

Learning Outcomes Submitted by Academic Units

Grouping	Learner Outcome		
Food & Agricultural Business-BS			
	<i>Students can explain and illustrate economic concepts and principles related to the market system's role in allocating society's resources to and within the food and fiber system.</i>	7/1/2015	6/30/2016
	<i>Students can explain and illustrate economic concepts and principles related to decision-making by consumers and producers with regard to agricultural commodities, food products, and natural resources.</i>	7/1/2015	6/30/2016
	<i>Students can explain basic principles in the areas of management, marketing and finance, and apply them in the context of agribusiness decision making.</i>	7/1/2015	6/30/2016
	<i>Students can use economic logic and quantitative data to analyze problems and identify solutions related to the food and fiber system, the natural resource base, and environmental quality.</i>	7/1/2015	6/30/2016
Natural Resource & Environmental Economics-BS			
	<i>Students can explain and illustrate economic concepts and principles related to the market system's role in allocating society's resources to and within the food and fiber system.</i>	7/1/2015	6/30/2016
	<i>Students can explain and illustrate economic concepts and principles related to decision-making by consumers and producers with regard to agricultural commodities, food products, and natural resources.</i>	7/1/2015	6/30/2016
	<i>Students can explain how environmental externalities, public goods, and scarce natural resources cause market failure, identify the effects of market failure on social welfare, and explain how various policy tools can be used to address these effects.</i>	7/1/2015	6/30/2016
	<i>Students can use economic logic and quantitative data to analyze problems and identify solutions related to the food and fiber system, the natural resource base, and environmental quality.</i>	7/1/2015	6/30/2016

Animal Science-MS			
	<i>Students will demonstrate the ability to apply advanced knowledge and conduct research necessary for deriving eventual solutions to problems impacting animal agriculture and humans.</i>	7/1/2015	6/30/2016
	<i>Students will demonstrate written and oral communication skills important for relaying scientific concepts to scientific and general audiences.</i>	7/1/2015	6/30/2016
Animal Science-PhD			
	<i>Student will demonstrate capacity to conduct independent, original research important for deriving eventual solutions to problems impacting animal agriculture and humans.</i>	7/1/2015	6/30/2016
	<i>Student will demonstrate written and oral communication skills for effectively communicating new scientific knowledge to any audience (e.g., scientific, undergraduate and graduate students and/or general).</i>	7/1/2015	6/30/2016
Environmental and Soil Sciences-BS			
	<i>Demonstrate competency in appropriate discipline areas.</i>	7/1/2015	6/30/2016
	<i>Demonstrate effective communication.</i>	7/1/2015	6/30/2016
	<i>Demonstrate understanding and appreciation of global and societal impacts.</i>	7/1/2015	6/30/2016
	<i>Demonstrate the ability to analyze and interpret data.</i>	7/1/2015	6/30/2016
Environmental and Soil Sciences-MS			
	<i>Demonstrate the ability to orally communicate their subject-based knowledge to appropriate audiences.</i>	7/1/2015	6/30/2016
	<i>Demonstrate knowledge of the discipline and the ability to convey research findings through publication in appropriate peer-reviewed journals and presentations to scientific audiences at international, national, or regional scientific meetings.</i>	7/1/2015	6/30/2016
	<i>Demonstrate knowledge of pertinent subject area literature, the scientific method, and experimental design.</i>	7/1/2015	6/30/2016
Forestry-BS			
	<i>Students will demonstrate knowledge and understanding of forestry in one of the three concentrations</i>	7/1/2015	6/30/2016
	<i>Students can apply forest and land management techniques presented in the curriculum</i>	7/1/2015	6/30/2016
	<i>Students will develop a depth of professional knowledge, the ability to problem solve, and critical thinking skills comparable to other professional forestry programs.</i>	7/1/2015	6/30/2016
Forestry-MS			

	<i>Students are able to use appropriate theory to conceptualize research problems.</i>	7/1/2015	6/30/2016
	<i>Students are able to use appropriate methods and procedures to achieve specific research objectives.</i>	7/1/2015	6/30/2016
	<i>Students are able to speak to professional audiences.</i>	7/1/2015	6/30/2016
	<i>Students have mastered information relevant to their thesis and field of study.</i>	7/1/2015	6/30/2016
Natural Resources-PhD			
	<i>Students are able to use appropriate theory to conceptualize research problems.</i>	7/1/2015	6/30/2016
	<i>Students are able to use appropriate methods and procedures to achieve specific research objectives.</i>	7/1/2015	6/30/2016
	<i>Students are able to speak to professional audiences.</i>	7/1/2015	6/30/2016
	<i>Students have mastered information relevant to their dissertation and field of study.</i>	7/1/2015	6/30/2016
Wildlife & Fisheries Science-BS			
	<i>Students will demonstrate knowledge and understanding of wildlife and fisheries science in one of the two concentrations</i>	7/1/2015	6/30/2016
	<i>Students can apply wildlife and fisheries science techniques presented in the curriculum</i>	7/1/2015	6/30/2016
	<i>Students will develop a depth of professional knowledge, the ability to problem solve, and critical thinking skills comparable to other professional wildlife and fisheries science programs</i>	7/1/2015	6/30/2016
Wildlife & Fisheries Science-MS			
	<i>Students are able to use appropriate theory to conceptualize research problems.</i>	7/1/2015	6/30/2016
	<i>Students are able to use appropriate methods and procedures to achieve specific research objectives.</i>	7/1/2015	6/30/2016
	<i>Students are able to speak to professional audiences.</i>	7/1/2015	6/30/2016
	<i>Students have mastered information relevant to their thesis and field of study.</i>	7/1/2015	6/30/2016
Architecture-BArch			
	<i>Graduates of the Bachelor of Architecture (B. Arch) program will be able to demonstrate that they have the basic knowledge, skills, and abilities necessary to enter the profession and to become licensed architects.</i>	7/1/2015	6/30/2016

	<i>Graduating students must demonstrate the ability to build abstract relationships and understand the impact of architectural design based on research and analysis of multiple theoretical, social, political, economic, cultural and environmental contexts.</i>	7/1/2015	6/30/2016
	<i>Integrated Building Practices, Technical Skills and Knowledge: Graduating students must demonstrate a comprehension of the technical aspects of design, systems and materials, and be able to apply that comprehension in their coursework.</i>	7/1/2015	6/30/2016
	<i>Leadership and Practice: Graduating students must have an understanding of the architect's role in managing and advocating for legal, ethical, and critical action for the good of the client, society and the public.</i>	7/1/2015	6/30/2016
Architecture-MArch			
	<i>Graduates of the Master of Architecture (M Arch first professional degree) program will be able to demonstrate that they have the basic knowledge, skills, and abilities necessary to enter the profession and to become licensed architects.</i>	7/1/2015	6/30/2016
	<i>Graduating students must demonstrate the ability to build abstract relationships and understand the impact of architectural design based on research and analysis of multiple theoretical, social, political, economic, cultural and environmental contexts.</i>	7/1/2015	6/30/2016
	<i>Integrated Building Practices, Technical Skills and Knowledge: Graduating students must demonstrate a comprehension of the technical aspects of design, systems and materials, and be able to apply that comprehension in their coursework.</i>	7/1/2015	6/30/2016
	<i>Leadership and Practice: Graduating students must have an understanding of the architect's role in managing and advocating for legal, ethical, and critical action for the good of the client, society and the public.</i>	7/1/2015	6/30/2016
Conservation & Stewardship-Certificate			
	<i>Selective Skill Acquisition: Learning of new techniques and methodologies specific relative to issues of conservation and stewardship that can be directly applied to one's practice upon completion of the certificate.</i>	7/1/2015	6/30/2016
	<i>Interdisciplinary Knowledge: Learning about developments in the discipline and profession specific to issues of conservation and stewardship, to place techniques and methodologies into a larger context relative to national and international market trends.</i>	7/1/2015	6/30/2016

