Faculty
Fletcher – Director, Kennedy, Messick

Mission
Our Mission is to provide students the knowledge, skills and credentials necessary to work as an environmental health professional or to continue in environmental health graduate studies. Environmental Health is the science of preventing physical, chemical or biological hazards from adversely impacting human health or the ecological balances that sustain our environment. Career opportunities include professional positions with public health departments, environmental protection agencies, environmental consultants and occupational health and safety divisions of industry. The program is fully accredited by the National Environmental Health Science and Protection Accreditation Council (aka EHAC). We provide the option of either an on campus track or a distance learning track for obtaining the degree.

Bachelor of Science with a Major in Environmental Health
Major Code EH02 (On Campus Track)

Semester Hours
General Education Requirements (GER) (p. 45) 46-47* .................................. 35
Biology & Environmental Health Core .................................................. 52

Select from the following**:
BIO 221 Human Anatomy & Physiology II .................................. 5
OR
BIO 301 Human Physiology .................................................. 4
BIO 240 Radiation Biology .................................................. 3
BIO 290 Research & Statistical Methods .................................................. 3
BIO 361 Parasitology .................................................. 4
BIO 402 General Ecology .................................................. 4
BIO 442 Pathogenic Bacteriology .................................................. 5
BIO 481 Aquatic Ecology .................................................. 4
CHEM 201 Analytical Chemistry .................................................. 5
EH 286 Topics in Environmental Health .................................................. 1-5
EH 300 Environmental Geology .................................................. 3
EH 352 International Environmental Health .................................................. 3
EH 373 Solid & Hazardous Waste Management .................................................. 3
EH 375 Disease Vector Control .................................................. 2
EH 450 Internship in Environmental Health .................................................. 1-3
EH 480 Environmental Epidemiology .................................................. 3
EH 495 Advanced Topics in Environmental Health .................................................. 1-5
EH 499 Problems in Environmental Health .................................................. 1-3
INTS 302 World Environmental Issues .................................................. 3
PSC 421 Public Administration .................................................. 3
OR
MSSU approved transfer courses
Total Minimum Hours*** .......................................................... 124

*BIO 101, 105, 110 or 121 satisfies 4 hours of Area D1 of GER
*MATH 140 satisfies 3 hours of Area D1 of GER
**Coursework not listed as an elective will be evaluated on a case-by-case basis as to its application for an environmental health professional or toward graduate education.
***Must include at least 40 hours of Upper Division.

Bachelor of Science with a Major in Environmental Health
Major Code EH04 (Distance Learning Track)

The BS degree in Environmental Health - Distance Learning Track, EH-DLT is designed for transfer students that cannot readily commute to or live on the MSSU campus, but desire to obtain their BS degree in Environmental Health. This track requires that general education, biology, chemistry, math and physics requirements must be met prior to admission to the EH-DLT. Specific science and math courses required by the Environmental Health Accreditation Council, EHAC must be included. These requirements may be met by the student at their local community college or four year university. Upon acceptance into the EH-DLT, the student will complete their Environmental Health coursework over the Internet from MSSU.

Overview of the Coursework Needed for the Environmental Health degree by Distance Learning Track
At the Local Community College or University:
1) General Education Requirements that satisfy MSSU requirements .......................... 43-44 hours
2) Additional courses to complete the EHAC science and math requirements .................. 20-21 hours
At MSSU by Internet:

3) Environmental Health Semester Block Courses ............ 49 hours
4) International Study, GIS and EH Internship Courses ... 11-12 hours
5) Total Minimum Credit Hours for BS degree in EH. ....... 124 hours

The Five Steps Needed to Obtain the Environmental Health degree by Distance Learning Track:

64 Credit hours to be earned prior to starting the EH-DLT at MSSU by Steps 1 & 2

1) General Education Requirements (GER) that meet MSSU Areas A to H (43-44 hr.)
   To be taken at the students’ local community college/university and/or in combination with MSSU Internet coursework. All courses taken must be identified as transferrable as GER courses of MSSU by the MSSU Registrars’ Office. The student should consult their local college or university adviser and registrar/transcript analyst to assure transferability of coursework. All degree candidates must meet all of the MSSU GER requirements prior to acceptance into the EH-DLT.

