COLLEGE OF SCIENCE, TECHNOLOGY AND AGRICULTURE

Unmanned Aircraft Systems

Bachelor of Science (BS)

Unmanned Aircraft Systems

If you have the will to be a part of a new and growing field that can prove invaluable to law enforcement, agriculture, videography, surveying and many other areas, Southeast Missouri State University's Bachelor of Science in Unmanned Aircraft Systems (UAS) can help get you there. Many professionals use UAS, or "drones," to protect life by using this technology in applications that would normally put human lives at risk. There are already many applications for UAS and the list continues to grow! Southeast is currently the only university in Missouri offering a bachelor's degree in unmanned aircraft systems.

Students learn the fascinating fundamentals of these machines, including maintenance, customization, acquisition, and commercial use. Rather than building drones from the ground up, students take advantage of existing products and resources to adapt drones to meet specific needs. Courses include programming, electrical and electronic systems, mechanical operations, flight, drone design, sensing systems, mission planning, regulations, and safety.

Unmanned Aircraft Systems students will...

- Understand the fundamental concepts required to be a professional in the field, including concepts in electronics, mechanical design, and programming.
- Obtain a more specialized knowledge in unmanned aircraft systems, including flight, design, policy, and mission planning.
- Have the ability to tailor the program to a more specific application area with 9 hours from areas such as agriculture, criminal justice, geographic information systems, and automation.
- Have experience using the techniques, skills, and tools necessary for modern careers in the field of unmanned aircraft systems.

Career Planning

Career preparation is part of the mission of Southeast. 100% of programs offer our students an internship, study-abroad program, clinical opportunity, student teaching or research internship.

The Office of Career Services in Academic Hall 057 can provide students with professional career counseling and coaching, resume critiques, practice interviews, job search strategies, career events, networking opportunities, and more.

Demonstrated Career Proficiency is a Requirement of all Southeast Students		
CL001	First Semester	Students connect academic career planning by completing an online career assessment
CL002	Second Semester	Students learn more about resources available to enhance academic and career planning
CL003	Junior Year	Students learn about continued career planning, job search strategies, and networking
CL004	Senior Year	Students learn about resume development, professional communication, interviewing, and transitioning to the first job from college

Career Opportunities

Unmanned Aircraft Systems is a new program at southeast, however the field is expected to experience rapid growth because of the increased use of commercial unmanned aircraft systems. In addition, the Association for Unmanned Vehicle Systems International estimates the addition of 103,000 jobs for those involved in the manufacturing and operations of drones pending FAA rule changes.

Graduates would be able to have a career as a:

- UAS Mission Planner
- UAS Operator/Pilot
- UAS Technician
- UAS Designer

UAS systems are used in fields such as:

- Law Enforcement and Disaster Response
- Agriculture and Forestry
- Videography and Photography
- Surveying and Inspection

To learn more
Office of Admissions
(573) 651-2590
admissions@semo.edu
semo.edu

To explore the College of Science, Technology and Agriculture online, visit
www.semo.edu/costa

For advising
Center for Academic Advising - North
(573) 651-5090
www.semo.edu/advising
advisingnorth@semo.edu

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Degree Map 2017-2018

This is a guide based on the 2017-2018 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use DegreeWorks to monitor their individual progress.

CURRICULUM CHECKLIST

Unmanned Aircraft Systems – 92 Hour Major; No Minor Required

Required Courses:

___ CH 180 Chemistry in Our World (3)
___ CS 155 Computer Science I (4)
___ CS 265 Computer Science II (4)
___ ET 160 Basic Circuits (3)
___ ET 164 AC Circuit Analysis (3)
___ ET 245 Digital Systems (3)
___ ET 260 Electronics (3)
___ ET 366 Microcontrollers (3)
___ ET 380 Vision & Sensor Systems (3)
___ ET 381 Fundamentals of Aviation in UAS (3)
___ ET 382 UAS Fundamentals (3)
___ ET 383 UAS Design (3)
___ ET384 UAS Law, Policy, & Safety (3)
___ ET 385 UAS Mission Planning & Applications (3)
___ IM 300 Technical Communication (3)
___ IU 314 GeoInfo Science Today (3)
___ MA 137 Pre-calculus (5)
___ MA 140 Analytical Geometry & Calculus I (5)
___ MN 120 Introduction to Mechanical Design (3)
___ MN 219 Statics & Strengths of Materials (3)
___ MN 220 Engineering Economic Systems (3)
___ MN 324 Mechanical Design Process (3)
___ PH 120 Introductory Physics I (5)
___ TN 255 Microcomputer Maintenance & Troubleshooting (3)
___ UI 450 Capstone Experience (3)

Technical Electives – choose 9 hours:

___ AG 440 Precision Agriculture (3)
___ AG 444 Spatial Analysis (3)
___ CJ 430 Policing in an Information Age (3)
___ CS 480 Data Communications (3)
___ GO 340 Remote Sensing (3)
___ GO 445 Geographic Information Systems (3)
___ GO 520 GIS Application (3)
___ IS 320 Human Computer Interaction (3)
___ MN 356 Robotic Fundamentals (3)
___ TN 425 Wireless Communications & Mobile Networks (3)

University Studies Requirements (not already listed above):
UI100 First Year Seminar, EN100 English Composition, Artistic Expression, Written Expression, Oral Expression, Literary Expression, Behavioral Systems, Living Systems*, Development of a Major Civilization, Political Systems, Social Systems

*AO120 or BS105 recommended for Living Systems

If you have dual credit or transfer credit, please visit our transfer course equivalencies guide at semo.edu/transfercredit.

SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	3	CS155	4
	EN100	3	ET160	3
	CH180	3	MA140	5
	MA137	5	PH120	5
	MN120	3		
	Total	**17**	**Total**	**17**
SECOND YEAR	CS265	4	ET260	3
	ET164	3	ET366	3
	ET245	3	ET382	3
	ET381	3	IM300	3
	MN219	3	MN324	3
			Written Expression	3
	Total	**16**	**Total**	**18**
THIRD YEAR	ET383	3	ET384	3
	TN255	3	MN220	3
	Program elective 1	3	Program elective 2	3
	Living Systems*	3	Oral Expression	3
	Develop of a Major Civ	3	Political Systems	3
	Total	**15**	**Total**	**15**
FOURTH YEAR	ET380	3	ET385	3
	IU314	3	UI450	3
	Behavioral Systems	3	Program elective 3	3
	Social Systems	3	Artistic Expression	3
			Literary Expression	3
	Total	**12**	**Total**	**15**

Degree requirements for all students: *a minimum of 120 credit hours, completion of University Studies program, completion of 39 senior division hours (300-599), career proficiencies (CL001-004), Writing Proficiency Exam (WP003), and completion of the Measure of Academic Proficiency and Progress (MAPP) at the senior level. Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.*

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