<i>Intra-disciplinary Knowledge: Learning about developments in the discipline and profession specific to issues of conservation and stewardship as indexed across a range of related disciplines and professions.</i>	7/1/2015	6/30/2016
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High Performance Buildings-Certificate

<i>Selective Skills Acquisition: Learning of new techniques and methodologies specific relative to issues of high performance buildings that can be directly applied to one's practice upon completion of the certificate.</i>	7/1/2015	6/30/2016
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<i>Interdisciplinary Knowledge: Learning about developments in the discipline and profession specific to advancing technologies and applications in high performance building design, and to place techniques and methodologies into a larger context.</i>	7/1/2015	6/30/2016
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<i>Intra-disciplinary Knowledge: Learning about developments in the discipline and profession specific to issues of high performance building as indexed across a range of related disciplines and professions.</i>	7/1/2015	6/30/2016
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Sustainable Design-Certificate

<i>Selective Skills Acquisition: Learning of new techniques and methodologies specific to issues of sustainable design that can be directly applied to the advancement of sustainable practice upon completion of the certificate.</i>	7/1/2015	6/30/2016
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<i>Interdisciplinary Knowledge: Learning about developments in the discipline and profession specific to sustainable technologies and materials research in sustainable design practice, and to place techniques and methodologies into a larger context relative</i>	7/1/2015	6/30/2016
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<i>Intra-disciplinary Knowledge: Learning about developments in the discipline and profession specific to issues of sustainable design practice as indexed across a range of related disciplines and professions.</i>	7/1/2015	6/30/2016
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Urban Design-Certificate

<i>Selective Skills Acquisition: Learning of new techniques and methodologies specific to issues of urban design and development that can be directly applied to the advancement of long-term sustainable urban design practice upon completion of the certificate</i>	7/1/2015	6/30/2016
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<i>Interdisciplinary Knowledge: Learning about new developments in the discipline and profession specific to urban design and sustainable urban development in</i>	7/1/2015	6/30/2016
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practice, and to place techniques and methodologies into a larger context.

Intra-disciplinary Knowledge: Learning about developments in the discipline and profession specific to issues of urban design practice as indexed across a range of related disciplines and professions. 7/1/2015 6/30/2016

Geological & Environmental Studies-BS

Indicate knowledge of basic principles of Geology and Environmental Studies. 7/1/2015 6/30/2016

Demonstrate the ability to engage in the scientific process through the collection and evaluation of data, testing of hypotheses, communication of the results. 7/1/2015 6/30/2016

Illustrate critical thinking and communication skills necessary to address issues in geology and environmental studies at the core level. 7/1/2015 6/30/2016

Environmental Engineering-MS

Student has demonstrated higher-level thinking skills such as analysis, synthesis, and evaluation to solve problems related environmental engineering or water resources. 7/1/2015 6/30/2016

Use written communication to describe research results or the practical implications of research. 7/1/2015 6/30/2016

Use oral communication to describe research results or the practical implications of research. 7/1/2015 6/30/2016

Power & Energy Systems-Certificate

Student can apply principles of entrepreneurship, economics, and product development in engineering disciplines 7/1/2015 6/30/2016

Student can apply principles of entrepreneurship, economics, and product development in engineering disciplines 7/1/2015 6/30/2016

Student is aware of principal ongoing research topics in the power and energy systems field 7/1/2015 6/30/2016

Student is aware of principal ongoing research topics in the power and energy systems field 7/1/2015 6/30/2016

Student has achieved mastery of theory related to a technical concentration in the power and energy systems field 7/1/2015 6/30/2016

Student has achieved mastery of theory related to a technical concentration in the power and energy systems field 7/1/2015 6/30/2016

Energy Science & Engineering-PhD

<i>Demonstrate understanding of core content knowledge in energy science and engineering</i>	7/1/2015	6/30/2016
<i>Engage in interdisciplinary science and engineering coursework with consideration of technological, scientific, entrepreneurial, and policymaking perspectives</i>	7/1/2015	6/30/2016
<i>Analyze and synthesize current science and engineering literature to address a problem in a thematic area of energy science and engineering.</i>	7/1/2015	6/30/2016
<i>Construct and defend a proposal to carry out an independent, original research project in energy science and engineering and defend this proposal in an oral presentation to a doctoral committee.</i>	7/1/2015	6/30/2016
<i>Complete and defend a doctoral dissertation on a topic requiring specialized and interdisciplinary knowledge in energy science and engineering.</i>	7/1/2015	6/30/2016

IDP Sustainability-BA

<i>Gain an understanding of social and physical systems and their interrelationships, and be able to predict, access, and analyze the effects of human activities on those systems.</i>	7/1/2015	6/30/2016
<i>Explore and critically analyze the environmental, social, and economic dimensions of sustainability.</i>	7/1/2015	6/30/2016
<i>Evaluate and reflect on sustainability theories at local, regional, and global scales.</i>	7/1/2015	6/30/2016
<i>Engage in and explore methodologies used to research and analyze sustainability issues, and evaluate solutions to sustainability issues.</i>	7/1/2015	6/30/2016
<i>Participate in activities that explore career opportunities in sustainability and sustainability related fields.</i>	7/1/2015	6/30/2016

Ecology & Evolutionary Biology-MS

<i>Students will demonstrate knowledge of their field as it applies to developing an independent research project.</i>	7/1/2015	6/30/2016
<i>Students will demonstrate an ability to orally communicate concepts of ecology and evolutionary biology.</i>	7/1/2015	6/30/2016
<i>Students will demonstrate an ability to communicate concepts and original research results in writing.</i>	7/1/2015	6/30/2016

Geography-BA

<i>Students will be able to design and illustrate spatial data through maps that can be understood by a general audience.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Students can design a research project and create a research portfolio to be used in career preparation.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Students can identify job opportunities in the public, private, and academic sectors. Additionally, students will be prepared to explore these opportunities.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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Landscape Architecture-MLA, MALA, MSLA

<i>Communicate effectively through multiple modes and media including visual/graphic, textual, and oral.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Awareness of contemporary and historical landscape architecture professional projects, designers, and contexts</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Awareness of, and intermediate to advanced practical skills necessary to perform technical aspects of the profession such as grading, drainage, material construction, and construction documentation.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Working knowledge of commonly used plant materials and regional ecological systems</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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Disaster, Displacement & Human Rights-Certificate

<i>Students demonstrate command of theories and methods of anthropology in the analysis of disasters, displacement and human rights.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Students demonstrate understanding of the relationships between disasters (e.g. war, tsunamis, famine), displacement (refugee migration, internal displacement), and human rights concepts (norms, laws, rights claims)</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Students demonstrate ability to apply theories and methods in the analysis of DDHR to conceptualize possible responses to practical, real-world scenarios.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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Geology-MS

<i>Demonstrate an understanding of Earth's (and other planetary systems') physical, chemical, and biological systems that reflects the base knowledge necessary for completion of individual research projects in earth and planetary sciences...</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Develop a research proposal that has the potential to generate new scientific knowledge.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Prepare and defend a written scientific thesis that reflects a thorough understanding of the field of research. The thesis</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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should make a substantial contribution of new knowledge to the field.

Present and defend scientific research in an oral/visual format, which is effective for communicating ideas, methods, and findings to an audience of other student and faculty researchers in the field. 7/1/2015 6/30/2016

Materials Science & Engineering-MS

Clearly communicate scholarly research and results through a report (for non-thesis option) or a thesis (for thesis option). 7/1/2015 6/30/2016

Clearly communicate scholarly research and results through an oral presentation (for both options). 7/1/2015 6/30/2016

Effectively analyze the literature to identify and evaluate important and related scholarly activities (for both options). 7/1/2015 6/30/2016

Demonstrate critical thinking (for both options) and apply modern tools and theory (for thesis option) to solve engineering or scientific problems. 7/1/2015 6/30/2016

Food Science & Technology-BS

7/1/2015 6/30/2016

Apply critical thinking skills to new situations.