2) Additional Coursework to attain acceptance into the EH-Distance Learning Track (20-21 hr.)
   The applicant must have a total of 64 credit hours prior to acceptance into the EH-DLT. This includes the 43-44 hours of GER and an additional 20-21 hours of coursework. The EHAC basic science and math requirements must be met within the 64 credit hours (see List A). The science and mathematics requirements of EHAC must be verified as met by a review of the applicants’ transcript by the MSSU Environmental Health Faculty prior to acceptance into the EH-DLT. Pre-planning of the science and math requirements for the degree between the potential applicant, their local college/university adviser and the MSSU EH Faculty is highly encouraged.

   Introductory environmental coursework is encouraged by the local community college/university to assure the student has interest in the environmental field, if it can be fit into the 64 hours along with the GER and EHAC requirements. A minimum GPA, GPA of 2.5 over the 64 hours is required for entry into the EH-DLT.

   60 Credit hours to be earned via the Environmental Health - Distance Learning Track at MSSU by Steps 3 & 4

3) Environmental Health Semester Blocks (49 hr.) by MSSU
   The EH-DLT requires successful completion of four Environmental Health Semester Blocks that are enrolled in after acceptance to the EH-DLT. Students accepted into the EH-DLT may enroll into any Semester Block that is currently available. Each EH Semester Block is a unit of 4 to 5 individual EH courses that are all enrolled in and taken simultaneously over a single semester via the Internet from MSSU. Semester Block grades are given for each individual course. Students must enroll for the entire block of courses.

   EH Semester Block 1 (Fall, Even) .............. 12 cr. hrs. total
   EH 370 Environmental Health ....................... 3
   EH 377 Food Safety .................................. 3
   EH 378 Occupational Health & Safety ............... 3
   EH 380 Epidemiology ................................ 3

   EH Semester Block 2 (Spring, Odd) ................ 12 cr. hrs. total
   EH 371 Environmental Toxicology (WI)* ............ 3
   EH 373 Solid & Hazardous Waste Mgmt .............. 3
   EH 375 Disease Vector Control ...................... 2
   EH 376 Water Quality Management .................. 3
   EH 382 Epidemiology Statistics .................... 1

   EH Semester Block 3 (Fall, Odd) .................... 13 cr. hrs. total
   EH 311 Soil Morphology ............................. 3
   EH 312 Environmental Biology (WI)* ............... 4
   EH 372 Environmental Regulations .................. 3
   EH 374 Air Quality Management ..................... 3

   EH Semester Block 4 (Spring, Even) ................ 12 cr. hrs total
   EH 410 Hazardous Incident Management ............ 3
   EH 480 Environmental Epidemiology ................ 3
   EH 481 Risk Management (WI)* ..................... 3
   EH 497 Health and Safety Investigation ............ 3

   Students must be self-motivated and self-disciplined to be successful in Internet studies. It is imperative that the student remain diligent in keeping up with all readings, assignments and examinations to pass the courses. The student is required to obtain an MSSU approved proctor for examinations. Students may be allowed one additional semester to finish incomplete work in any course if given permission by the instructor and they file for the incomplete prior to the end of the semester. However, incomplete work not completed by the end of the following semester converts to a grade of “F”. Courses that receive grades of “F” may be unavailable in a timely manner to repeat as individual courses are not readily available by Internet outside the semester blocks.

   *Wi indicates a Writing Intensive course.

4) Three Additional Required Courses by MSSU (11hr. or 12 hr.)
   International Cultural Studies (Area I) course (3 hr.) chosen from any MSSU Area I course that is given over the Internet during any semester. MSSU Area I courses are offered by Internet most semesters.

   EH 304 Geographic Information Systems, GIS (3 hr.)
   This course meets the degree computer literacy requirement. The course may be taken over the Internet during any semester it is offered at MSSU.

   EH 450 Internship in Environmental Health (either 5 hr. or 6 hr.) Practical field experience (a minimum of 200 or 240 work hours) that is obtained by the student at any work location of their choice (e.g. government, industry, consulting) that is also approved by the MSSU EH Faculty. EH 450 may be taken during any semester at MSSU, but requires pre-planning in conjunction with the Environmental Health Faculty prior to enrollment. The student must identify potential work locations to the EH Faculty and create a written proposal that is acceptable to the EH Faculty, the Department Head and the Dean of Arts and Sciences at least one semester in advance of enrollment. MSSU EH faculty will help the EH student to identify acceptable work locations. This course may be taken any semester after acceptance to the EH-DLT.

