

COLLEGE OF SCIENCE AND  
TECHNOLOGY

VIEWBOOK 2010

UNIVERSITY OF  
CENTRAL MISSOURI



**Join our DYNAMIC college and get started on an EXCITING FUTURE!**

Science and technology touch every aspect of our lives; from the battery in your iPod to the oatmeal you had for breakfast. These fields produce the innovations that become smart cars and biofuels. They determine how our food is produced and how we travel. The College of Science and Technology at UCM is preparing you today for the world you will inhabit tomorrow.

Our academic programs are challenging, timely and structured to recognize the needs of the next generation of students. They emphasize independent student scholarship and the development of creative and innovative thinking. The faculty members represent the instructional and intellectual core of sciences and technology on our campus.

Recognizing this, we invite the brightest and most motivated students in the state of Missouri, the Midwest and the nation to join us as we learn, discover and explore the frontiers of our areas.

## TODAY'S CLASSROOMS MEET TOMORROW'S JOBS

The fields of science and technology include some of the fastest growing career fields in the world. The knowledge and hands-on experience you get from UCM make you attractive to many businesses.

UCM's College of Science and Technology has academic programs that prepare you for a rewarding career in many ways. Hands-on classroom projects and independent internships give you a sense of the career path you've chosen while you're still in the learning environment of college. Faculty members are knowledgeable in their subjects because they have had successful careers outside the classroom, and are eager to help you do the same.

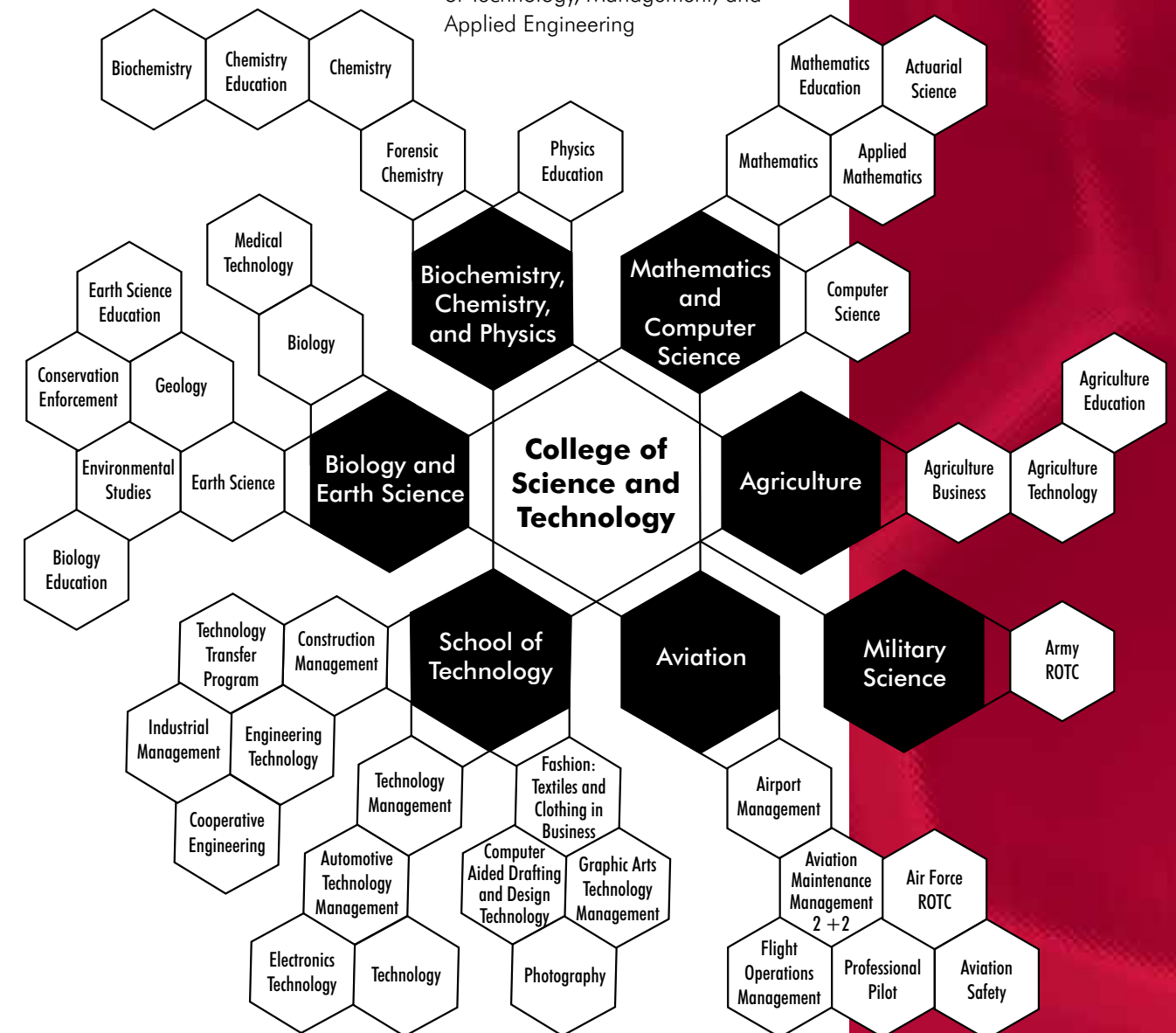
## A STANDARD OF EXCELLENCE

Accreditation means the department and its programs have succeeded in a rigorous educational evaluation. Our degree programs are accredited by the leading organizations in science and technology.