Identify the conditions under which the important pathogens are commonly inactivated, killed or made harmless in foods. 7/1/2015 6/30/2016

Demonstrate the use and practice of different levels of oral and written communication skills. 7/1/2015 6/30/2016

Communication and critical thinking skills transcend all disciplines of food science. FST graduates will demonstrate critical thinking, creativity and effective communication. 7/1/2015 6/30/2016

Integrate interdisciplinary knowledge to devise a systematic approach to address food industry-related problems or situations. 7/1/2015 6/30/2016

<i>Apply and evaluate practices of food processing and principles of engineering to efficiently preserve, or add value to, food products while maintaining food safety and quality.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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Public Health-MPH

<i>Students will demonstrate readiness for professional practice in health-related settings.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Students will demonstrate critical thinking & problem-solving abilities reflecting integration of public health competencies</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Students will demonstrate effective presentation skills.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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<i>Students will appraise mastery of 12 core public health competencies.</i>	<i>7/1/2015</i>	<i>6/30/2016</i>
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Most programs, but not all, have official Learning Outcomes. For a better idea of the scope of sustainability-focused and related programs offered at UT, see below.

List of UTK Programs Incorporating Sustainability

1. Watershed Minor, Undergraduate
2. Watershed Minor, Graduate
3. Natural Resource and Environmental Economics Major, Undergraduate
4. Natural Resource and Environmental Economics Minor, Undergraduate
5. Natural Resource Economics Concentration, Graduate (MS)
6. Environmental and Soil Sciences Major, Undergraduate
7. Environmental and Soil Sciences Minor, Undergraduate
8. Conservation Agriculture and Environmental Sustainability Concentration, Undergraduate
9. Environmental Science Concentration, Undergraduate
10. Environmental and Soil Sciences Major, Graduate (MS)
11. Environmental and Soil Sciences Concentration, Graduate (PhD)
12. Forestry Major, Undergraduate
13. Forestry Minor, Undergraduate
14. Forest Resources Management Concentration, Undergraduate
15. Urban Forestry Concentration, Undergraduate
16. Wildland Recreation Concentration, Undergraduate
17. Forestry Major, Graduate (MS)
18. Bio-Based Products and Wood Science Technology Minor, Graduate (MS)
19. Natural Resources Major, Graduate (PhD)
20. Natural Resource Economics Minor, Graduate (PhD)
21. Wildlife Health Minor, Graduate (PhD)
22. Wildlife and Fisheries Science Major, Undergraduate
23. Wildlife and Fisheries Science Minor, Undergraduate
24. Wildlife Health Concentration, Undergraduate
25. Wildlife and Fisheries Science Management Concentration, Undergraduate
26. Wildlife and Fisheries Science Major, Graduate (MS)
27. Wildlife Health Minor, Graduate (MS)
28. Bioenergy Concentration, Undergraduate
29. Organic Production Concentration, Undergraduate
30. Ecology and Evolutionary Biology Concentration, Undergraduate
31. Honors Ecology and Evolutionary Biology Concentration, Undergraduate
32. Ecology Concentration, Graduate (MS)
33. Ecology Concentration, Graduate (PhD)
34. Environmental Studies Minor, Undergraduate
35. Geography Major, Undergraduate

36. Geography Minor, Undergraduate
37. Geography Major, Graduate (MS)
38. Environmental Policy Minor, Graduate (MS)
39. Geography Major, Graduate (PhD)
40. Sustainability Concentration, Undergraduate
41. Sustainability Minor, Undergraduate
42. Environmental Issues Concentration (Sociology), Undergraduate
43. Environmental Issues and Globalization Minor (Sociology), Undergraduate
44. Environmental Sociology Concentration, Graduate (MS)
45. Environmental Sociology Concentration, Graduate (PhD)
46. Landscape Architecture Major, Graduate (MLA)
47. Sustainable Design Concentration (Architecture), Graduate (MArch)
48. Environmental Chemistry Concentration, Graduate (MS)
49. Environmental Chemistry Concentration, Graduate (PhD)
50. Environmental Engineering Minor, Undergraduate
51. Environmental Engineering Major, Graduate (MS)
52. Water Resource Engineering Concentration, Graduate (MS)
53. Environmental Engineering Concentration, Graduate (PhD)
54. Climate Impacts Engineering Concentration, Graduate (PhD)
55. Water Resource Engineering Concentration, Graduate (PhD)
56. Agricultural Systems Technology Concentration, Undergraduate
57. Construction Science Concentration, Undergraduate
58. Disasters, Displacement, and Human Rights Concentration, Undergraduate
59. Science Education Grades 6-8 Minor, Undergraduate
60. Power and Energy Systems Concentration, Undergraduate
61. Environmental Studies Concentration, Undergraduate
62. Restoration and Conservation Science Concentration, Undergraduate
63. Horticulture Science and Production Concentration, Undergraduate
64. Landscape Design Concentration, Undergraduate
65. Public Horticulture Concentration, Undergraduate
66. Soil Science Concentration, Undergraduate
67. Geology Minor, Undergraduate
68. Geology Concentration, Undergraduate
69. Geology Major, Undergraduate
70. International Agriculture and Natural Resources Minor, Undergraduate
71. Materials Science and Engineering, Undergraduate
72. Materials Science and Engineering, Graduate

73. Food Science and Technology, Undergraduate
74. Food Science and Technology, Graduate
75. Public Health, Undergraduate
76. Public Health, Graduate
77. Public Policy & Administration, Undergraduate
78. Public Policy & Administration, Graduate
79. Agricultural Leadership, Education, and Communications, Undergraduate
80. Agricultural Leadership, Education, and Communications, Graduate
81. Food & Agricultural Business Major, Undergraduate
82. Food & Agricultural Business Minor, Undergraduate

Detailed List of UTK Programs with Descriptions:

Department: Agriculture and Natural Resources

Program: Watershed Minor

Type: Minor

Level: Undergraduate

Description: Growing awareness of the complexity of water quantity and quality issues related to human activities leads to dealing with those issues on a watershed scale. These Minors are for graduate and undergraduate students wishing to develop expanded upon knowledge and skills in watershed sciences/engineering, planning and design, and culture and policy issues related to water. These are especially useful for careers in natural resource policy, water and land management, sustainable development and design for private industry, and stormwater management for government agencies. Although the minors are housed in the College of Agricultural Sciences and Natural Resources, they are designed to be intercollegiate and are available to any graduate or undergraduate student at the University of Tennessee, Knoxville, regardless of major, department or college.

Department: Agriculture and Natural Resources

Program: Watershed Minor

Type: Minor

Level: Graduate (MS)

Description: Growing awareness of the complexity of water quantity and quality issues related to human activities leads to dealing with those issues on a watershed scale. These Minors are for graduate and undergraduate students wishing to develop expanded upon knowledge and skills in watershed sciences/engineering, planning and design, and culture and policy issues related to water. These are especially useful for careers in natural resource policy, water and land management, sustainable development and design for private industry, and stormwater management for government agencies. Although the minors are housed in the College of Agricultural Sciences and Natural Resources, they are designed to be intercollegiate and are available to any graduate or undergraduate student at the University of Tennessee, Knoxville, regardless of major, department or college.