   Total Minimum Credit Hours Required for the Environmental Health degree by Distance Learning Track (124 hr.)
   At least 60 semester hours of the 124 minimum hours must be from a 4 year university. Also, all degree candidates are required to participate in University Assessment of Outcomes activities (Senior Assessment testing) for MSSU prior to graduation.

List A. Environmental Health Accreditation Council (EHAC) Criteria for Environmental Health Science and Protection Baccalaureate Curricula*
1. **Basic Sciences:** (at least 24 semester hours or 40 quarter hours)
   The following basic college level courses must be completed:
   - **Biological Sciences with laboratories** - at least 3 semester hours, 5 quarter hours.
   - **Microbiology** with laboratory (may be environmental health microbiology) – at least 3 semester hours, 5 quarter hours (This course may be combined with the biological sciences so long as the combined hours is at least 6 semester hour or 10 quarter hours)
   - **General Chemistry** with laboratories – at least a total of 6 semester hours or 10 quarter hours,
   - **Organic Chemistry** with laboratories (may be environmental organic chemistry) – at least a total of 3 semester hours or 5 quarter hours.
   - **Physics** – (may be environmental physics) at least 3 semester hours or 5 quarter hours.
   - **Basic Science** – (at least 6 semester hours or 10 quarter hours)

2. **Communication:** (at least 21 hr.)
   Graduates need good communication skills. These skills include cultural competency and the ability to speak effectively and persuasively with others individually, in small groups and in making formal presentations respectfully. Furthermore, writing skills need to be sufficient to be able to communicate clearly to a variety of audiences.

   To meet this requirement, students must have acquired competence in the following areas:
   - **Information technology/Computer skills** met by EH 304 which is incorporated into the EH degree (3 hr.)
   - **Public speaking** met by Oral Communications/Public Speaking transferred in as GER (3 semester hours or 5 quarter hours)
   - **Technical writing** met by English 1 & English 2 (6 semester hours or 10 quarter hours) transferred in as GER, plus 3 EH Intensive Courses taken from MSSU: EH 312, EH 371, & EH 481, these EH hours are incorporated into the degree (9 hr.)

3. **Mathematics:** (at least 3 hours or 5 quarter hours)
   - **College Algebra** or higher level (3 hr.), calculus is recommended but not required

*This list is subject to periodic change by EHAC

**MSSU Environmental Health Faculty Contacts for the Environmental Health degree:**
Dr. Mike Fletcher, Program Director
Phone: 417.625.9765
Email: fletcher-m@mssu.edu

Mr. Michael Kennedy
Phone: 417.625.9857
Email: kennedy-m@mssu.edu

**For environmental health program accreditation information contact:**
The National Environmental Health Science & Protection Accreditation Council (EHAC)
8620 Roosevelt Way NE, Suite A Seattle, WA 98115
Phone: 206.522.5272
Fax: 206.985.9805
ehacinfo@aehap.org

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**Course Descriptions**

**EH 0298** *(Demand)*
**Topics in Environmental Health**
1-5 hrs. cr.
Designed to give instruction in some discipline of environment health not covered in other courses. Prerequisites to be determined by the department.

**EH 0300** *(S-Odd)*
**Environmental Geology**
3 hrs. cr.
An introduction to our relationship to the earth’s environment. The limitations of natural resources and discussion of consequences of the exploitation of natural resources are considered along with the demands of humanity upon the environment. Overview of natural environmental hazards, including volcanoes, earthquakes, subsidence landslides, floods and asteroid impacts. Prerequisite: Five credit hours in physical science, physics and/or chemistry. Cross-listed as GEOL 300.

**EH 0304** *(F)*
**Geographic Information Systems**
3 hrs. cr.
Explores the expanding use of Geographic Information Systems (GIS) in ecology, environmental health and related fields. Satisfies the computer literacy requirement for environmental health majors. Prerequisites: BIO 101 or 105 or 110 or 121. Cross-listed as BIO 304 and GEOG 304.