- Chemistry - American Chemical Society
- Construction Management - American Council for Construction Education
- Professional Pilot, Flight Operations and Airport Management - Aviation Accreditation Board International
- Automotive Technology Management, Computer-Aided Drafting and Design Technology, Construction Management, Electronics Technology, Graphic Arts Technology Management, M.S. Industrial Management and M.S. Technology - The Association of Technology, Management, and Applied Engineering

# UCM

**Find more information about programs offered by the College of Science and Technology at [www.ucmo.edu/cst/programs](http://www.ucmo.edu/cst/programs)**





**Our graduates are HIGHLY sought after by employers. For the 16th consecutive year, our EMPLOYMENT RATE for graduates EXCEEDS the national average.**



### ABOVE-AVERAGE EDUCATION

Central Missouri is affordable, friendly and the perfect size. But it's no run-of-the-mill university. Graduates of UCM enjoy one of the highest employment rates in the state because of our dedicated faculty members, attentive staff and atmosphere of collaboration. From financial aid to study abroad, UCM wants you to make the most of your college opportunities.

### SATISFIED STUDENTS

We think UCM is great, but so do our students! In a recent campus-wide survey\*, UCM students reported their overall expectations are satisfied at a level higher than the national average for:

- |                         |                                      |
|-------------------------|--------------------------------------|
| Knowledgeable faculty   | Excellent instruction                |
| Valuable course content | Easy accessibility to faculty        |
| Library resources       | Academic Advising                    |
| Campus safety           | Good campus climate                  |
| Focus on students       | Appropriate student support services |

\*Source: 2009 Report by Office of Institutional Research analyzing Noel-Levitz Student Satisfaction Survey comparing four-year universities.

### EYES FIXED ON THE FUTURE

Tradition is important at Central Missouri, but we never lose focus on our future. This forward-thinking philosophy is what shapes our curriculum so that we educate you today for the job you will have tomorrow.

### HISTORIC CATTLE HERD

The Moss Creek Herd is the oldest closed purebred Aberdeen-Angus herd in the nation. Dating back to 1876, the cattle are in direct lineage to one of the first four Angus bulls imported to the U.S. by a Scottish noble, George Grant. Central Missouri alum Stephen Rea donated the herd to UCM. Working with the herd gives you a glimpse of historic genetics compared to modern genetic modeling methods.

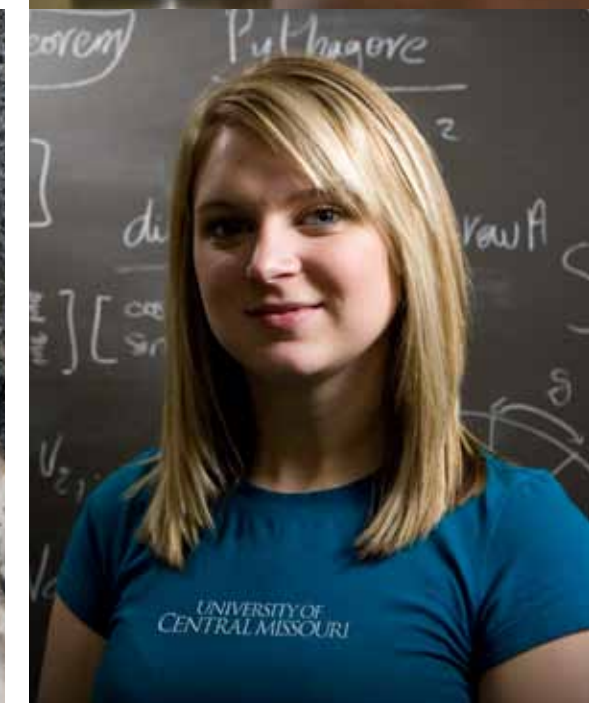
### ENERGY PARK

The UCM Energy Park is the latest development in the university's wide-ranging vision for environmental sustainability. The Energy Park is the hub of undergraduate research in renewable energy, alternative fuels, bioscience and biotechnology.