Department: Agricultural and Resource Economics

Program: Natural Resource and Environmental Economics

Type: Major

Level: Undergraduate

Description: Students majoring in natural resource and environmental economics are prepared for a variety of careers in both the private and public sectors. With increasing competition for limited land, water and other natural resources in the U.S. and throughout the world, as well as growing concern about environmental degradation of various sorts, there is a growing need for professionals who can assist in the process of balancing economic and environmental tradeoffs. Private firms face serious challenges in meeting stricter environmental regulations and achieving self-imposed environmental goals. Public agencies must continually seek to design policies so that society's resource conservation or environmental quality goals are achieved in a cost-effective manner.

Department: Agricultural and Resource Economics

Program: Natural Resource Economics

Type: Concentration

Level: Undergraduate

Description: To provide students with natural resource economics skills, the Natural Resource Economics concentration integrates coursework in agricultural and resource economics with courses from other disciplines, such as geography, political science, forestry, bio-systems engineering and sociology. Both concentrations require 31 hours of coursework and a thesis. The Agricultural Economics concentration has a non-thesis option, which requires 36 hours of coursework and a research report.

Department: Agricultural and Resource Economics

Program: Natural Resource and Environmental Economics

Type: Major

Level: Graduate (MS)

Description: Students majoring in natural resource and environmental economics are prepared for a variety of careers in both the private and public sectors. With increasing competition for limited land, water and other natural resources in the U.S. and throughout the world, as well as growing concern about environmental degradation of various sorts, there is a growing need for professionals who can assist in the process of balancing economic and environmental tradeoffs. Private firms face serious challenges in meeting stricter environmental regulations and achieving self-imposed environmental goals. Public agencies must continually seek to design policies so that society's resource conservation or environmental quality goals are achieved in a cost-effective manner.

Department: Biosystems Engineering and Soil Science

Program: Environmental and Soil Sciences

Type: Major

Level: Undergraduate

Description: Many human activities adversely impact soil, water, and environmental quality, and there is a constant need for experts in the technologies required to collect sound information and to provide food, fiber, and shelter in an environmentally-sound manner. The Bachelor of Science in Environmental and Soil Sciences provides students with a strong grounding in basic sciences or engineering technology to prepare them for a broad range of possible careers.

Department: Biosystems Engineering and Soil Science

Program: Environmental and Soil Sciences

Type: Minor

Level: Undergraduate

Description: Many human activities adversely impact soil, water, and environmental quality, and there is a constant need for experts in the technologies required to collect sound information and to provide food, fiber, and shelter in an environmentally-sound manner. The Bachelor of Science in Environmental and Soil Sciences provides students with a strong grounding in basic sciences or engineering technology to prepare them for a broad range of possible careers.

Department: Biosystems Engineering and Soil Science

Program: Conservation Agriculture & Environmental Sustainability

Type: Concentration

Level: Undergraduate

Description: The Conservation Agriculture and Environmental Sustainability Concentration provides graduates with a well-rounded background in soil science, agronomy, pest management, and agribusiness economics. This program is designed to provide students with the skills needed for success as either a manager or consultant in production agronomy. This concentration provides a basic science foundation in soil science, geology, biology, chemistry, mathematics, and economics as well as a solid foundation in oral and written communication. From this solid foundation students are introduced to basic and applied sciences many of which include hands-on laboratories and field trips in plant physiology, disease and pest management, and soil science. Students can select from technical electives in their interest areas including agricultural technologies or environmental.

Department: Biosystems Engineering and Soil Science

Program: Environmental Science

Type: Concentration

Level: Undergraduate

Description: This four-year Environmental Science Concentration is offered through a B.S. Degree in Environmental and Soil Sciences in the College of Agricultural Sciences and Natural Resources. Environmental Science is a blended program of science and technology that provides a strong, broad background in the natural sciences. The plan of study emphasizes human impacts on the long-term use and productivity of land and water resources. Emphasis is also placed on the tools used in the management of these resources. The curriculum provides a good foundation in the collection and analysis of the information required to characterize resource conservation problems and to make good resource use decisions. This concentration has provisions for elective courses to be taken in the specified subject areas. Students consult with their advisors each semester about their interests and the appropriate classes to meet the students' needs.

Department: Interdepartmental

Program: Environmental and Soil Sciences

Type: Concentration

Level: Graduate (MS)

Description: In the Environmental & Soil Sciences masters and doctoral programs, we seek to give students a firm understanding of both soils and their environmental context, enabling them to make informed decisions about conserving and managing our land and water resources. The complementary strengths of our soil scientists, climatologist, together with interaction with the engineering faculty, allow students to gain an understanding of environmental systems that will serve them well in their professional careers.

Department: Interdepartmental

Program: Environmental and Soil Sciences

Type: Concentration

Level: Graduate (PhD)

Description: In the Environmental & Soil Sciences masters and doctoral programs, we seek to give students a firm understanding of both soils and their environmental context, enabling them to make informed decisions about conserving and managing our land and water resources. The complementary strengths of

our soil scientists, climatologist, together with interaction with the engineering faculty, allow students to gain an understanding of environmental systems that will serve them well in their professional careers.

Department: Forestry, Wildlife and Fisheries

Program: Forestry

Type: Major

Level: Undergraduate

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

Department: Forestry, Wildlife and Fisheries

Program: Forestry

Type: Minor

Level: Undergraduate

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

Department: Forestry, Wildlife and Fisheries

Program: Forest Resources Management

Type: Concentration

Level: Undergraduate

Description: The Forest Resources Management Concentration provides an opportunity to obtain an education related to the management of the broad spectrum of wildland resources. In addition to the core of required courses, there are about 18 elective credit hours for broad studies or specialized training in one or more areas of forestry. These areas and related fields of study are: Forest Biology including plant physiology and morphology, ecology, genetics, tree nutrition, forest soils; Forest Business Management including economics, accounting, finance, marketing, management science; Forest Inventory including mathematics, statistics, computer science, photogrammetry; Forest Recreation, including natural and social sciences; and Wildlife Management including ecology and botany.

Department: Forestry, Wildlife and Fisheries

Program: Urban Forestry

Type: Concentration

Level: Undergraduate

Description: The urban forestry concentration is an interdisciplinary program emphasizing forestry, arboriculture, horticulture, urban forest management and urban wildlife. In addition to the general education courses, the urban forestry curriculum includes core courses in the traditional forestry discipline. The curriculum is designed to prepare graduates who can evaluate, plan, and resolve problems in an urban and traditional forest. Foresters work closely with the public and private sector, so the development of excellent personnel management and communication skill is encouraged. In addition to the completion of courses, students are required to complete a 6-10 week professional internship experience (2 credits) in the summer prior to their senior year. Internships are structured to address specific learning objectives established by the instructor and field supervisor.

Department: Forestry, Wildlife and Fisheries

Program: Wildland Recreation

Type: Concentration

Level: Undergraduate

Description: This concentration is an interdisciplinary degree that prepares students to work in natural resource based recreation settings on private and public lands, including local, state, and national parks, and other state and federal agencies and private or non-profit organizations providing outdoor recreational opportunities. Students prepare for professional positions in the planning, development, interpretation, and management of private and public lands for recreational purposes. Students also learn the basic philosophy and principles associated with the use of leisure time and in the relationship of natural resources to the constructive uses of leisure time.

Department: Forestry, Wildlife and Fisheries

Program: Forestry

Type: Major

Level: Graduate (MS)

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

Department: Forestry, Wildlife and Fisheries

Program: Natural Resources

Type: Major

Level: Graduate (PhD)

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

Department: Forestry, Wildlife and Fisheries

Program: Natural Resource Economics

Type: Minor

Level: Graduate (PhD)

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

Department: Forestry, Wildlife and Fisheries

Program: Wildlife Health

Type: Minor

Level: Graduate (PhD)

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

Department: Forestry, Wildlife and Fisheries

Program: Wildlife and Fisheries Science

Type: Major

Level: Undergraduate

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

Department: Forestry, Wildlife and Fisheries

Program: Wildlife & Fisheries Management

Type: Concentration

Level: Undergraduate

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension. Wildlife and fisheries management is the science and art of maintaining populations of wild animals at levels consistent with the best interests of wild species and of the public. Management goals may be aesthetic, economic, or ecological. Success depends upon wildlife and fisheries biologists providing assistance; scholarly application of scientific information and methods to these goals; ecological perspective; and execution of programs to maintain past successes, to prevent repetition of past failures, and to prepare for future needs.