**EH 0311** *(F-Odd)*
**Soil Morphology and Sewage Systems**
3 hrs. cr.
Concepts, methods and practices useful to the environmental health professional for soil morphology and site assessment leading to the proper design of residential sewage treatment systems. Two hours of lecture and two hours of lab per week. Prerequisites: CHEM 151 and BIO 101 or 105 or 110 or 121.

**EH 0312** *(Su)*
**Environmental Biology** *(Writing Intensive)*
4 hrs. cr.
A study of how environmental factors interact with and impact living organisms and ecosystems. Emphasis is on global human ecology, environmental problems, sound environmental management practices and the sustainable use of natural resources. How environmental problems may be solved by the application of sound environmental science in conjunction with the choices allowed by human values. Three hours of lecture and two hours of lab per week. Prerequisites: CHEM 151 and BIO 101 or 105 or 110 or 121. Cross-listed as BIO 312.

**EH 0352** *(Demand)*
**International Environmental Health**
3 hrs. cr.
An in-depth study of environmental health issues in countries other than the United States of America. The approach of this course is to select a country to be studied and review the pertinent environmental health issues. Environmental health issues common to many countries, as well as issues that are unique to the selected country will be studied. The environmental health issues of the selected country will be studied in class and followed up with an extended field trip usually lasting about two weeks. Prerequisites: EH 312. Priority given to EH majors.

**EH 0370** *(S, Su)*
**Environmental Health**
3 hrs. cr.
A survey of contemporary environmental health problems and protection measures, including public health disease or injury prevention and environmental hazard mitigation. Topics include water quality, air quality, food protection, disease vector control, waste management, toxicology, radiation,
Occupational Health and Safety
An introduction to the concepts, principles and methods generally employed by industrial health and safety officers in the performance of their duties. Three hours of lecture per week. Prerequisites: and BIO 101 or BIO 105 or BIO 110 or BIO 121 and CHEM 151.

EH 0380 (F, S)  3 hrs. cr.

Epidemiology
Introduction to the concepts, principles and methods generally useful in the surveillance and investigation of communicable disease outbreaks. Three hours of lecture per week. Prerequisites: BIO 101 or 105 or 110 or 121. Cross-listed as BIO 380 and HS 380.

EH 0382 (S-Odd)  1 hr. cr

Epidemiological Statistics
The continuation of EH/BIO/HS 380 Epidemiology by introducing statistical methods that are useful in the analysis of disease outbreak or injury data. Two hours of lab per week. Prerequisite: EH/BIO/HS 380.

EH 0410 (F-Even)  3 hrs. cr.

Hazardous Incident Management
Knowledge will be gained regarding the identification of, preparation for and response to environmental health emergency situations. The types of emergency situations discussed will include food and water, sanitation, solid and hazardous waste, chemical incidents, radiological emergencies, bioterrorism and environmental disasters. Environmental health emergency management systems will also be covered. Three hours of lecture per week. Prerequisites: BIO 101 or 105 or 110 or 121 and CHEM 151. EH 370 is recommended.

EH 0450 (F, S or Su) 1-8 hrs. cr.

Internship in Environmental Health
Experience in actual observation and work at facilities, agencies and/or industry where environmental health is a viable concern. Periodic meetings between the faculty coordinator, the cooperating institution and the student will be required. The student should not be employed in any job that will prevent full-time, maximum concentration on the academic internship. Forty work hours minimum per credit hour. Prerequisite: Junior or senior standing as an EH major.

EH 0480 (S-Even)  3 hrs. cr.

Environmental Epidemiology
The study of the distribution and determinants of health-related states or events in specified populations that are influenced by physical, chemical, biological, ecological and psychosocial factors in the environment. Both communicable and non-communicable diseases associated with environmental factors will be studied. Three hours of lecture per week. Prerequisites: BIO 101 or 105 or 110 or 121 and CHEM 151. EH 380 and EH 382 are recommended.

EH 0481 (F-Odd)  3 hrs. cr.

Environmental Risk Management (Writing Intensive)
The concepts, principles, methods and techniques useful to the environmental health professional in risk assessment, risk management and risk communications for the protection of the environment, the public safety and the public health. Three hours of class per week. Prerequisite: Junior or senior standing as an EH major.

EH 497 (Demand)  3 hrs. cr.

