College of Integrated Science and Engineering Summer Orientation 2025

Dr. M. Afzal Upal Associate Dean, CISE

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Welcome to the College of Integrated Science and Engineering (CISE – pronounced "size")!



We value theoretical knowledge, but we thrive on applying that knowledge.



Small Group Discussion

Transitioning from your current institution to JMU

- What do you expect will be the same/familiar?
- What do you expect to be different?

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Sharing Your Conversations

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Transitioning from your current institution to JMU

Similar

- Hard work is rewarded
- Academics are your job
- Extracurriculars
- Balance fun and school
- Opportunities to learn
- Core requirements & electives

Different

- More freedom
 - Choice of classes/major & more to choose from

BEING THE

- Nobody dictating time use, class attendance, etc.
- You'll have more responsibility for your education



CISE Academic Unit Heads



Computer Science Vetria Byrd



Engineering Rob Prins



Integrated Sciences, GEOG & IA Henry Way



Integrated Sciences, ISAT Stephanie Stockwell



CISE majors

- Department of Engineering
 - Engineering
- Department of Computer Science
 - Computer Science
 - Information Technology
- School of Integrated Sciences
 - Geography
 - Intelligence Analysis
 - Integrated Science and Technology
 - Biotechnology (with Biology & Chemistry)



BS Engineering

- A multidisciplinary program designed with input from industry for the 21st century
 - hands-on learning
 - 2-year capstone
 - teamwork
 - ABET-accredited
- Concentrations
 - 1. Electro-Mechanical Systems;
 - 2. Civil and Environmental, and
 - 3. Geo-Environmental.



CHANGE

BS Computer Science

- Study of the design and analysis of algorithms
- Hands-on learning
- Careers:
 - Computer programmer
 - Software developer
 - Data scientist
 - Software engineer





BS Information Technology

- Study of designing, developing, and managing computer-based systems and solutions
- hands-on learning
- capstone
- less theory of computing & more system administration skills
- Careers:
 - System Administrator
 - Computer programmer
 - IT project manager



BS Geography

- Study of earth, its environment, its people and relationship between people and places
- Concentrations
 - 1. Applied GIS,
 - 2. Environmental Conservation, and
 - 3. Sustainability and Development.
- Careers:
 - Geospatial intelligence analysts
 - Geographic information scientists
 - Urban and regional planners
 - Forest and wildlife managers
 - Climatologists and meteorologists



BS Intelligence Analysis

- Using technology to collect information about a topic, analyze and present it to a decision maker
- Capstone experience
- Close connections with federal government intelligence agencies
- Careers:
 - Intelligence Analyst working for a federal government agency (e.g., FBI, CIA, DIA, and NSA)
 - Law enforcement
 - Financial institutions



CHANGE

BS Integrated Science & Technology (ISAT)

- A unique JMU program teaching science and technology in an integrated fashion
- Systems thinking
- Capstone experience
- ABET-accredited
- Concentrations:
 - 1. applied biotech,
 - 2. energy,
 - 3. environment and sustainability,
 - 4. industrial and manufacturing systems,
 - 5. public interest technology, and
 - 6. applied computing.



What we ask of you

- Make academics your priority
- Bring your best effort
- Push yourself beyond your comfort zone
- Work with others with humility





Choosing majors and minors

- You can change majors at any time Let your interests and your strengths guide you
- Some students choose to double-major or add one or more minors
- Plan ahead: prerequisite structures limit flexibility
- Admissions standards
 - Computer Science
 - Engineering
 - Intelligence Analysis

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Small Group Discussion

What are you most worried about as you embark on your university journey?

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Small Group Discussion

What's your plan for overcoming the challenge that's worrying you the most?

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JMU: A Research Intensive University that thinks of itself as a Liberal Arts College

- Learning Centers (Science & Math Learning Center; Writing Center, Communication Center, Peer Assisted Study Sessions)
- Learning Success Strategies
- Counseling Center
- Office of Disability Services
- Madison Advising Peers
- Dean of Students
- Center for First Generation Students
- Center for Multicultural Student Services
- Community Engagement and Volunteer Center

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HANGE

What you can expect in CISE

- Small class sizes in the major
- State-of-the-art equipment and facilities open to undergrads
- Faculty with a passionate commitment to outstanding education
- High-impact teaching practices
 - Active learning
 - Hands-on activities
 - Traditional lectures
 - Team-based learning





Complex Real-world Problems

- United Nation Sustainable Development Goals (SDGs)
- Job-ready technical skills
- Hands-on learning
- Teamwork
- User-centered design







Opportunities

- Undergraduate Research
 - Undergraduate Research Journal
 - Conference travel
- Study abroad/away: CISE programs from Costa Rica to Australia to Germany to Malta and more



Preparing you to succeed...with many options!

- Variety of paths after graduation
 - Jobs with Businesses or Government
 - Graduate School
 - Start-up Companies
 - Service Work Peace Corps, Teach for America, etc.
- We help you in this process
 - CISE Industrial Partnership
 Program (IPP)
 - CISE Career and Internship Fairs
 - University Career Center