Department: Forestry, Wildlife and Fisheries

Program: Wildlife Health

Type: Concentration

Level: Undergraduate

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension. The Department of Forestry, Wildlife and Fisheries Science is pleased to announce a new degree concentration in Wildlife Health. The curriculum provides training for biologists interested in careers in Wildlife Health and meets all entry requirements for Veterinary School. Wildlife Health is the science of wildlife disease issues and impacts on our natural resources. Wildlife Health professionals must also learn about the ecology and management of our wildlife heritage and understand how to maintain healthy populations of animals consistent with the needs of the public.

Department: Forestry, Wildlife and Fisheries

Program: Wildlife Health

Type: Minor

Level: Undergraduate

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

Department: Forestry, Wildlife and Fisheries

Program: Wildlife and Fisheries Science

Type: Major

Level: Graduate (MS)

Description: The mission of the Department of Forestry, Wildlife and Fisheries is to advance the management, utilization, and appreciation of natural resources in Tennessee, the region, and beyond through programs in teaching, research, and extension.

Department: Plant Sciences

Program: Bioenergy

Type: Concentration

Level: Undergraduate

Description: The bioenergy concentration is intended for students who are interested in pursuing careers in the quickly-expanding biofuels and bioenergy fields. The graduate will have the background and internship experience to enter directly into the bioenergy workforce. The student will have the opportunity to explore branch disciplines of bioenergy such as agronomy, biotechnology, business and economics, chemistry, engineering or microbiology.

Department: Plant Sciences
Program: Organic Production
Type: Concentration
Level: Undergraduate

Description: The organic production concentration of study in the Plant Sciences Department, integrates plant science with soil science, agricultural economics, entomology, ecology, and plant pathology to give students the knowledge and skills needed for production and management of organic cropping systems. This program is offered to those interested in owning or managing organic farms, working with agricultural extension or governmental and nongovernmental organizations, joining the Peace Corps or other international agricultural development efforts, consulting, pursuing a graduate education in agronomy or horticulture, or working in other areas of the growing organic foods and agricultural products industry. Students have the opportunity to develop a personalized program in organic production by selecting from technical electives offered in a wide variety of areas, including environmental sciences, food science, marketing, sociology, foreign language, and other areas related to agricultural sustainability. Classroom instruction is enhanced by the 90-acre Organic Crops Research Unit located near the University of Tennessee campus.

Department: Division of Biology
Program: Ecology & Evolutionary Biology
Type: Concentration
Level: Undergraduate

Description: The Ecology & Evolutionary Biology concentration in the undergraduate Biology major is appropriate for students pursuing careers or interests that require a better understanding of our natural world. Career opportunities exist in education at all levels: basic and applied research at colleges and universities; in governmental agencies; and in the private sector; ecological consulting; conservation and natural resource management; environmental planning; and the human health and veterinary sciences.

Department: Division of Biology
Program: Ecology & Evolutionary Biology
Type: Concentration
Level: Undergraduate

Description: The Ecology & Evolutionary Biology concentration in the undergraduate Biology major is appropriate for students pursuing careers or interests that require a better understanding of our natural world. Career opportunities exist in education at all levels: basic and applied research at colleges and universities; in governmental agencies; and in the private sector; ecological consulting; conservation and natural resource management; environmental planning; and the human health and veterinary sciences.

Department: Ecology and Evolutionary Biology
Program: Ecology
Type: Concentration
Level: Graduate (MS)

Description: The Ecology & Evolutionary Biology concentration in the undergraduate Biology major is appropriate for students pursuing careers or interests that require a better understanding of our natural world. Career opportunities exist in education at all levels: basic and applied research at colleges and universities; in governmental agencies; and in the private sector; ecological consulting; conservation and natural resource management; environmental planning; and the human health and veterinary sciences.

Department: Ecology and Evolutionary Biology
Program: Ecology

Type: Concentration

Level: Graduate (PhD)

Description: The Ecology & Evolutionary Biology concentration in the undergraduate Biology major is appropriate for students pursuing careers or interests that require a better understanding of our natural world. Career opportunities exist in education at all levels: basic and applied research at colleges and universities; in governmental agencies; and in the private sector; ecological consulting; conservation and natural resource management; environmental planning; and the human health and veterinary sciences.

Department: Earth and Planetary Sciences

Program: Environmental Studies

Type: Minor

Level: Undergraduate

Description: The Environmental Studies concentration provides sound scientific, socioeconomic, and philosophical background for understanding the Earth's environment and prepares the student for careers in science, education, law, business, public policy, and many other fields.

Department: Geography

Program: Geography

Type: Major

Level: Undergraduate

Description: Students work alongside award-winning and renowned scholar-teachers who place great value on field work, international travel and scholarship, mapping and location analysis, the natural environment and sustainable development, state of the art technology and data analysis (quantitative and qualitative), community engagement, responsible planning, and social justice.

Department: Geography

Program: Geography

Type: Minor

Level: Undergraduate

Description: Students work alongside award-winning and renowned scholar-teachers who place great value on field work, international travel and scholarship, mapping and location analysis, the natural environment and sustainable development, state of the art technology and data analysis (quantitative and qualitative), community engagement, responsible planning, and social justice.

Department: Geography

Program: Geography

Type: Major

Level: Graduate (MS)

Description: The faculty, with extensive world-wide experience (Latin America, the Caribbean, Southern and Eastern Asia, Europe, Africa, the American West, and the American South), is exceptionally qualified to direct graduate research in geography of the natural environment (especially biogeography, paleoclimatology, and geomorphology), spatial analysis (especially location analysis, environmental modeling, and geographic information science), and human geography (especially economic, urban, transportation, population, and cultural).

Department: Geography

Program: Environmental Policy

Type: Minor

Level: Graduate (MS)

Description: The program is designed to give Master's level graduate students an opportunity to develop an interdisciplinary specialization in environmental policy. While administered through the Economics Department, the program is coordinated by a committee of representatives from the following participating departments: Agricultural Economics and Rural Sociology; Civil and Environmental Engineering; Ecology; Economics; Forestry, Wildlife and Fisheries; Geography; Management; Political Science; and Sociology.

Department: Geography

Program: Geography

Type: Major

Level: Graduate (PhD)

Description: The faculty, with extensive world-wide experience (Latin America, the Caribbean, Southern and Eastern Asia, Europe, Africa, the American West, and the American South), is exceptionally qualified to direct graduate research in geography of the natural environment (especially biogeography, paleoclimatology, and geomorphology), spatial analysis (especially location analysis, environmental modeling, and geographic information science), and human geography (especially economic, urban, transportation, population, and cultural).

Department: Interdisciplinary Studies

Program: Sustainability

Type: Concentration

Level: Undergraduate

Description: The sustainability concentration provides scientific, socioeconomic, and philosophical background for understanding and mitigating human impact on the natural environment.

Department: Interdisciplinary Studies

Program: Sustainability

Type: Minor

Level: Undergraduate

Description: The sustainability concentration provides scientific, socioeconomic, and philosophical background for understanding and mitigating human impact on the natural environment.

Department: Sociology

Program: Environmental Issues

Type: Concentration

Level: Undergraduate

Description: Global warming. Depletion of the ozone layer. The export of First World waste to Third World nations. The razing of tropical forests for cattle grazing. The loss of biodiversity. The premature extinction of the human species. Each day in newspapers, magazines, radio and television news reports, and in various Internet sources, environmental issues are discussed, debated, and hotly contested. Sociologists play a critical role in understanding and resolving environmental problems. Why sociology? Because the sociological perspective is unique and useful for examining environmental problems. It focuses on how social institutions and cultural practices influence behavior rather than attributing behavior to the characteristics of the individual. Although many people view environmental issues as technical problems that require the expertise of only biologists, chemists, physicists, and engineers to understand, sociologists recognize the essentially social nature of environmental issues. Sociologists analyze the social causes and consequences of technological choices, policy decisions, and

economic production processes affecting resource scarcity and environmental degradation. They probe such questions as: What are environmental problems and who defines them? What happens when citizens hold conflicting values about the environment? What types of people are most likely to be concerned about protecting the environment? What role do population issues play in environmental problems? How do urban environmental problems differ from rural environmental problems? What social groups suffer the most from environmental problems? What is the role of government policies in resolving environmental problems? What role has the environmental movement played in the raising of environmental consciousness? What is the relationship between economic production and environmental problems? Is a sustainable future a possibility?

Department: Sociology

Program: Environmental Issues and Globalization

Type: Minor

Level: Undergraduate

Description: Global warming. Depletion of the ozone layer. The export of First World waste to Third World nations. The razing of tropical forests for cattle grazing. The loss of biodiversity. The premature extinction of the human species. Each day in newspapers, magazines, radio and television news reports, and in various Internet sources, environmental issues are discussed, debated, and hotly contested. Sociologists play a critical role in understanding and resolving environmental problems. Why sociology? Because the sociological perspective is unique and useful for examining environmental problems. It focuses on how social institutions and cultural practices influence behavior rather than attributing behavior to the characteristics of the individual. Although many people view environmental issues as technical problems that require the expertise of only biologists, chemists, physicists, and engineers to understand, sociologists recognize the essentially social nature of environmental issues. Sociologists analyze the social causes and consequences of technological choices, policy decisions, and economic production processes affecting resource scarcity and environmental degradation. They probe such questions as: What are environmental problems and who defines them? What happens when citizens hold conflicting values about the environment? What types of people are most likely to be concerned about protecting the environment? What role do population issues play in environmental problems? How do urban environmental problems differ from rural environmental problems? What social groups suffer the most from environmental problems? What is the role of government policies in resolving environmental problems? What role has the environmental movement played in the raising of environmental consciousness? What is the relationship between economic production and environmental problems? Is a sustainable future a possibility?

Department: Sociology

Program: Environmental Sociology

Type: Concentration

Level: Graduate (MS)

Description: Global warming. Depletion of the ozone layer. The export of First World waste to Third World nations. The razing of tropical forests for cattle grazing. The loss of biodiversity. The premature extinction of the human species. Each day in newspapers, magazines, radio and television news reports, and in various Internet sources, environmental issues are discussed, debated, and hotly contested. Sociologists play a critical role in understanding and resolving environmental problems. Why sociology? Because the sociological perspective is unique and useful for examining environmental problems. It focuses on how social institutions and cultural practices influence behavior rather than attributing behavior to the characteristics of the individual. Although many people view environmental issues as technical problems that require the expertise of only biologists, chemists, physicists, and engineers to understand, sociologists recognize the essentially social nature of environmental issues. Sociologists analyze the social causes and consequences of technological choices, policy decisions, and economic production processes affecting resource scarcity and environmental degradation. They probe such questions as: What are environmental problems and who defines them? What happens when citizens hold conflicting values about the environment? What types of people are most likely to be concerned about protecting the environment? What role do population issues play in environmental problems? How do urban environmental problems differ from rural environmental problems? What social groups suffer the most from environmental problems? What is the role of government policies in resolving environmental problems? What role has the environmental movement played in the raising of environmental consciousness? What is the relationship between economic production and environmental problems? Is a sustainable future a possibility?

Department: Sociology

Program: Environmental Sociology

Type: Concentration

Level: Graduate (PhD)

Description: Global warming. Depletion of the ozone layer. The export of First World waste to Third World nations. The razing of tropical forests for cattle grazing. The loss of biodiversity. The premature extinction of the human species. Each day in newspapers, magazines, radio and television news reports, and in various Internet sources, environmental issues are discussed, debated, and hotly contested. Sociologists play a critical role in understanding and resolving environmental problems. Why sociology? Because the sociological perspective is unique and useful for examining environmental problems. It focuses on how social institutions and cultural practices influence behavior rather than attributing behavior to the characteristics of the individual. Although many people view environmental issues as technical problems that require the expertise of only biologists, chemists, physicists, and engineers to understand, sociologists recognize the essentially social nature of environmental issues. Sociologists analyze the social causes and consequences of technological choices, policy decisions, and economic production processes affecting resource scarcity and environmental degradation. They probe such questions as: What are environmental problems and who defines them? What happens when citizens hold conflicting values about the environment? What types of people are most likely to be concerned about protecting the environment? What role do population issues play in environmental problems? How do urban environmental problems differ from rural environmental problems? What social groups suffer the most from environmental problems? What is the role of government policies in resolving environmental problems? What role has the environmental movement played in the raising of environmental consciousness? What is the relationship between economic production and environmental problems? Is a sustainable future a possibility?

Department: Landscape Architecture Program

Program: Landscape Architecture

Type: Major

Level: Graduate (MLA)

Description: At the University of Tennessee, we believe that the role of landscape architecture is to steward our natural resources and integrate the experience and performance of natural and constructed place into the design of healthy communities and memorable landscapes. As a partnership between the College of Architecture and Design and the College of Agricultural Sciences and Natural Resources, the Landscape Architecture Program at the University of Tennessee, Knoxville, offers a dynamic educational and research environment. Our program positions its students and faculty to address contemporary issues facing landscapes and communities of our region, our state, and those posed to the broader profession of landscape architecture. We accomplish this by committing ourselves to: Promote an ethic of environmental and cultural stewardship, sustainable practice and critical thinking as a means to achieve exemplary research, planning, design and management of developed and naturally occurring landscapes and enhance public health, safety and welfare in Tennessee and beyond. The graduate program in Landscape Architecture is distinguished by a commitment to sustainable landscapes, cities and communities.

Department: School of Architecture

Program: Sustainable Design

Type: Concentration

Level: MArch

Description: The College of Architecture and Design offers a concentration in sustainable design incorporating knowledge from a wide range of disciplines, ranging from technical to philosophical. This concentration explores the interrelation between decisions made when designing the built environment and their short-term and long-term impacts on the ecological environment. Students are asked to take responsibility for the role architecture plays in the consumption of natural resources, underscoring the need for interdisciplinary dialogue and leadership at building, site, city, and regional scales.

Department: Chemistry

Program: Environmental Chemistry

Type: Concentration

Level: Graduate (MS)

Description: Welcome to the Department of Chemistry at the University of Tennessee. We offer a long-standing tradition of excellence in chemical research and education, stretching from 1947, when the department granted the University's first Ph.D. degree, to the present. Our 30 [faculty members](#) have research interests that both span the traditional areas of chemistry and encompass new interdisciplinary fields such as materials chemistry, chemistry of the life sciences, and environmental chemistry.

Department: Chemistry

Program: Environmental Chemistry

Type: Concentration

Level: Graduate (PhD)

Description: Welcome to the Department of Chemistry at the University of Tennessee. We offer a long-standing tradition of excellence in chemical research and education, stretching from 1947, when the department granted the University's first Ph.D. degree, to the present. Our 30 [faculty members](#) have research interests that both span the traditional areas of chemistry and encompass new interdisciplinary fields such as materials chemistry, chemistry of the life sciences, and environmental chemistry.

