BIOL 109	Dendrology II	1
BIOL 110	Dendrology III	1
BIOL 203	Plant Disease and Insect Control	3
FRST 103	Forest Measurements I	2
FRST 193	Forest Measurements II	3
FRST 197	Work Experience	1
FRST 202	Forest Recreation and Wildlife Management	3
FRST 205	Wood Products, Processing and Marketing	2
FRST 206	Timber Harvest Planning and Systems	3
FRST 209	Silviculture and Vegetation Management	4
FRST 212	Timber Harvesting Techniques	2
FRST 214	Fire Protection	2
FRST 216	Wood Identification	1
FRST 293	Forest Management	3
LAND 121	Introduction to Land Surveying	3
LAND 244	Remote Sensing and Aerial Photo Interpretation	1
MGMT 202	Small Business Management	3

Block Electives (300-400 level) 15 hours

Total minimum hours required for degree 130 hours

GATEWAY ASSESSMENT - FRST 293

CAPSTONE ASSESSMENT - NRMT 493

**NRMT: FOREST TECHNOLOGY
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 108.....	1	BIOL 101.....	4
BIOL 109.....	1	BIOL 110.....	1
ECON 201, GEOG 203, PSYC 201, SOCL 205 (OR) SOCS 225.....	3	ENGL 102	3
ENGL 101	3	FRST 193.....	3
FRST 103	2	LAND 121	3
FRST 214	2	NRMT 125.....	3
GSC 100	1	Total Hours – Spring Semester	17
MATH 102.....	3		
Total Hours – Fall Semester	16		

SUMMER

FRST 197	1
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SECOND YEAR

BIOL 203.....	3	FRST 202.....	3
FRST 209	4	FRST 205.....	2
FRST 212	2	FRST 206.....	3
LAND 244.....	1	FRST 216.....	1
NRMT 201	3	FRST 293.....	3
PED 201	1	MGMT 202.....	3
Total Hours – Fall Semester	14	NRMT 234.....	3
		Total Hours – Spring Semester	18

THIRD YEAR

ART 200, CART 200 (OR) MUSC 200	2
CSCI 101	3
CSCI 260	3
MGMT 201.....	3
PED 101	1
BLOCK ELECTIVES (300-400 level)	4
Total Hours – Fall Semester	16

REQUEST DEGREE EVALUATION

ART 200, CART 200 (OR) MUSC 200.....	2
ENGL 203, 204, 205 (OR) 206	3
HIST 201, 202, 207 (OR) 208	3
MGMT ELECTIVE (300-400 level)	3
BLOCK ELECTIVES (300-400 level)	4
Total Hours – Spring Semester	15

FOURTH YEAR

BIOL 102, CHEM 100, 101, ENVR 101, PHYS 101,201, 209 (OR) SCNC 101	4
BIOL 400.....	4
CART 101	3
PED 301	1
POSC 203.....	3
BLOCK ELECTIVES (300-400 level)	3
Total Hours – Fall Semester	18

APPLY FOR GRADUATION

ENVR 352	4
ENVR 393	4
NRMT 493.....	3
BLOCK ELECTIVES (300-400 level)	4
Total Hours – Spring Semester	15

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NATURAL RESOURCE MANAGEMENT LANDMAN TECHNOLOGY CONCENTRATION

General Education Requirement **43 hours**

Students must complete GEOG 203, MATH 102, PHYS 209, and POSC 203 as part of the General Education requirement.

Natural Resource Management Core **33 hours**

Landman Concentration **36 hours**

BUSN 193	Applied Business Communications	3
BUSN 270	Business Law I	3
BUSN 296	Dimensions in Professional Development	3
BUSN 470	Business Law II	3
LAMN 193	Principles of Landman Technology	1
LAMN 293	Landman Titles & Abstracting	2
LAMN 397	Work Experience	1
LAND 121	Introduction to Land Surveying	3
LAND 123	Land Survey Descriptions-Interpretation and Writing	3
MGMT 484	Organizational Behavior	3
NRMT 311	Natural Resources Permitting	2
NRMT 410	Energy Resource Law	3
PHYS 209	General Geology	3
PSYC 201	General Psychology	3
SOCL 330	Social Psychology	3

Block Electives (300-400 level) **11 hours**

These courses are recommended:

ENVR 351	Soils and Land Reclamation
GEOG 304	North American Geography
MGMT 384	Human Resource Management
MGMT 487	Operations Management

Block Electives (restricted) **7 hours**

These courses are recommended:

BIOL 109	Dendrology II
LAND 244	Remote Sensing and Aerial Photo Interpretation

Total minimum hours required for degree **130 hours**

GATEWAY ASSESSMENT - LAMN 293
CAPSTONE ASSESSMENT - NRMT 493

**NRMT: LANDMAN
SUGGESTED PLAN OF STUDY**

FIRST YEAR

CSCI 101	3	ART 200, CART 200 (OR)	
ENGL 101	3	MUSC 200.....	2
GSC 100	1	BIOL 101, 102, CHEM 100, 101,	
LAND 121	3	ENVR 101, PHYS 201, (OR)	
MATH 102	3	SCNC 101	4
NRMT 125	3	CART 101	3
PED 101	1	ENGL 102	3
Total Hours – Fall Semester	17	LAMN 193	1
		LAND 123	3
		Total Hours – Spring Semester	16

SECOND YEAR

BUSN 193	3	BUSN 296	3
BUSN 270	3	ENVR 393	4
GEOG 203.....	3	MGMT 201.....	3
LAMN 293	2	PHYS 209.....	4
NRMT 234	3	BLOCK ELECTIVE	1
Total Hours – Fall Semester	14	Total Hours – Spring Semester	15

THIRD YEAR

ART 200, CART 200 (OR)		BUSN 470	3
MUSC 200	2	CSCI 260	3
MGMT ELECTIVE (300-400 level)	3	ENGL 203, 204, 205 (OR) 206	3
NRMT 201	3	ENVR 352	4
PED 201	1	NRMT 311.....	2
PSYC 201	3	PED 301.....	1
BLOCK ELECTIVE		Total Hours – Spring Semester	16
(300-400 level)	6		
Total Hours – Fall Semester	18		

REQUEST DEGREE EVALUATION

SUMMER

LAMN 397	1
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FOURTH YEAR

BIOL 400.....	4	NRMT 410.....	3
HIST 201, 202, 207 (OR) 208	3	NRMT 493.....	3
MGMT 484.....	3	SOCL 330.....	3
POSC 203	3	BLOCK ELECTIVE	5
BLOCK ELECTIVE	1	BLOCK ELECTIVES	
BLOCK ELECTIVE		(300-400 level)	2
(300-400 level)	3	Total Hours – Spring Semester	16
Total Hours – Fall Semester	17		

APPLY FOR GRADUATION

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NATURAL RESOURCE MANAGEMENT LAND SURVEYING CONCENTRATION

General Education Requirement 43 hours

Students must complete BIOL 101, GEOG 203, MATH 102, POSC 203 and SCNC 101 as part of the General Education requirement.

Natural Resource Management Core 33 hours

Land Surveying Concentration 52 hours

BIOL 109	Dendrology II	1
FRST 216	Wood Identification	1
LAND 121	Introduction to Land Surveying	3
LAND 123	Land Survey Descriptions- Interpretations and Writing	3
LAND 124	Land Survey Boundary Law	3
LAND 193	Survey Measurements and Computations I	4
LAND 197	Work Experience	1
LAND 230	Survey Measurements and Computations II	4
LAND 231	Retracement Surveys	3
LAND 232	Cartographic Surveying	4
LAND 240	Route and Construction Surveys	4
LAND 241	Energy Resource Surveying	2
LAND 244	Remote Sensing and Aerial Photo Interpretation	1
LAND 293	Survey Decisions/Professional Applications	6
LAND 335	Hydrology, Drainage and Subdivision Design	4
MATH 120	Precalculus	4
PHYS 201	General Physics I	4

