



## Major Research & Teaching Resources In Sutton Science Center

- ▶ Special research laboratories for student senior research projects
- ▶ Histology Laboratory for analysis of animal or plant tissues
- ▶ 150-acre Maryville College wooded natural ecology laboratory
- ▶ Multichannel and computer-interfaced physiographs
- ▶ DNA and protein electrophoresis equipment
- ▶ Video and fluorescence microscopes
- ▶ Zeiss photomicroscope
- ▶ PCR DNA amplification instruments
- ▶ Fourier transform and dispersive infrared spectrophotometers
- ▶ Ultraviolet-visible and fluorescence spectrophotometers
- ▶ Laser-Raman spectrophotometer
- ▶ Proton nuclear magnetic resonance spectrometers
- ▶ Atomic absorption spectrometers and flame photometers
- ▶ High performance liquid and gas chromatographs with multiple detectors
- ▶ Computational chemistry hardware & software for spectral analysis, molecular modeling, spectral prediction and simulations
- ▶ Computer-interfaced physics experimental workstations
- ▶ Detailed anatomical models for human physiology instruction
- ▶ Subzero (-80° C) freezers
- ▶ Centrifuges for low and high speed separation
- ▶ Computer facilities in chemistry and biology for teaching and student research with discipline specific software
- ▶ Wireless network in labs in chemistry and biology with laptop computers and USB-analog/digital sensor interfaces with potential for data collection in all teaching labs in chemistry and biology
- ▶ GC-Mass Spectrometer
- ▶ Environmental chamber for controlled experiments
- ▶ Digital balances down to sub-microgram range
- ▶ Computer-interfaced plate readers for rapid colorimetric analysis
- ▶ Smart classrooms for multimedia instruction
- ▶ Questar 8-inch reflector telescope for astronomy classes
- ▶ Field vehicle



## EXAMPLE OF COURSES TAKEN: **BIOLOGY**

### FIRST YEAR

#### FALL

Biology I | Chemistry I  
Composition I | FRS Seminar (Individual)

#### J-TERM

FRS Seminar (Environment)

#### SPRING

Biology II | Chemistry II | Composition II  
FRS Seminar (American Community)  
Elective

### SOPHOMORE YEAR

#### FALL

Genetics | Organic Chemistry I  
Statistics | Biblical Studies

#### J-TERM

Experiential Course

#### SPRING

Ecology/Evolution | Organic Chemistry II  
Elective | Literature | Research Seminar

### JUNIOR YEAR

#### FALL

Vertebrate Zoo. | Cell Biology  
Physics I | Foreign Language I

#### J-TERM

#### SPRING

Botany Course | Social Science  
Physics II | Foreign Language II

### SENIOR YEAR

#### FALL

Animal Physiology | Senior Seminar  
Senior Thesis I | Western Civilization

#### J-TERM

Ethics

#### SPRING

Biology Course | Fine Arts  
Senior Thesis II | World Cultures

## BIOLOGY CURRICULUM *(minimum requirements)*

### ENTRY LEVEL *(all required)*

Introductory Biology (organismal) | Introductory Biology (cellular)

### BASIC COURSES *(all required)*

Genetics | Ecology/Evolution | Research Methods | Chemistry I | Chemistry II

### ACADEMIC CLUSTERS *(pick 1 from each cluster)*

*Animal Organismal:* Comp. Vertebrate Zoology OR Comp. Invertebrate Zoology

*Plant Organismal:* Plant Diversity OR Flowering Plants

*Organ/System Biology:* Animal Physiology OR Developmental Biology

*Cellular Biology:* Cell and Tissue Biology OR Microbiology

### EMPHASIS AREA *(minimum 1)*

Vert. Field Zoo. | Molecular Bio. | Plant Ecology | Microbial Ecology | Special Topics

### RESEARCH

Senior Thesis 1 | Senior Thesis 2 | Internship/Practicum

## CHEMISTRY CURRICULUM *(minimum requirements)*

### ENTRY LEVEL *(all required)*

Chemistry I | Chemistry II | Calculus I

### BASIC COURSES *(all required)*

Organic Chemistry I | Organic Chemistry II | Physics I | Physics II | Calculus II

### ADVANCED COURSES *(all required)*

Analytical Chemistry | Physical Chemistry I | Physical Chemistry II

### EMPHASIS AREA *(minimum 1)*

Biochemistry | Instrumental Methods | Physical Chemistry Lab | Special Topics

### RESEARCH

Senior Thesis 1 | Senior Thesis 2 | Research Seminar | Internship/Practicum