Department: Civil and Environmental Engineering

Program: Environmental Engineering

Type: Minor

Level: Undergraduate

Description: Consistent with the mission of the university and college, the mission of the Department of Civil and Environmental Engineering is three-fold: (1) to educate the engineers of tomorrow such that they are prepared to practice in a global economy; (2) to contribute to state and national economic growth through effective and visible research; and (3) to serve the public through the efforts of individual faculty and students. The department aims to contribute to the economic and social development of the state, region, and nation by maintaining mutually beneficial partnerships with the public and private sectors. The College of Engineering offers a Minor in Environmental Engineering to undergraduate students.

Department: Civil and Environmental Engineering

Program: Environmental Engineering

Type: Major

Level: Graduate (MS)

Description: Consistent with the mission of the university and college, the mission of the Department of Civil and Environmental Engineering is three-fold: (1) to educate the engineers of tomorrow such that they are prepared to practice in a global economy; (2) to contribute to state and national economic growth through effective and visible research; and (3) to serve the public through the efforts of individual faculty and students. The department aims to contribute to the economic and social development of the state, region, and nation by maintaining mutually beneficial partnerships with the public and private sectors. The College of Engineering offers a Major in Environmental Engineering to masters students.

Department: Civil and Environmental Engineering

Program: Water Resources Engineering

Type: Concentration

Level: Graduate (MS)

Description: Consistent with the mission of the university and college, the mission of the Department of Civil and Environmental Engineering is three-fold: (1) to educate the engineers of tomorrow such that they are prepared to practice in a global economy; (2) to contribute to state and national economic growth through effective and visible research; and (3) to serve the public through the efforts of individual faculty and students. The department aims to contribute to the economic and social development of the state, region, and nation by maintaining mutually beneficial partnerships with the public and private sectors. The College of Engineering offers a Concentration in Water Resources Engineering to masters students.

Department: Civil and Environmental Engineering

Program: Climate Impacts Engineering

Type: Minor

Level: Graduate (PhD)

Description: Consistent with the mission of the university and college, the mission of the Department of Civil and Environmental Engineering is three-fold: (1) to educate the engineers of tomorrow such that they are prepared to practice in a global economy; (2) to contribute to state and national economic growth through effective and visible research; and (3) to serve the public through the efforts of individual faculty and students. The department aims to contribute to the economic and social development of the state, region, and nation by maintaining mutually beneficial partnerships with the public and private sectors. The College of Engineering offers a Climate Impacts Engineering Concentration to doctoral students.

Department: Civil and Environmental Engineering

Program: Environmental Engineering

Type: Minor

Level: Graduate (PhD)

Description: Consistent with the mission of the university and college, the mission of the Department of Civil and Environmental Engineering is three-fold: (1) to educate the engineers of tomorrow such that they are prepared to practice in a global economy; (2) to contribute to state and national economic growth through effective and visible research; and (3) to serve the public through the efforts of individual faculty and students. The department aims to contribute to the economic and social development of the state, region, and nation by maintaining mutually beneficial partnerships with the public and private sectors. The College of Engineering offers an Environmental Engineering Concentration to doctoral students.

Department: Civil and Environmental Engineering

Program: Water Resource Engineering

Type: Minor

Level: Graduate (PhD)

Description: Consistent with the mission of the university and college, the mission of the Department of Civil and Environmental Engineering is three-fold: (1) to educate the engineers of tomorrow such that they are prepared to practice in a global economy; (2) to contribute to state and national economic growth through effective and visible research; and (3) to serve the public through the efforts of individual faculty and students. The department aims to contribute to the economic and social development of the state, region, and nation by maintaining mutually beneficial partnerships with the public and private sectors. The College of Engineering offers a Water Resource Engineering Concentration to doctoral students. The Water Resources concentration within the Environmental Engineering graduate program offers a diverse area of training. The area of Environmental and Water Resources graduate research is a scientifically and technically diverse field, which requires multi- or interdisciplinary training.

Department: Biosystems Engineering and Soil Science

Program: Agricultural Systems Technology

Type: Concentration

Level: Undergraduate

Description: Provide the skills required to manage the sophisticated technological systems that are increasingly essential to modern agricultural production. The program starts with a basic science foundation, adds courses in crop production, pest control, and protection of soil and water resources, then introduces the technologies and control systems available to make production more efficient and environmentally sound. It rounds out the curriculum with analysis and management courses to tie all the information together and to most effectively use it in making and carrying out management decisions. Directed technical electives allow the student to concentrate in a particular area of agricultural production or to develop increased skills with particular technologies or management tools.

Department: Biosystems Engineering and Soil Science

Program: Construction Science Concentration

Type: Concentration

Level: Undergraduate

Description: The concentration is designed to prepare students for entry into the very broad and diverse range of careers related to construction. This field relies on knowledge from engineering, construction, and business; skills related to teamwork and leadership are important as well. The program is designed to provide a strong background in science and math, adds fundamental concepts from engineering, and exposure to relevant technology and techniques such as CAD, land surveying, and GPS/GIS. The business related coursework in the Construction Science track leads to a Minor in Business Administration. This business background is supplemented with courses addressing construction-specific issues in accounting, finance, and law; issues related to green/sustainable construction practices are also covered.

Department: Anthropology

Program: Disasters, Displacement, and Human Rights

Type: Concentration

Level: Undergraduate

Description: This concentration is intended for current Anthropology majors wishing to develop specialized knowledge and research skills in the anthropological study of natural and unnatural disasters and humanitarian crises, forced migration, and human rights investigations, policies, practices, and norms.

Department: College of Education, Health, and Human Sciences

Program: Science Education Grades 6-8

Type: Minor

Level: Undergraduate

Description: Students interested in teaching mathematics (grades 6-8) OR science (grades 6-8) earn a BA or BS in the College of Arts and Sciences in either mathematics OR an area of science (e.g., astronomy, biology, chemistry, geology with an environmental studies concentration, or physics). Students earning a geology major with an environmental studies concentration degree have the required coursework for licensing in both mathematics and science grades 6-8.

Department: Electrical Engineering

Program: Power and Energy Systems

Type: Concentration

Level: Undergraduates

Description: The department offers a concentration for undergraduates who are interested in the fields of power system and power electronics. This concentration pulls together currently-offered courses to provide students with an in-depth focus towards control systems, operations, planning, system components, power electronics, and circuits.

Department: Earth and Planetary Sciences

Program: Environmental Studies

Type: Concentration

Level: Undergraduate

Description: The Environmental Studies concentration provides sound scientific, socioeconomic, and philosophical background for understanding the Earth's environment and prepares the student for careers in science, education, law, business, public policy, and many other fields.

Department: Forestry, Wildlife and Fisheries

Program: Restoration and Conservation Science

Type: Concentration

Level: Undergraduate

Description: The conversation and restoration concentration emphasizes forestry, ecology, soil and waters, and wildlife. The curriculum is designed to prepare graduates who can evaluate terrestrial ecosystems and plan for the conservation of healthy ecosystems, the improvement of degraded ones, and the reclamation or restoration of severely disturbed land. Students may choose from a broad range of technical courses, or may choose to focus their program on a particular aspect of restoring or conserving ecosystems such as wildlife habitat, watersheds, ecosystem construction, or ecology and biodiversity.

Department: Plant Sciences

Program: Horticulture Science and Production

Type: Concentration

Level: Undergraduate

Description: The horticulture science and production concentration is designed to provide students with the knowledge and skills needed for production, management and marketing of horticultural crops. This concentration also prepares students with strong interests in science and/or technology to pursue opportunities in research-related fields, including graduate studies. Employment prospects range from managing nursery and greenhouse businesses, to consulting and education, to marketing fruits and vegetables for healthier lifestyles.