Block Electives (300-400 level) 4 hours

Total minimum hours required for degree 131 hours

GATEWAY ASSESSMENT - LAND 293

CAPSTONE ASSESSMENT - NRMT 493

**NRMT: LAND SURVEYING TECHNOLOGY
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 109.....	1	LAND 123	3
ENGL 101	3	LAND 124	3
FRST 216	1	LAND 193	4
GSC 100	1	MATH 120	4
LAND 121.....	3	SCNC 101.....	4
MATH 102.....	3	Total Hours – Spring Semester	18
NRMT 125.....	3		
PED 201	1		
Total Hours – Fall Semester	16		

SUMMER

LAND 197.....	1
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SECOND YEAR

ENGL 102	3	BIOL 101.....	4
LAND 230.....	4	LAND 240.....	4
LAND 231.....	3	LAND 241	2
LAND 232.....	4	LAND 244	1
PHYS 201.....	4	LAND 293	6
Total Hours – Fall Semester	18	Total Hours – Spring Semester	17

THIRD YEAR

ART 200, CART 200 (OR)		ART 200, CART 200 (OR)	
MUSC 200	2	MUSC 200.....	2
CSCI 101	3	CART 101	3
MGMT 201.....	3	ENGL 203, 204, 205 (OR) 206	3
NRMT 201	3	GEOG 203	3
NRMT 234	3	HIST 201, 202, 207 (OR) 208	3
PED 101	1	MGMT ELECTIVE (300-400 level)	3
Total Hours – Fall Semester	15	Total Hours – Spring Semester	17

REQUEST DEGREE EVALUATION

FOURTH YEAR

BIOL 400.....	4	ENVR 352	4
CSCI 260	3	ENVR 393	4
PED 301	1	NRMT 493.....	3
POSC 203.....	3	BLOCK ELECTIVES	
LAND 335.....	4	(300-400 level)	4
Total Hours – Fall Semester	15	Total Hours – Spring Semester	15

APPLY FOR GRADUATION

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BACHELOR OF SCIENCE - BIOLOGY COMBINED WITH ASSOCIATE IN SCIENCE - FOREST TECHNOLOGY

General Education Requirements 43 hours

Students must take BIOL 101, CHEM 101 and MATH 102 as part of the General Education requirement.

Forestry Requirement 48 hours

BIOL 108	Dendrology I	1
BIOL 109	Dendrology II	1
BIOL 110	Dendrology III	1
BIOL 203	Plant Disease and Insect Control	3
FRST 103	Forest Measurements I	2
FRST 193	Forest Measurements II	3
FRST 197	Work Experience	1
(includes 8 weeks of summer work experience or an equivalent forestry project.)		
FRST 202	Forest Recreation & Wildlife Management	3
FRST 205	Wood Products, Processing and Marketing	2
FRST 206	Timber Harvest Planning and Systems	3
FRST 209	Silviculture and Vegetation Management	4
FRST 212	Timber Harvesting Techniques	2
FRST 214	Fire Protection	2
FRST 216	Wood Identification	1
FRST 293	Forest Management	3
LAND 121	Introduction to Land Surveying	3
LAND 244	Remote Sensing and Aerial Photo Interpretation	1
MGMT 202	Small Business Management	3
NRMT 125	Computer Assisted Mapping	3
NRMT 201	Forest Ecology	3
NRMT 234	GIS Applications I	3

Biology Requirements 37 hours

BIOL 293	Techniques of Science	2
BIOL 302	General Entomology	4
BIOL 305	General Botany	4
BIOL 351/ NRMT 351	Flora of West Virginia	4
BIOL 352	Plant Anatomy and Morphology (OR) Upper Division Biology	4
BIOL 361	Microbiology	4
BIOL 362	Plant Physiology (OR) Upper Division Biology	4

BIOL 400	Ecology and Field Biology	4
BIOL 456	Genetics	4
BIOL 493	Senior Seminar	2
BIOL 499	Research	2

Total minimum hours required for degree

128 hours

Certain Courses in this program have prerequisites; students should check course descriptions for required prerequisites.

FORESTRY: Gateway Assessment—FRST 193; Capstone Assessment—FRST 293

BIOLOGY: Gateway Assessment—BIOL 293; Capstone Assessment—BIOL 493

**BIOLOGY AND FOREST TECHNOLOGY
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 108.....	1	BIOL 101.....	4
BIOL 109.....	1	BIOL 110.....	1
ECON 201, GEOG 203, PSYC 201, SOCL 205 (OR) SOCS 225.....	3	ENGL 102	3
ENGL 101	3	FRST 193.....	3
FRST 103	2	LAND 121	3
FRST 214	2	NRMT 125.....	3
GSC 100	1	Total Hours – Spring Semester	17
MATH 102.....	3		
Total Hours – Fall Semester	16		

SUMMER

FRST 197	1
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SECOND YEAR

BIOL 203.....	3	FRST 202.....	3
FRST 209	4	FRST 205.....	2
FRST 212	2	FRST 206.....	3
LAND 244.....	1	FRST 216.....	1
NRMT 201	3	FRST 293.....	3
PED 201	1	MGMT 202.....	3
Total Hours – Fall Semester	14	NRMT 234.....	3
		Total Hours – Spring Semester	18

THIRD YEAR

BIOL 293.....	2	ART 200, CART 200 (OR) MUSC 200.....	2
CHEM 101	4	BIOL 305.....	4
CSCI 101	3	BIOL 361.....	4
HIST 201, 202, 207, 208 (OR) POSC 203.....	3	ENGL 203, 204, 205 (OR) 206	3
UPPER DIVISION BIOL ELECTIVE.....	4	HIST 201, 202, 207, 208 (OR) POSC 203	3
Total Hours – Fall Semester	16	PED 101.....	1
		Total Hours – Spring Semester	17

REQUEST DEGREE EVALUATION

FOURTH YEAR

ART 200, CART 200 (OR) MUSC 200	2
BIOL 352 (OR) UPPER DIVISION BIOL	4
BIOL 362 (OR) UPPER DIVISION BIOL	4
BIOL 400.....	4
BIOL 499.....	2
PED 301	1
Total Hours – Fall Semester	17

APPLY FOR GRADUATION

BIOL 302.....	4
BIOL 351/NRMT 351	3
BIOL 456.....	4
BIOL 493.....	2
CART 101	3
Total Hours – Spring Semester	16

**BACHELOR OF SCIENCE – BUSINESS
COMBINED WITH
ASSOCIATE IN SCIENCE - FOREST TECHNOLOGY**

General Education Requirements **43 hours**
Students must take BIOL 101 and MATH 102 as part of the General Education requirement.

Forestry Requirements		48 hours
BIOL 108	Dendrology I	1
BIOL 109	Dendrology II	1
BIOL 110	Dendrology III	1
BIOL 203	Plant Disease and Insect Control	3
FRST 103	Forest Measurements I	2
FRST 193	Forest Measurements II	3
FRST 197	Work Experience	1
(includes 8 weeks of summer work experience or an equivalent forestry project.)		
FRST 202	Forest Recreation & Wildlife Management	3
FRST 205	Wood Products, Processing and Marketing	2
FRST 206	Timber Harvest Planning and Systems	3
FRST 209	Silviculture and Vegetation Management	4
FRST 212	Timber Harvesting Techniques	2
FRST 214	Fire Protection	2
FRST 216	Wood Identification	1
FRST 293	Forest Management	3
LAND 121	Introduction to Land Surveying	3
LAND 244	Remote Sensing and Aerial Photo Interpretation	1
MGMT 202	Small Business Management	3
NRMT 125	Computer Assisted Mapping	3
NRMT 201	Forest Ecology	3
NRMT 234	GIS Application I	3

Business Requirements		45 hours
ACCT 231	Principles of Accounting I	3
BUSN 230	Quantitative Business Analysis I	3
BUSN 270	Business Law I	3
BUSN 330	Quantitative Business Analysis II	3
BUSN 470	Business Law II	3
ECON 202	Macroeconomics	3
ECON 420	The Financial System and Economy	3
FINC 321	Business Finance	3
FINC 421	Risk Management and Insurance	3
MGMT 383	Labor Management Relations	3

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MGMT 384	Human Resource Management	3
MGMT 484	Organizational Behavior	3
MGMT 487	Operations Management	3
MRKT 377	Sales Management and Technology	3
STAT 361	Introduction to Statistical Analysis	3

Total minimum hours required for degree **136 hours**

FORESTRY: Gateway Assessment—FRST 193
Capstone Assessment—FRST 293

BUSINESS: Gateway Assessment—FRST 293
Capstone Assessment—MGMT 487

**BUSINESS AND FOREST TECHNOLOGY
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 108.....	1	BIOL 101.....	4
BIOL 109.....	1	BIOL 110.....	1
ECON 201, GEOG 203, PSYC 201, SOCL 205 (OR) SOCS 225.....	3	ENGL 102	3
ENGL 101	3	FRST 193.....	3
FRST 103	2	LAND 121	3
FRST 214	2	NRMT 125.....	3
GSC 100	1	Total Hours – Spring Semester	17
MATH 102.....	3		
Total Hours - Fall Semester	16		

SUMMER

FRST 197	1
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SECOND YEAR

BIOL 203.....	3	FRST 202.....	3
FRST 209	4	FRST 205.....	2
FRST 212	2	FRST 206.....	3
LAND 244.....	1	FRST 216.....	1
NRMT 201	3	FRST 293.....	3
PED 201	1	MGMT 202.....	3
Total Hours – Fall Semester	14	NRMT 234.....	3
		Total Hours – Spring Semester	18

THIRD YEAR

ACCT 231	3	ECON 202	3
ART 200, CART 200 (OR) MUSC 200	2	ENGL 203, 204, 205 (OR) 206	3
BUSN 230	3	HIST 201, 202, 207 (OR) 208	3
CSCI 101	3	MGMT 383.....	3
MGMT 384.....	3	MGMT 484.....	3
PED 101	1	STAT 361	3
POSC 203.....	3	Total Hours – Spring Semester	18
Total Hours – Fall Semester	18		

REQUEST DEGREE EVALUATION

FOURTH YEAR

BUSN 270	3	ART 200, CART 200 (OR) MUSC 200.....	2
CART 101	3	BIOL 102, CHEM 100, 101, ENVR 101, PHYS 201, 209	
ECON 420.....	3	(OR) SCNC 101	4
FINC 421	3	BUSN 330	3
MRKT 377	3	BUSN 470	3
PED 301	1	FINC 321	3
Total Hours – Fall Semester	16	MGMT 487.....	3
		Total Hours – Spring Semester	18

APPLY FOR GRADUATION

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ASSOCIATE IN SCIENCE FOREST TECHNOLOGY

General Education			18 hours
BIOL 101	General Biology I	4	
ENGL 101	Critical Reading and Writing I	3	
ENGL 102	Critical Reading and Writing II: The American Mosaic	3	
GSC 100	The First-Year Experience	1	
MATH 102	College Algebra	3	
PED 201	First Aid and Safety	1	
Any one of the following:		3	
ECON 201	Principles of Microeconomics		
GEOG 203	World Regional Geography		
PSYC 201	General Psychology		
SOCL 205	Principles of Sociology		
SOCS 225	Introduction to Global Studies		
Area of Specialization			48 hours
BIOL 108	Dendrology I	1	
BIOL 109	Dendrology II	1	
BIOL 110	Dendrology III	1	
BIOL 203	Plant Disease and Insect Control	3	
FRST 103	Forest Measurements I	2	
FRST 193	Forest Measurements II	3	
FRST 197	Work Experience	1	
FRST 202	Forest Recreation and Wildlife Management	3	
FRST 205	Wood Products, Processing and Marketing	2	
FRST 206	Timber Harvest Planning and Systems	3	
FRST 209	Silviculture and Vegetation Management	4	
FRST 212	Timber Harvesting Techniques	2	
FRST 214	Fire Protection	2	
FRST 216	Wood Identification	1	
FRST 293	Forest Management	3	
LAND 121	Introduction to Land Surveying	3	
LAND 244	Remote Sensing Aerial Photo Interpretation	1	
MGMT 202	Small Business Management	3	
NRMT 125	Computer Assisted Mapping	3	
NRMT 201	Forest Ecology	3	
NRMT 234	GIS Application I	3	
Total minimum hours required for degree			66 hours

GATEWAY ASSESSMENT - FRST 193
CAPSTONE ASSESSMENT - FRST 293

**FOREST TECHNOLOGY
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 108	1	BIOL 101	4
BIOL 109	1	BIOL 110	1
ECON 201, GEOG 203, PSYC 201, SOCL 205 (OR) SOCS 225	3	ENGL 102.....	3
ENGL 101	3	FRST 193.....	3
FRST 103.....	2	LAND 121	3
FRST 214.....	2	NRMT 125.....	3
GSC 100.....	1	Total Hours - Spring Semester	17
MATH 102.....	3		
Total Hours - Fall Semester	16		

SUMMER

FRST 197	1
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SECOND YEAR

REQUEST DEGREE EVALUATION

BIOL 203	3	FRST 202.....	3
FRST 209	4	FRST 205.....	2
FRST 212.....	2	FRST 206.....	3
LAND 244	1	FRST 216.....	1
NRMT 201	3	FRST 293.....	3
PED 201	1	MGMT 202.....	3
Total Hours - Fall Semester	14	NRMT 234.....	3
		Total Hours - Spring Semester	18

APPLY FOR GRADUATION

210 Department of Land Resources

ASSOCIATE IN SCIENCE LAND SURVEYING TECHNOLOGY

General Education			18 hours
ENGL 101	Critical Reading and Writing I	3	
ENGL 102	Critical Reading and Writing II: The American Mosaic	3	
GSC 100	The First-Year Experience	1	
MATH 102	College Algebra (OR ABOVE)	3	
PED 201	First Aid and Safety	1	
SCNC 101	Earth Science	4	
Any one of the following:			3
ECON 201	Principles of Microeconomics		
GEOG 203	World Regional Geography		
HIST 201	History of World Cultures I		
HIST 202	History of World Cultures II		
HIST 207	U.S. History to 1877		
HIST 208	U.S. History Since 1877		
POSC 203	American National Government		
PSYC 201	General Psychology		
SOCL 205	Principles of Sociology		
SOCS 225	Introduction to Global Studies		
Area of Specialization			51 hours
BIOL 109	Dendrology II	1	
FRST 216	Wood Identification	1	
LAND 121	Introduction to Land Surveying	3	
LAND 123	Land Survey Descriptions-Interpretation and Writing	3	
LAND 124	Land Survey Boundary Law	3	
LAND 193	Survey Measurement and Computations I	4	
LAND 197	Work Experience	1	
LAND 230	Surveying Measurements and Computations II	4	
LAND 231	Retracement Surveys	3	
LAND 232	Cartographic Surveying	4	
LAND 240	Route and Construction Surveys	4	
LAND 241	Energy Resource Surveying	2	
LAND 244	Remote Sensing Aerial Photo Interpretation	1	
LAND 293	Survey Decisions/Professional Applications	6	
MATH 120	Precalculus	4	
NRMT 125	Computer Assisted Mapping	3	
PHYS 201	General Physics I	4	
Total minimum hours required for degree			69 hours

GATEWAY ASSESSMENT - LAND 193 CAPSTONE ASSESSMENT - LAND 293

**LAND SURVEYING
SUGGESTED PLAN OF STUDY**

FIRST YEAR

BIOL 109	1	ECON 201, GEOG 203, HIST 201,	
ENGL 101	3	202, 207, 208, POSC 203, PSYC 201,	
FRST 216	1	SOCL 205 (OR) SOCS 225	3
GSC 100	1	LAND 123	3
LAND 121	3	LAND 124	3
MATH 102	3	LAND 193	4
NRMT 125	3	MATH 120	4
PED 201	1	Total Hours - Spring Semester	17
Total Hours - Fall Semester	16		

SUMMER

LAND 197	1
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SECOND YEAR

REQUEST DEGREE EVALUATION

ENGL 102	3
LAND 230	4
LAND 231	3
LAND 232	4
PHYS 201	4
Total Hours - Fall Semester	18

APPLY FOR GRADUATION

LAND 240	4
LAND 241	2
LAND 244	1
LAND 293	6
SCNC 101	4
Total Hours - Spring Semester	17