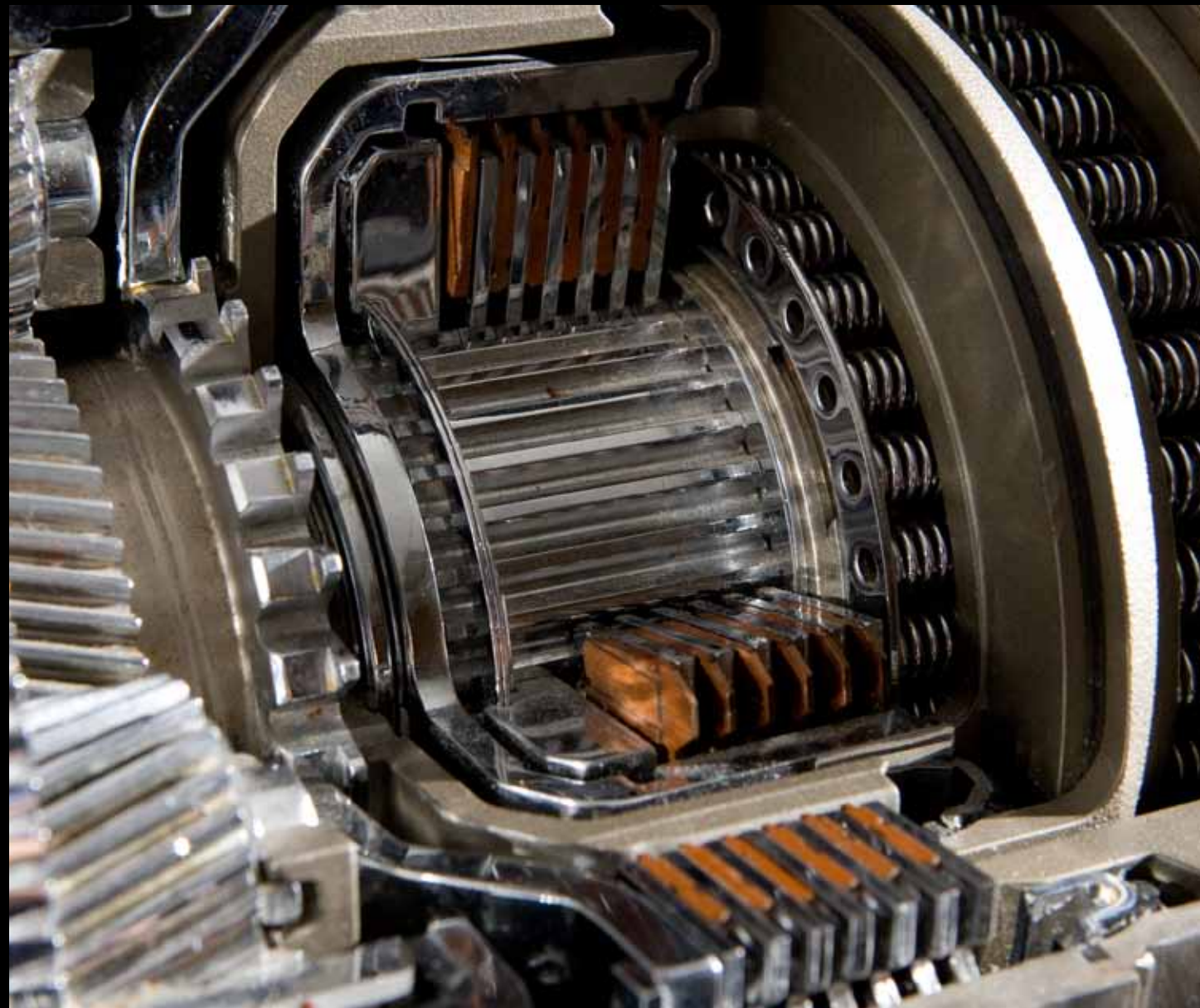
### ENVIRONMENTAL SUSTAINABILITY

UCM's Center for Alternative Fuels and Environmental Systems is dedicated to the research and development of alternative energy. The center works to develop energy from a variety of sources, including wind, solar, geothermal, switch grass and recyclable materials. It stresses undergraduate research, allowing you to work on a variety of energy-related projects and preparing you for work in the sciences by providing valuable hands-on experience while you work as a consultant for Missouri businesses.

Faculty in the Department of Agriculture, the Department of Biochemistry, Chemistry and Physics, and the School of Technology engage in a variety of research and curriculum development efforts related to environmental issues and sustainability. These include work in construction materials, building energy conservation, environmentally-friendly building design, and engineering for manufacturing efficiency. They also explore alternative energy sources such as biodiesel and hydrogen fuel cells, and advanced electric vehicles, batteries, and related technologies.



# THE SCIENCE OF TECHNOLOGY



## UNDERGRADUATE PROGRAMS

- Automotive Technology Management
- Computer-Aided Drafting and Design Technology
- Construction Management
- Electronics Technology
- Engineering Technology
- Fashion: Textiles and Clothing in Business
- Graphic Arts Technology Management
- Technology (also offered as a degree completion program)
- Photography

## GRADUATE PROGRAMS

- Technology
- Technology Management



## SCHOOL OF TECHNOLOGY

The School of Technology at UCM offers programs that unite industry input and academic excellence to produce qualified graduates ready to meet the ever-growing technical and management demands of today's economy. The school's educational programs blend classroom studies, hands-on learning, research and relevant work experience through internships and co-curricular activities. As a result, students are well rounded in education, collaboration and career preparation.

## 21<sup>ST</sup> CENTURY TECHNOLOGY

UCM's School of Technology has state-of-the-art labs offering the most current software applications and equipment for industrial-oriented instruction. Programs are designed to provide you with the appropriate tools to prepare for 21<sup>st</sup> century technical and management careers. Facilities include a computer-integrated manufacturing (CIM) cell, engineering labs, advanced computer labs, materials science labs, scanners and diagnostic equipment.



# THE TECHNOLOGY OF SCIENCE



## DEPARTMENT OF BIOCHEMISTRY, CHEMISTRY AND PHYSICS UNDERGRADUATE PROGRAMS

- Biochemistry
- Chemistry
- Biomedical/Molecular Studies
- Chemistry Education
- Forensic Chemistry
- Physics Education

## DEPARTMENT OF BIOLOGY AND EARTH SCIENCE UNDERGRADUATE PROGRAMS

- Biology
- Biology Education
- Conservation Enforcement Studies
- Earth Science
- Ecological Studies
- Forensic Science
- Geology
- Medical Technology

## GRADUATE PROGRAMS

- Biology
- Environmental Science

### UNDER THE MICROSCOPE

Science can take you deep into the inner workings of a cell from the human body or far into the galaxies of our universe. It teaches us what we're made of, why we move and how living things are interconnected. If you're excited to study, research and discover more about living organisms and the world around you, major in one of the programs in the Department of Biochemistry, Chemistry and Physics or the Department of Biology and Earth Science.

### WHAT TO EXPECT

UCM provides active and up-to-date programs in the life and physical sciences. In these programs, you'll benefit from the latest technology and instrumentation in engaging courses designed by experienced faculty members to ensure the learning environment is continually growing and improving. As a student, you'll not only gain a strong knowledge base of scientific principles and methodologies, but you'll integrate in-depth study with your chosen degree specialization to determine your academic emphasis.

### PRE-PROFESSIONAL PROGRAMS

UCM takes an active role in preparing students majoring in biology and chemistry for admission to professional schools in the following areas:

- Medicine
- Physical Therapy
- Chiropractic Medicine
- Dentistry
- Optometry
- Physician's Assistant
- Veterinary Medicine
- Pharmacy
- Molecular Biology/Molecular Technology

If you are pursuing a pre-professional degree program, you will be assigned to a faculty adviser in your area of interest. Advisers will help you plan and prepare a program of study; prepare for appropriate post-baccalaureate admissions tests (MCAT, DAT, GRE, etc.); obtain student handbooks that summarize the entire admissions process to a professional school, such as The Pre-Med Handbook; find and join student clubs in pre-professional fields; coordinate meetings between student organizations and professional school admissions officers; and get hands-on student participation in profession-related work outside the classroom (e.g., volunteering or working in a health care facility).

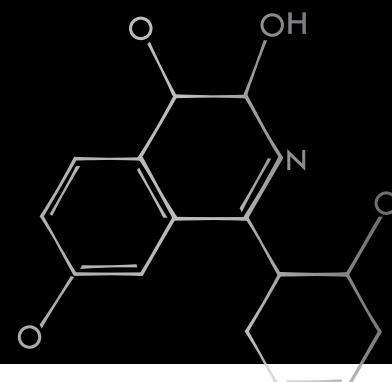
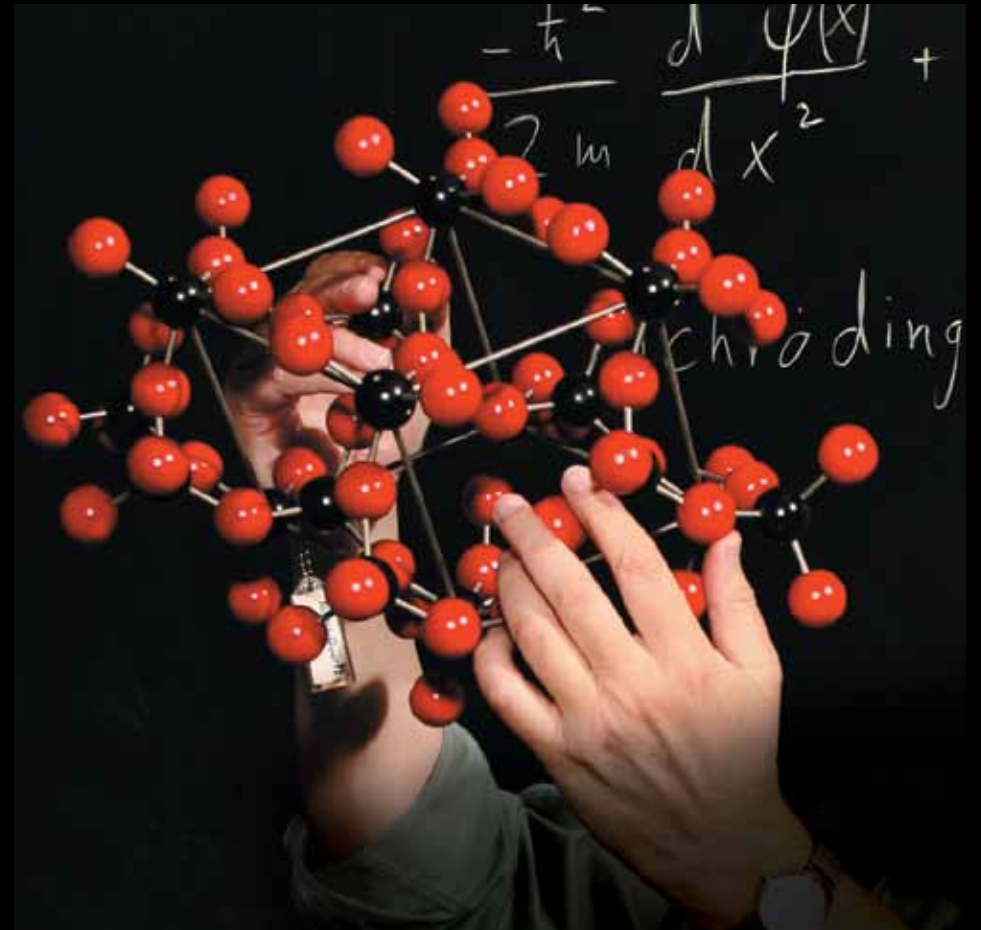
In addition, the departments offer courses and research opportunities in many contemporary branches of the sciences, such as molecular biology, physiology, microbiology, cell biology and biochemistry. These courses and research experiences provide you with the necessary investigative and critical thinking skills to prepare you for advanced degree programs, or as entry-level scientists in the pharmaceutical and biotechnology industries.



### LAB WORK

The University of Central Missouri's science departments and laboratories are located in the W. C. Morris Science Building. The facilities include areas for general instructional use, audio/visual equipment, a library study area and laboratories in various areas of specialization. There are well-equipped computer laboratories in chemistry and physics, as well as electronic classrooms for each discipline.

In addition to the extensive laboratory facilities on campus, UCM owns several off-campus research labs. Pertle Springs, a 300-acre park is just a mile away from campus and is a unique natural laboratory for research and field experiences. The university also maintains a small astronomical observatory at Pertle Springs, featuring a computer-controlled telescope with imaging capabilities and specialized auxiliary equipment. Prussing Research and Mitchell Street Farms are large, working farms used for agricultural research, forage production and hands-on experience for agronomy, horticulture, animal science and soils classes. UCM's newest off-campus lab is the Center for Alternative Fuels and Environmental Systems, which partners with Missouri businesses to find renewable energy sources that produce more efficient businesses practices.





## BOEING 737NG ADVANCED AVIATION TRAINING DEVICE

Training for your future career doesn't get more hands-on than a room-sized flight simulator. The Department of Aviation's Advanced Aviation Training Device, a Boeing 737 cockpit, is the cutting edge in college flight training. The AATD simulates the experience pilots have when they step into the cockpit of a 737-800 airline cabin class aircraft, complete with all the controls, instruments and complex jet systems found on a multi-engine airline aircraft. The only exception is most of today's jetliners don't have technology systems as advanced as those students will find on this training device.

# REACHING NEW HEIGHTS

## UNDERGRADUATE PROGRAMS

Airforce ROTC  
Airport Management  
Aviation Maintenance Management 2+2  
Flight Operations Management  
Professional Pilot

## GRADUATE PROGRAM

Aviation Safety Management

## DEPARTMENT OF AVIATION

Central Missouri is the only publicly funded university in Missouri to offer a bachelor's and master's degree in aviation. More than 250 students currently major in aviation at the undergraduate and graduate level, and more than 40 students are pursuing a master's degree in aviation safety, making it one of the largest graduate programs at UCM.

If you're interested in joining the U.S. Air Force, you have the opportunity to join UCM's Air Force ROTC. The program is offered as a cooperative endeavor between UCM, the University of Missouri and the Air Force ROTC. You will attend UCM for undergraduate coursework while simultaneously meeting commissioning requirements in the AFROTC program at MU, and be required to commute to Columbia once a week to take the required aerospace studies courses and leadership laboratory.



## TAKING FLIGHT

UCM's nationally acclaimed aviation program has prospered since its beginning four decades ago. UCM's Department of Aviation maintains its own training fleet, including Cessna single-engine planes, Beech multi-engine planes, gliders and balloons, and flight simulators. Max B. Swisher Skyhaven Airport—the only university-owned airport in the state of Missouri—is a prominent center for cutting-edge aviation education. Skyhaven Airport has adopted a 20-year master plan to develop the airport to better meet academic and public aviation needs, which includes improving the airport infrastructure, expanding the runway to accommodate small jet aircraft, relocating and building a new terminal, and installing new hangars.

# WHAT A BEAUTIFUL MIND



## INTERESTING FACT

Steven Boone, professor of chemistry, and Curtis Cooper, professor of computer science, built a campus computer network and discovered, at that time, the largest prime number in the world.

## UNDERGRADUATE PROGRAMS

Actuarial Science  
Computer Science  
Mathematics  
Mathematics Education

## GRADUATE PROGRAMS

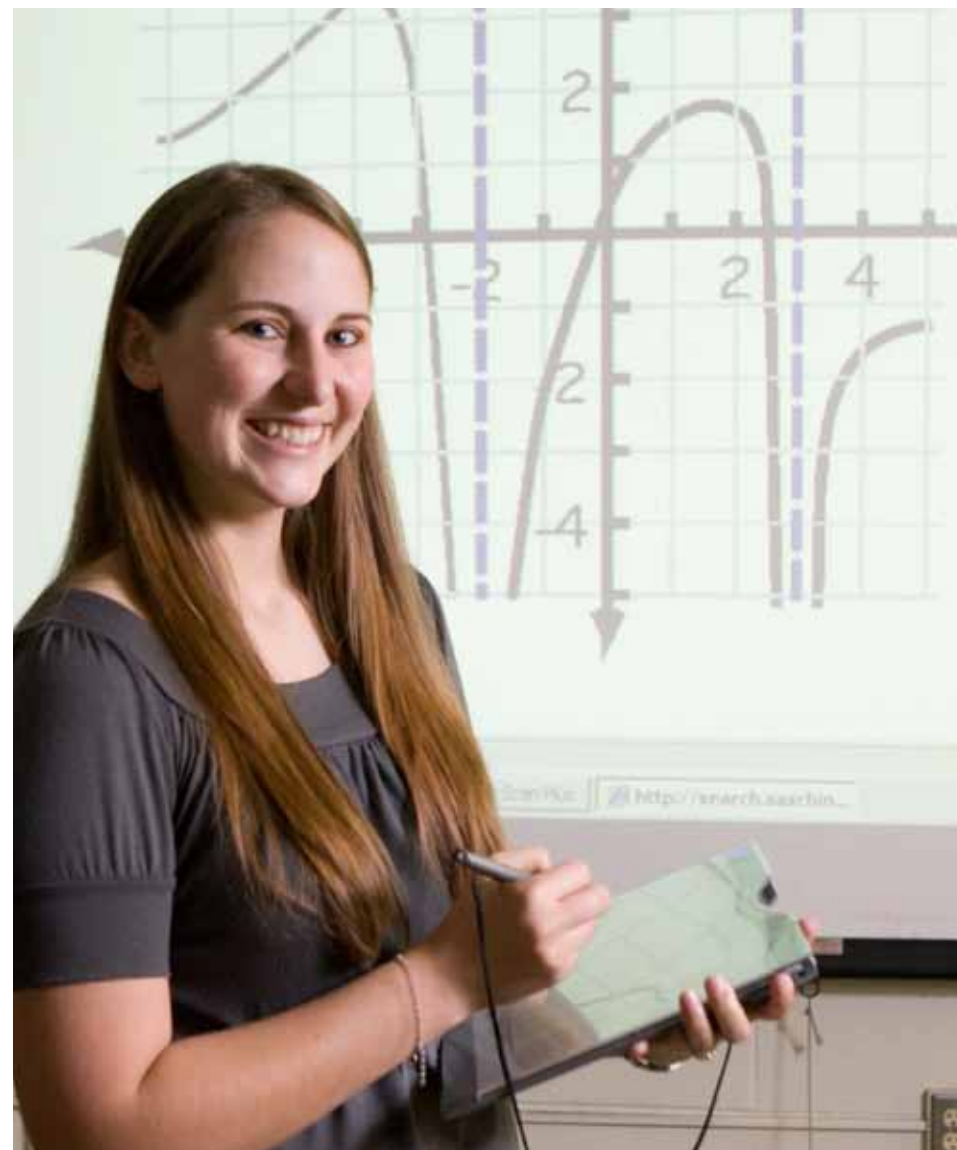
Applied Mathematics  
Mathematics  
Computer Science

## DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

Are you a left-brain thinker? Do you revel in your analytical skills? Do you solve problems in a logical, sequential way? Then mathematics or computer science might be right up your alley.

The Department of Mathematics and Computer Science at UCM provides you with broad and comprehensive knowledge in mathematics, statistics, actuarial modeling, computer programming, software development, hardware design and system design. Math and computer technology touch everything we do, and these programs will give you the strong background you need to carry into your career.

Faculty members are engaged in continual research to stay at the forefront of their respective fields. Each year, faculty members are published in professional journals and give presentations at numerous professional conferences.



# GREEN ACRES, GREAT OPPORTUNITIES



## DEPARTMENT OF AGRICULTURE

Do you want an out-of-the-classroom experience? In the Department of Agriculture, you might spend one day in a classroom and the next day in a 5,000-square-foot greenhouse. Our programs will give you experience in a wide variety of applicable, real-life situations using current technology and equipment.

## GET A LITTLE DIRTY

In UCM's agriculture programs, you'll get your hands dirty in class labs and student projects using facilities such as a greenhouse and nursery complex, an agricultural mechanics laboratory, a shooting range and two university farms. Hands-on experience is valuable in agricultural study and is available to you in the areas of agriculture mechanics, agronomy, animal science, horticulture and soils.

## UNDERGRADUATE PROGRAMS

Agriculture Business  
Agriculture Education  
Agriculture Technology:  
Agriculture Mechanization,  
Agronomic Science,  
Animal Science and  
Horticulture Science

## MILITARY SCIENCE AND LEADERSHIP MINOR

The UCM Army ROTC Program has consistently been recognized as one of the best battalions in the nation. More than 150 students of the Fighting Mules Battalion take Army ROTC courses on campus each year. UCM's ROTC program also has a 100 percent approved active-duty rate.

A minor in military science and leadership is a great addition to any of UCM's academic majors. Additional scholarship money is available to students who qualify in this area.

Cadets in the program also participate in a number of extracurricular activities. You'll see them on campus presenting the colors, rappelling down the Humphreys Building, firing the cannon and doing push-ups after the Mules football team scores.





# CAREER ADVANTAGES

## Why UCM?

- Graduate job placement rate consistently above the national average
- Affordable tuition, earning us a "Best Value" rating by The Princeton Review
- Strong academic programs resulted in our selection by U.S. News & World Report as one of the best public universities in the Midwest



## SCHOLARSHIPS AND FINANCIAL AID

Central Missouri is committed to helping you afford a world-class education. As a student in the College of Science and Technology, numerous scholarship opportunities are available to you, including departmental scholarships in specific areas of study. We encourage you to apply for general UCM scholarships, and financial aid through the Office of Student Financial Services. Learn more about scholarship opportunities at [www.ucmo.edu/scholarships](http://www.ucmo.edu/scholarships).

## STUDY ABROAD

By studying abroad, you add dimension to your college experience by exploring another culture. Currently, UCM's study abroad program allows you to live and learn in more than 22 countries. You don't have to delay your coursework to spend a semester abroad either. Meet with your academic adviser before you leave to plan your course schedule and be sure your credit hours can be applied toward your degree program. If you are interested in studying abroad, contact the International Center at 660-543-4195 or visit [www.ucmo.edu/international/studyabroad](http://www.ucmo.edu/international/studyabroad).

# PUT YOUR DEGREE TO WORK

Wondering about your job options upon graduation? A key finding in a Missouri Workforce 2025 report says Missouri is not producing enough graduates with strong foundations in math, engineering, technology and science to meet the demand. Another study by Missouri METS (Math, Engineering, Technology, Science) says that occupations in these fields are projected to grow at a rate of 20 percent from 2004 to 2015, with more than 22,000 openings. If you're looking for a high paying and secure career that will continue to be in demand in the future, the College of Science and Technology holds many great opportunities for you. UCM graduates have found jobs with:

- |                               |                                     |
|-------------------------------|-------------------------------------|
| All major airlines            | Kansas City Life Insurance Co.      |
| Allstate                      | Lowe's                              |
| Assurant Health               | Missouri Department of Conservation |
| Bechtel Corporation           | Missouri National Guard             |
| Black & Veatch                | Mutual of Omaha                     |
| Bombardier Learjets           | North Kansas City Hospital          |
| Burns & McDonnell             | North Kansas City School District   |
| Cerner Corporation            | Skyline Aeronautics                 |
| Children's Mercy Hospital     | State Farm Insurance                |
| Concordia Veterinarian Clinic | The Hartford                        |
| Coventry Health Care          | Toyota                              |
| Ford Motor Company            | U.S. Army Corps of Engineers        |
| General Motors Company        | U.S. Department of Agriculture      |
| Hertz Equipment Rental Corp.  | U.S. Department of Defense          |
| HNTB Corporation              | U.S. Food and Drug Administration   |
| JE Dunn Construction          | University of Kansas Medical Center |
| Kansas City Health Department | Walgreens Pharmacy                  |

## AVERAGE STARTING ANNUAL SALARIES

Actuarial Science	\$56,900
Agricultural Business and Management	\$40,258
Apparel/Textile Studies	\$44,265
Bioengineering/ Biomedical Engineering	\$68,000
Chemistry	\$43,694
Computer Science	\$57,693
Conservation	\$40,286
Construction Management	\$53,573
Environmental Science	\$39,403
Mathematics	\$47,584
Physics	\$52,800
Plant Sciences	\$37,650

Source: National Association of Colleges and Employers Salary Survey, Spring 2009

## INTERNSHIPS

Not sure about a major? Try an internship in the field first to see how you like it. An internship will give you valuable real-world experience while a professional supervises you. Transfer what you have learned in classes to jobs in your chosen field while making valuable contacts with professionals and gaining experience. Students from the College of Science and Technology have completed internships at a variety of businesses.

- |                            |                      |
|----------------------------|----------------------|
| Allstate                   | Kansas City Life     |
| Burns & McDonnell          | Mutual of Omaha      |
| Cummins Engines            | State Farm Insurance |
| General Electric           | Southwest Airlines   |
| Hallmark Cards             | Towers Watson        |
| Hensel Phelps Construction | VMware Inc.          |
| J.E. Dunn Construction     |                      |





# UCM 30-60-90 STUDENT SUCCESS ROADMAP

## UNIVERSITY-WIDE REQUIREMENTS

### Freshmen (0-29 credit hours)

- Develop friendships by becoming involved on campus.
- Practice good study habits and learn time management skills.
- Get to know your academic advisor.
- Begin to work on the general education courses required for the general education assessment exam.
- Take an introductory course in your major.
- Consider services like the Open Options program to explore different majors.
- Become familiar with the MyCentral Student Portal by using your campus email account.

### 30 Sophomores (30-59 credit hours)

- Confirm your academic major and minor, if applicable.
- Get to know your department chair.
- Complete the general education courses required for the general education assessment exam.
- Pass the general education assessment exam.

### 60 Juniors (60-89 credit hours)

- Check in with your academic advisor to make sure you are on track for a timely graduation.
- Participate in development activities that offer leadership opportunities, service learning and civic engagement.
- Consider a resume-boosting learning opportunity, like study abroad programs and internships.
- Develop your career or graduate school strategy.

### 90 Seniors (90 or more credit hours)

- Seek additional academic and co-curricular activities aligned with your career plans after graduation.
- Collect reference letters from faculty, advisors and others.
- Apply for graduation the semester before your expected graduation date.
- Visit the Office of Career Services to perfect your resume and interview etiquette.

#### Ongoing Benchmarks:

- Maintain a minimum cumulative GPA of 2.0 or higher.
- Complete an average of 15 credit hours per semester.
- Familiarize yourself with the Undergraduate Catalog to know your degree requirements.
- Be mindful of registration and fee payment deadlines.
- Become involved with at least one career related or social co-curricular activity.
- Develop a financial plan and maintain financial aid eligibility.

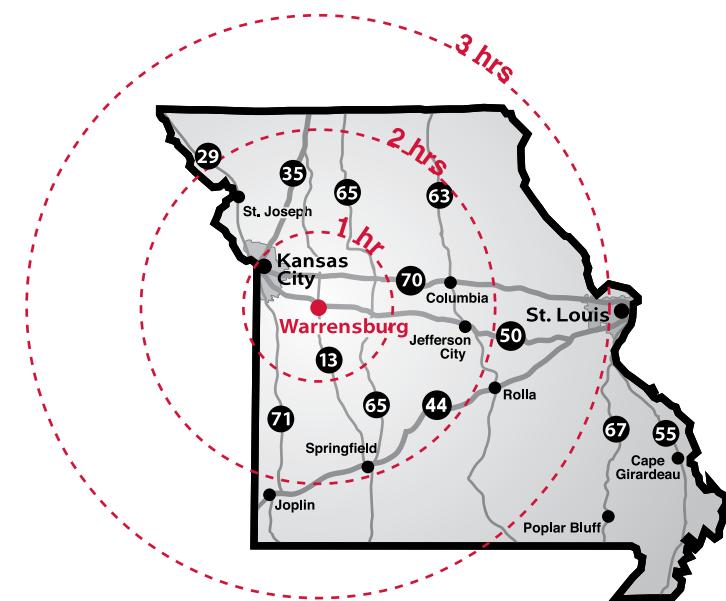
## GET STARTED

Applying for admission to UCM is the first step toward an exciting and rewarding educational experience. Here's a quick checklist of what you'll need to do to complete the admission process:

- Take the ACT (preferred) or the SAT
- Send the scores to UCM using one of the following codes:
  - ACT 2272
  - SAT 6090
- Apply for admission to UCM online at [www.ucmo.edu/apply](http://www.ucmo.edu/apply)
- Have your high school and/or college transcripts sent to UCM
- Pay \$30 non-refundable application fee

Check with your academic adviser for college or department-specific admission requirements.

## SEE YOU ON CAMPUS



We'll be glad to arrange a walking tour of the campus to introduce you to our students, faculty members and staff. We'll also customize a tour for you based on your academic and extracurricular interests. Visit on your own or attend Discover UCM with School of Technology Day. To schedule a visit, call the Office of Admissions at 1-877-729-8266 or visit [www.ucmo.edu/visit](http://www.ucmo.edu/visit).

**VISIT UCM** to learn more about the **COLLEGE OF SCIENCE AND TECHNOLOGY**, student life, financial aid and scholarship opportunities.

## COLLEGE OF SCIENCE AND TECHNOLOGY

- Meet with your academic adviser
- Take an introductory course as required by major
- Explore a learning community
- Take general education courses in preparation for the general education assessment test

- Continue to meet with your academic adviser
- Register and take the general assessment exam during the spring semester
- Review degree audit with academic adviser for remaining requirements
- Investigate study abroad options

- Transition to your major's faculty adviser
- Develop your resume for career fairs
- Explore internship opportunities with your faculty adviser
- Meet with the Office of Career Services to develop job interview strategies

- Apply for degree clearance online using MyCentral
- Develop networks through professional organizations and internships
- Research employers through career services and your faculty adviser
- Interview for employment

### Freshmen (0-29 credit hours)

### 30 Sophomores (30-59 credit hours)

### 60 Juniors (60-89 credit hours)

### 90 Seniors (90 or more credit hours)



[www.ucmo.edu](http://www.ucmo.edu)  
1-877-729-8266

## **COLLEGE OF SCIENCE AND TECHNOLOGY**

[www.ucmo.edu/cst](http://www.ucmo.edu/cst)

**To arrange a visit, contact UCM at 877-729-8266.**

**Apply for admission at [www.ucmo.edu/apply](http://www.ucmo.edu/apply).**

**Be UCM confident.**

Discrimination Policy - The University of Central Missouri actively follows a policy of nondiscrimination in regard to age, race, color, religion, sex, national origin, sexual orientation, marital status, Vietnam Era veterans, and persons with handicaps and disabilities. This policy applies to the awarding of student financial aid, and the recruitment, admission, housing, placement and retention of students, faculty and staff. The university complies with the regulations implementing Title VI and Title VII of the Civil Rights Act of 1964 regarding race, color, national origin, religion and sex discrimination; Title IX of the Education Amendments Act of 1972 regarding sex discrimination; the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973 regarding discrimination based on disabilities and handicaps; the Age Discrimination in Employment Act; and other state and federal laws and regulations. Persons having inquiries concerning the university's compliance with the regulations implementing any of the above are directed to contact the General Counsel, Administration 208, 660-543-4730, or the Director of Human Resources, Administration 101, 660-543-4255, University of Central Missouri, Warrensburg, MO 64093. Toll-free numbers for Relay Missouri are 711 or 800-735-2966 for TTY, and 866-735-2460 for voice callers.