Department: Plant Sciences

Program: Landscape Design

Type: Concentration

Level: Undergraduate

Description: Students study fundamental and advanced landscape design, landscape design graphics, computer-aided landscape design, surveying, art, socio-economic impact of plants, field botany, professional practices, contracting, basic woody plant identification, landscape construction and maintenance methods. The development of comprehensive design projects helps students prepare for careers in landscape design or advanced studies in landscape architecture.

Department: Plant Sciences

Program: Public Horticulture

Type: Concentration

Level: Undergraduate

Description: The public horticulture concentration is intended for students interested in professional careers that promote horticulture and emphasize people, their education and their enjoyment of plants. Technical electives allow students to concentrate in specialties of their interest while encouraging the development of strong communication skills. Students are encouraged to earn a minor degree in a supportive field such as education, communications or journalism, or earn a Non-Profit Management Certificate.

Department: Biosystems Engineering and Soil Science

Program: Soil Science

Type: Concentration

Level: Undergraduate

Description: This concentration is a rigorous, science-based program for students interested in the field of soil science. The curriculum emphasizes soils and their long-term use and productivity, as well as surface and sub-surface water resources. Students will understand natural resource problems and their management, including soil and water conservation issues, land use problems, waste disposal, and reclamation of disturbed lands. Other areas of interest can be addressed through the appropriate selection of technical electives in the program. Students in this program will gain the practical knowledge necessary to compete for career opportunities in government, environmental consulting firms, public health services, environmental research laboratories, and agricultural production, while also gaining the theoretical training necessary for continuing on for advanced degrees in a number of environmentally related fields.

Department: Earth and Planetary Sciences

Program: Geology

Type: Minor

Level: Undergraduate

Description: The Geology concentration is designed to provide students with a detailed understanding of rock forming minerals; the physical, chemical, and biological processes involved in rock formation (igneous, sedimentary, and metamorphic); the biologic and tectonic evolution of the Earth; field recognition of geologic processes; and the composition and evolution of extraterrestrial planets. Students then select a suite of upper-level electives to enhance interests in specific geologic disciplines.

Department: Earth and Planetary Sciences

Program: Geology

Type: Concentration

Level: Undergraduate

Description: The Geology concentration is designed to provide students with a detailed understanding of rock forming minerals; the physical, chemical, and biological processes involved in rock formation (igneous, sedimentary, and metamorphic); the biologic and tectonic evolution of the Earth; field recognition of geologic processes; and the composition and evolution of extraterrestrial planets. Students then select a suite of upper-level electives to enhance interests in specific geologic disciplines.

Department: Earth and Planetary Sciences

Program: Geology

Type: Major

Level: Undergraduate

Description: The Geology concentration is designed to provide students with a detailed understanding of rock forming minerals; the physical, chemical, and biological processes involved in rock formation (igneous, sedimentary, and metamorphic); the biologic and tectonic evolution of the Earth; field recognition of geologic processes; and the composition and evolution of extraterrestrial planets. Students then select a suite of upper-level electives to enhance interests in specific geologic disciplines.

Department: College of Agricultural Sciences and Natural Resources

Program: International Agriculture and Natural Resources

Type: Minor

Level: Undergraduate

Description: The minor in international agriculture and natural resources is intended for students interested in gaining an international perspective to the world's food, fiber, and natural resources systems.

Department: College of Engineering

Program: Materials Science and Engineering

Type: Major

Level: Undergraduate

Description: Materials engineers can be found working in all technological fields, usually as part of a multidisciplinary team. For this reason, materials engineers receive a broad engineering education that includes design, mechanics, chemistry, physics, mathematics and electronics. Modern engineering materials are used in a broad spectrum of products, including automobiles, aircraft and spacecraft, jet and rocket engines, surgical implants, computers, cell phones, optical displays, textiles, and sports equipment. The task is to make these products and production efficient and therefore sustainable.

Department: College of Engineering

Program: Materials Science and Engineering

Type: Major

Level: Graduate

Description: Materials engineers can be found working in all technological fields, usually as part of a multidisciplinary team. For this reason, materials engineers receive a broad engineering education that includes design, mechanics, chemistry, physics, mathematics and electronics. Modern engineering materials are used in a broad spectrum of products, including automobiles, aircraft and spacecraft, jet and rocket engines, surgical implants, computers, cell phones, optical displays, textiles, and sports equipment. The task is to make these products and production efficient and therefore sustainable.

Department: Food Science and Technology

Program: Food Science and Technology

Type: Major

Level: Undergraduate

Description: This major had designed programs of instruction to educate scholars in the food industry and allied industries, regulatory agencies, governmental research laboratories, and academia as well as preparation for professional careers in medicine, pharmacy, and veterinary medicine. In this requires knowledge of food and environmental health.

Department: Food Science and Technology

Program: Food Science and Technology

Type: Major

Level: Graduate (MS)

Description: This major had designed programs of instruction to educate scholars in the food industry and allied industries, regulatory agencies, governmental research laboratories, and academia as well as preparation for professional careers in medicine, pharmacy, and veterinary medicine. In this requires knowledge of food and environmental health.

Department: Public Health

Program: Public Health

Type: Major

Level: Undergraduate

Description: Students learn to improve the health of communities through outreach, support, and research, reducing health disparities and positively influencing health policy and resource development.

Department: Public Health

Program: Public Health

Type: Major

Level: Graduate (MS)

Description: Students learn to improve the health of communities through outreach, support, and research, reducing health disparities and positively influencing health policy and resource development.

Department: Political Science

Program: Public Policy and Administration

Type: Major

Level: Undergraduate

Description: Prepares students to assume socially responsible positions in the public service and the not-for-profit sector through a program of study that integrates the theory and practice of public administration and public policy analysis. The program aspires to produce graduates who are literate in the field of public administration, have the skills to be effective managers of organizational resources, and possess the analytical abilities to be creative problem solvers.

Department: Political Science

Program: Public Policy and Administration

Type: Major

Level: Graduate

Description: Prepares students to assume socially responsible positions in the public service and the not-for-profit sector through a program of study that integrates the theory and practice of public administration and public policy analysis. The program aspires to produce graduates who are literate in the field of public administration, have the skills to be effective managers of organizational resources, and possess the analytical abilities to be creative problem solvers.

Department: Agricultural Sciences and Natural Resources

Program: Agricultural Leadership, Education, and Communications

Type: Major

Level: Undergraduate

Description: This program is designed for students who want to develop their leadership skills and pursue careers in government, youth organizations, business/industry, international environments and leadership positions within the community in agriculture.

Department: Agricultural Sciences and Natural Resources

Program: Agricultural Leadership, Education, and Communications

Type: Major

Level: Graduate

Description: This program is designed for students who want to develop their leadership skills and pursue careers in government, youth organizations, business/industry, international environments and leadership positions within the community in agriculture.

Department: Agricultural and Resource Economics

Program: Food and Agricultural Business

Type: Major

Level: Undergraduate

Description: Students majoring in food and agricultural business are prepared for a wide variety of career opportunities. The focus of their studies is on the functioning of the agri-food sector in the global economic system and the economic principles for decision making by business managers, consumers, policymakers, and others within that sector. Students complete a curriculum designed to provide them with a broad-based education and the specialized skills necessary for a successful career in the agri-food industry or with a related organization or public agency.

Department: Agricultural and Resource Economics

Program: Food and Agricultural Business

Type: Minor

Level: Undergraduate

Description: Students majoring in food and agricultural business are prepared for a wide variety of career opportunities. The focus of their studies is on the functioning of the agri-food sector in the global economic system and the economic principles for decision making by business managers, consumers, policymakers, and others within that sector. Students complete a curriculum designed to provide them with a broad-based education and the specialized skills necessary for a successful career in the agri-food industry or with a related organization or public agency.