Health & Safety Investigation
The investigation of the workplace or built environment to determine the
health or safety hazards that may exist. The environmental conditions that may adversely impact the health and safety of workers or occupants will be determined by survey, sample and test methods. Prerequisite: EH 370 or EH 373 or EH 374 or EH 378.

**Faculty** Hou – Head, Cramer, Dubuis, Kilpatrick, Liso, Parker, Talavera

**Mission**
The department aims to develop the language proficiency and cultural competency of students in foreign languages through quality teaching and learning. By delivering instruction in foreign languages, the department educates students to gain an insight into their own culture and language and to enhance their vision of the world. The department enables students to acquire communication and critical thinking skills in foreign languages and to become life-long learners who engage in the multiple ways of viewing and interacting with the world at home and abroad.

The Department of Foreign Languages offers the Bachelor of Arts degree with majors in French, German and Spanish. Minors in Chinese, French, German, Japanese, Russian and Spanish are available. A Certificate in Medical Interpretation (Spanish/English) is another option available to prospective students. The Department also offers the Bachelor of Science in Education degree in French, German and Spanish, with the chosen language as a single teaching field or as one of two teaching fields.

For the Bachelor of Arts and for the Bachelor of Sciences in Education degrees, there is a study abroad experience requirement. Opportunities for such programs exist through University-sponsored programs, through the University’s membership in the International Student Exchange Program (ISEP) and through internships. The faculty provide close guidance to students in planning such experiences. Through the Institute of International Studies, students may be eligible for grants and/or scholarships to assist in financing these experiences.

Study abroad programs are open to all students, regardless of major and are also available in Chinese, Japanese and Russian.

All language majors must demonstrate oral and written proficiency.

Students with previous foreign language experience should consult the Department of Foreign Languages for current policies on placement in the proper course for the respective language. Students with no prior experience in a foreign language should enroll in a 101 course.

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**Bachelor of Arts**
**French**

Major Code FL00

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<th>Semester Hours</th>
<th>General Education Requirements (p. 45) 46-47* .......... 43-44</th>
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<tr>
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<td>Computer Literacy Requirement (select one) ........................ 3</td>
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<tr>
<td></td>
<td>CIS 105 Introduction to Microcomputer Use</td>
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<td>MM 237 Using Information Systems</td>
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<td>French Requirements                                         33</td>
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<td>FREN 101, 102, 203, 204                                     12</td>
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<td></td>
<td>Language courses (300 or above)**                           6</td>
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<td>Culture courses (300 or above)**                            6</td>
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<td>Literature courses (300 or above)**                        6</td>
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<td>Additional Requirements                                     11</td>
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<td></td>
<td>1. Proficiency examinations</td>
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<td>2. Residency abroad</td>
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(See explanations below)

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<th>Electives</th>
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<th>Total</th>
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*Three hours of foreign language fulfill Area I of GER.

**FREN 101, 102, 203, 204 fulfill the 12-hour foreign language requirement for the BA degree.

***These courses in French must be at the 300-400 level and must be chosen in consultation with the student's adviser.

****Additional requirements for the French major are:

1. Successful completion of proficiency tests. Guidelines are available in the Department of Foreign Languages. These guidelines indicate the general areas covered by the proficiency tests and the dates on which tests are scheduled for the academic year. Students will normally take the tests for diagnostic purposes during the second semester of the junior year and may repeat the tests during their senior year.

2. A period of at least one month of residency in a French-speaking country or in a French immersion program. Students may participate in a university-sponsored short-term program, an ISEP semester or year abroad, a program of another accredited college, an internship or another approved activity. All language students are urged to work closely with the Institute of International Studies to explore available programs and financial resources. Students with special circumstances may petition to have an alternative immersion experience approved for this requirement. Credit earned may be applied to the major or may count as general electives.

****Must include 40 upper-division hours.

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**Bachelor of Science in Education**
**French**

Grades K-12 Certification

Single Teaching Field

Major Code ES13

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<th>Semester Hours</th>
<th>General Education Requirements (p. 45) 46-47* .......... 43-44</th>
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<td>EDUC 301 Technology in Education ............................. 3</td>
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<td>FREN 101, 102, 203, 204                                     12</td>
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Students will select at least 24 hours at the 300-400 level according to the following distribution: