
CS Freshmen
Night

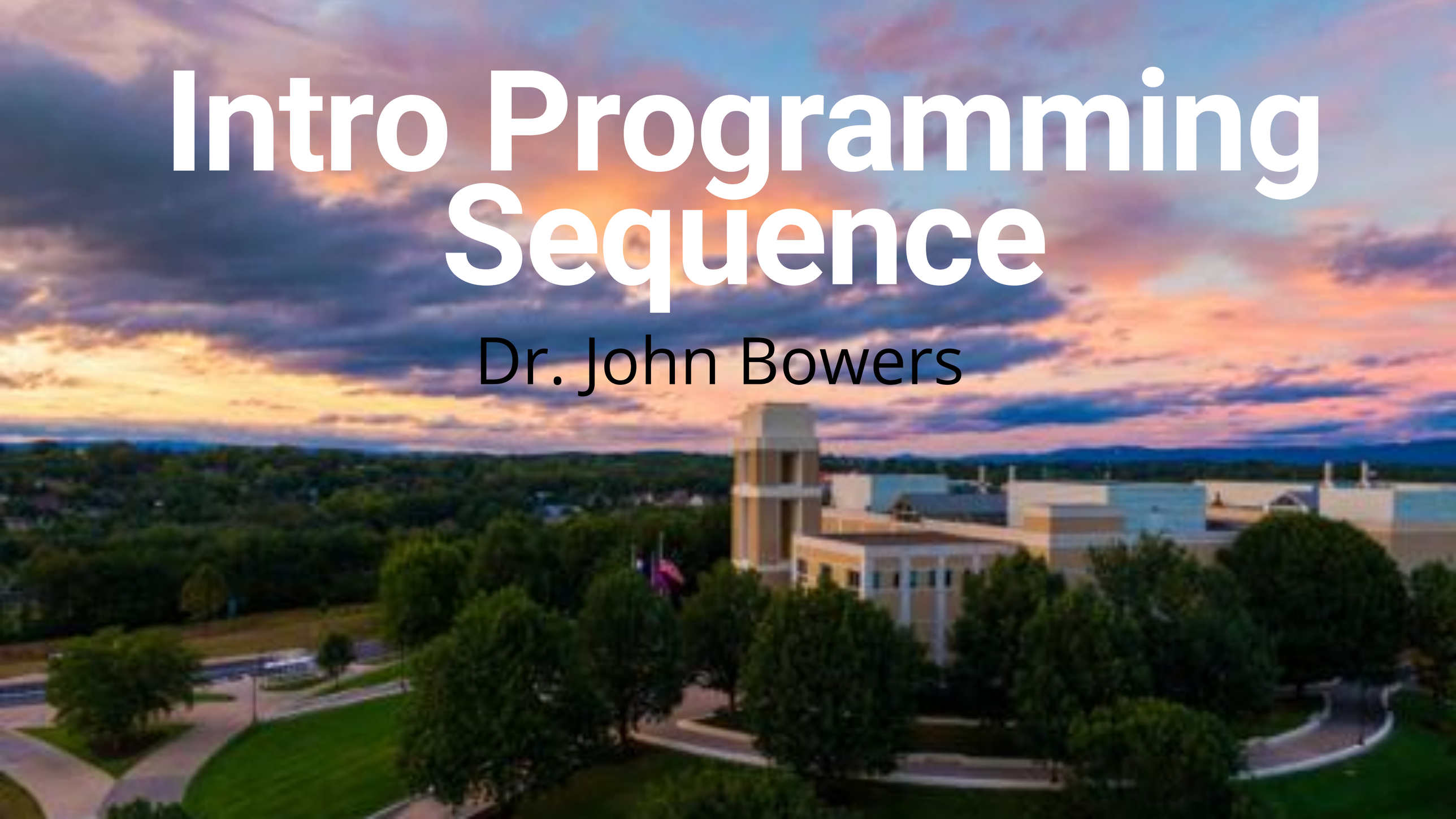
CS Freshmen Night

Agenda

- Introductory Programming Sequence
- Faculty Introductions & research areas
- Applying to the major & planning path
- IT Major
- Strategies for Success
- Departmental Resources
- Departmental Communication
- CS Clubs
- CS Student Panel Q&A
- Pizza

Intro Programming Sequence

Dr. John Bowers



Faculty Introductions

Your Path through CS

Apply to Major

- 3.0 GPA for CS 149 and CS 159
- You must apply

CS Curriculum

- 14 required CS courses (+ stats & calc)
- Need 120 credits to graduate
- Explore minor, have a plan

4-year plan

- Make a plan

(The plan will change)

- Get your tailored plan w/ me!

CS Curriculum

CS 101
Intro to CS

Algebra: MATH 155/156

CS 149
Intro to Prog

CS 159
Adv Prog

CS 227
Discrete Str 1

Full Admit

Prerequisite: CS 227

Calc: MATH 231/235

CS 240
Data Struct

CS 261
Systems 1

CS 345
Software Eng

CS 343
App Dev

App Dev Electives

CS 347
Web Info Sys

CS 447
Inter Design

CS 374
Databases

Prereq: 240 or 343

Prereq: CS 240

CS 327
Discrete Str 2

Prereq: CS 240 *and* CS 261

CS 361
Systems 2

CS 430
Prog Lang

Stats: MATH 220/229/318

Algorithm elective: pick one

CS 412*
Applied Alg

CS 452*
Algorithms

Systems elective: pick at least one

CS 432
Compilers

CS 450
OS

CS 455
Comp Network

CS 456
Architecture

CS 470
Parallel/Distrib

Info Sec Sequence

CS 457*
Info Sec

CS 458
Cyber Defense

CS 482
Topics

Robotics Electives

CS 354*
Robotics

CS 444*
AI

CS 445*
ML

Legend

- Required Core
- Required Elec
- CS Elec. Req 3
- * requires Stats

Note: This is not an exhaustive list of CS electives or all prerequisites; it is a visualization tool for progression through the CS curriculum.

View on CS Wiki:

MyMadison > Student Center

General Education Program (Catalog Year 2020-21)

Not Satisfied: GENERAL EDUCATION PROGRAM (Catalog Year 2020-21) (RG 1001) ~ Students must complete each of five clusters as specified in the General Education Program Planner.

- General Education: Cluster One

Not Satisfied: CLUSTER ONE - SKILLS FOR THE 21ST CENTURY ~ Students must complete the Madison Research Essential Skills Test and one course from each of three areas. (9 credit hours) (RQ 1012)

- Information Literacy
- C1W - Writing

  Not Satisfied: Writing ~ (RQ 1012, CL 2971)

  - Units: 3.00 required, 0.00 taken, 3.00 needed

- C1CT - Critical Thinking
- C1HC - Human Communication

- General Education: Cluster Two

Satisfied: CLUSTER TWO - ARTS AND HUMANITIES ~ Students must complete one course from each of three areas. (9 credit hours) (RQ 1013)

- C2HQC - Human Questions & Contexts
- C2VPA - Visual & Performing Arts
- C2L - Literature

New Major

JAMES MADISON UNIVERSITY

B.Sc. in Information Technology (IT)
James Madison University

Under Computer Science Department

Webpage: https://www.jmu.edu/it

Be a part of JMU's newest major – Information Technology

- Computer Science Department @ JMU

- Our JMU – Alumni… We listen!!

What will I study?

- Fundamental knowledge and skills:
  - Applied Computing
  - Programming
  - Digital electronics, ethical, legal and social aspects in IT, and operating systems
  - Telecommunications, networking, and security
  - Databases
- Set of technical electives to gain knowledge, skills and abilities in either Cyber-Security, Web/Mobile Development, or Computer Networking.
- Senior capstone experience: Working individually, or in teams, students will design and analyze problem with a real-world component, sometimes collaborating with local/regional industry or a governmental partner.

Classes!!

- The Bachelor of Science in Information Technology requires 120 credits, including a capstone project.
- **Core Courses: 52 credit hours**
- *IT 101. Introduction to Information Technology (3 credits)
- CS 149. Programming Fundamentals (3 credits)
- CS 159. Advanced Programming (3 credits)
- CS 227. Discrete Mathematics (3 credits)
- *IT 203. Information Security and Privacy (3 credits)
- *IT 212. Digital Electronics (3 credits)
- *IT 215. Telecommunications, Networking and Security (3 credits)
- *IT 240. Database Design, Implementation and Management (3 credits)
- MATH 220. Introduction to Probability and Statistics (3 credits)

Classes!!

- The Bachelor of Science in Information Technology requires 120 credits, including a capstone project.
- **Core Courses: 52 credit hours**

- *IT 301. Web Technology (3 credits)
- *IT 302. Ethics/Social Aspects in Information Technology (3 credits)
- *IT 333. Advanced Networking (3 credits)
- *IT 311. Operating Systems (3 credits)
- *IT 313. **Community Projects** (3 credits)
- ISAT 341. Introduction to Data Science and Machine Learning (3 credits)
- ISAT 447. Interaction Design (3 credits)

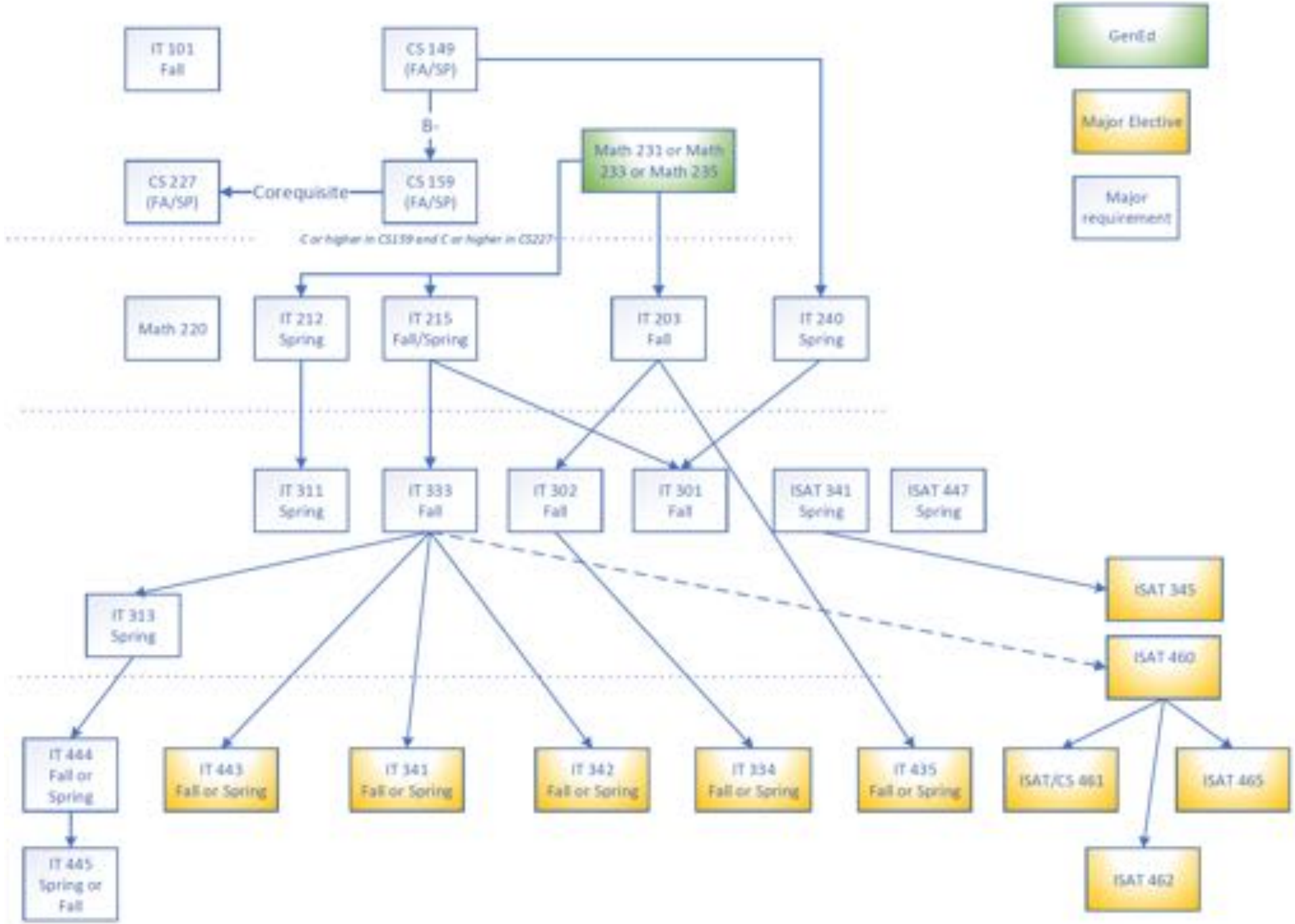
Classes!!

- The Bachelor of Science in Information Technology requires 120 credits, including a capstone project.
- **Core Courses: 52 credit hours**
- Each student must complete **nine hours** (**3 courses**) from the following:
- *IT 334. Computer Cyber Crime, Forensics and Auditing
- *IT 435. Information Security and Cryptography
- *IT 341. Mobile Development
- *IT 342. Web Server Administration
- *IT 443. Cloud Computing/ IoT Networks
- ISAT 460. TCP/IP Networks
- ISAT 461. Internetworking
- ISAT 462. Network Applications Development
- ISAT 465. Wireless Networking, Security and Forensics

Classes!!

- The Bachelor of Science in Information Technology requires 120 credits, including a capstone project.
- **Core Courses: 52 credit hours**
- Capstone
- *IT 444. Capstone Project Design (1 credit)
- *IT 445. Capstone Project Implementation (3 credits)

- **University Electives: 12 credit hours**
- Degree Total: 120 credit hours


IT 101
Fall
CS 149
(FA/SP)
B-
CS 227
(FA/SP)
Corequisite
CS 159
(FA/SP)
Math 231 or Math
233 or Math 235
C or higher in CS159 and C or higher in CS227
Math 220
IT 212
Spring
IT 215
Fall/Spring
IT 203
Fall
IT 240
Spring
IT 311
Spring
IT 333
Fall
IT 302
Fall
IT 301
Fall
ISAT 341
Spring
ISAT 447
Spring
IT 313
Spring
ISAT 345
ISAT 460
IT 444
Fall or
Spring
IT 443
Fall or Spring
IT 341
Fall or Spring
IT 342
Fall or Spring
IT 334
Fall or Spring
IT 435
Fall or Spring
ISAT/CS 461
ISAT 465
IT 445
Spring or
Fall
ISAT 462
GenEd
Major Elective
Major
requirement

Contact Us

- Dr. Samy El-Tawab
- Office: King's Hall building, 1st floor, room: King Hall 121
- Email: eltawass@jmu.edu
- Major Webpage: https://www.jmu.edu/it

Strategies for Success

Dr. Chandani Shrestha
shrestcx@jmu.edu
Dr. Michael Stewart
stewarmc@jmu.edu

JMU Department of Computer Science

When did A/B Start?

Sing a middle A(4)

If you think students who got A/B started earlier

Sing a middle C(4)

If you think students who got C/D/F started earlier

Raise 1 finger ☝️

If you think students who got A/B started earlier

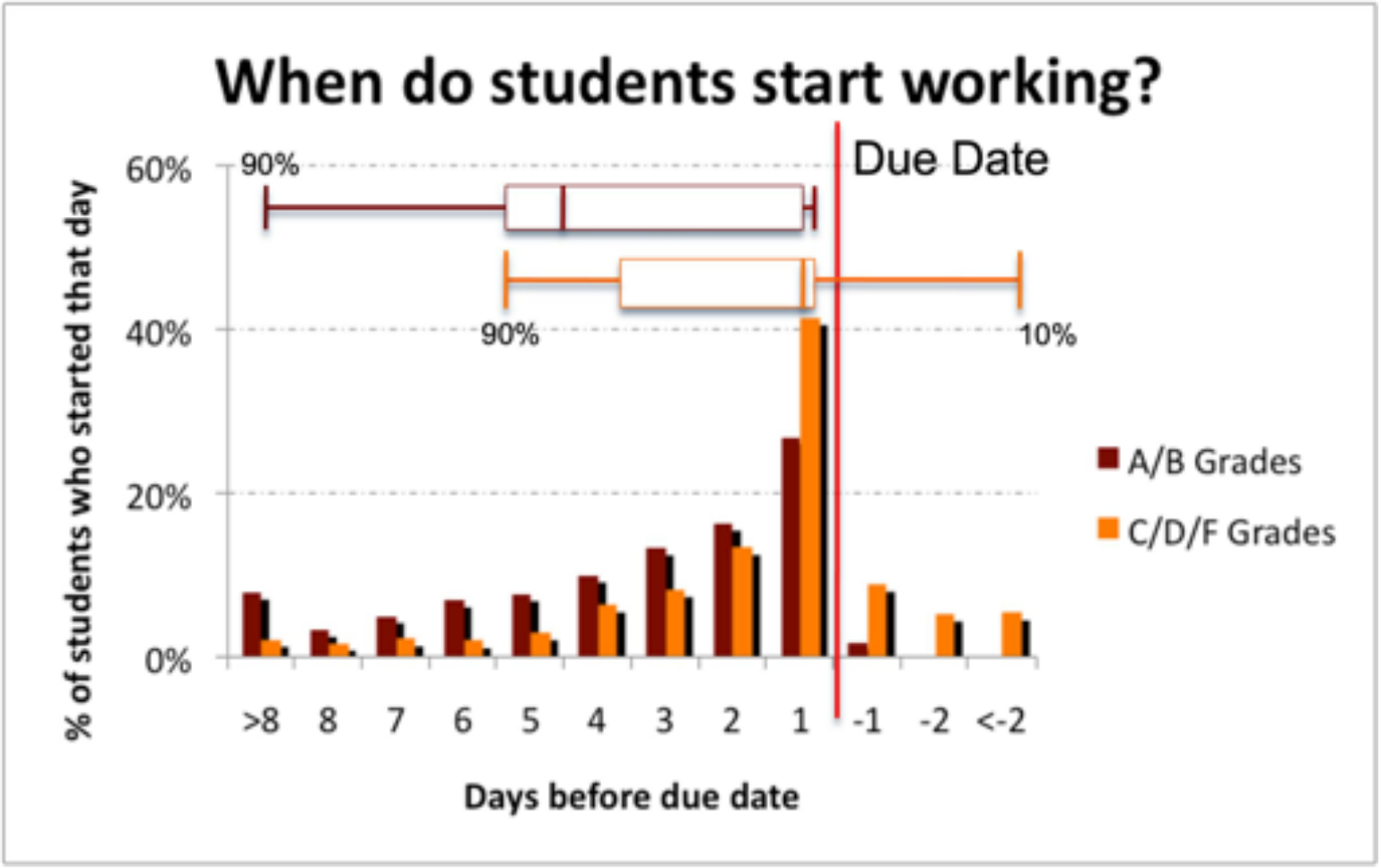
✌️ Raise 2 fingers

If you think students who got C/D/F started earlier

Start Early

1. 3 courses (first 3 CS courses)
2. 10 semesters
3. ~1100 students
4. ~105 assignments
5. ~90,000 assignment submissions

Stephen H. Edwards, Jason Snyder, Manuel A. Pérez-Quiñones, Anthony Allevato, Dongkwan Kim, and Betsy Tretola. 2009. Comparing effective and ineffective behaviors of student programmers. In Proceedings of the fifth international workshop on Computing education research workshop (ICER '09). Association for Computing Machinery, New York, NY, USA, 3–14. https://doi.org/10.1145/1584322.1584325



"Examining the Behavior of Effective Student Programmers" Snyder, Edwards, Perez Quinones Poster at SIGCSE 2010.

Who spent more time?

_

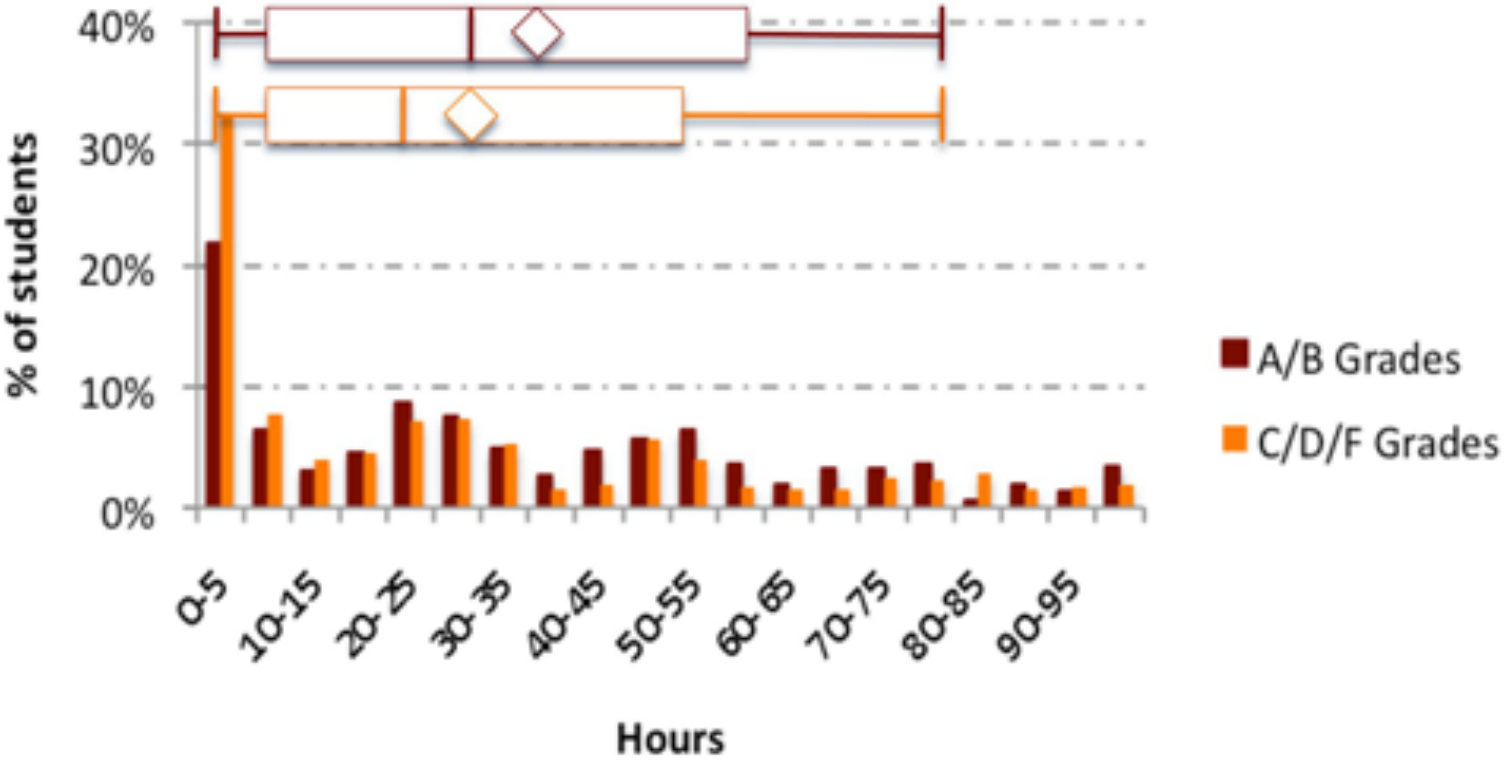
Raise 1 finger ☝️

If you think students who got A/B spent more time

✌️ Raise 2 fingers

If you think students who got C/D/F spent more time

How much time do students spend?



"Examining the Behavior of Effective Student Programmers" Snyder, Edwards, Perez Quinones Poster at SIGCSE 2010.

Start Early

1. Print, yes really! 🖨️ Print your programming assignment
2. Annotate it with notes and questions
3. Bring it with you to lab, office hours, TA hours

Why might starting early matter?

1. Aware of questions to take to reading, lab
2. Time to get questions answered by prof, TAs
3. Familiar with assignment when prof, TAs, colleagues discuss
4. Can afford to step away

tl;dr

- Start early, ask early
- Document your process
- Use available resources
- Reflect
- Balance

Document your process

- ➔ What has worked in the past may not be as helpful for these classes and assignments
  - ◆ May not have needed to complete readings, study in past
  - ◆ Have had completely different kinds of work previously
- ➔ Hard to troubleshoot your process if you don’t have one/know what you did
  - ◆ “I spent 40 hours on this assignment, and I still don’t get it. I read the chapter and re-read it 3 more times!”

Use available resources

Stay tuned after these messages for more information about:

1. 🦸 TAs, including 4th Hour
2. Office Hours 👩‍🏫
3. CS Ambassadors
4. Advising
5. Clubs!

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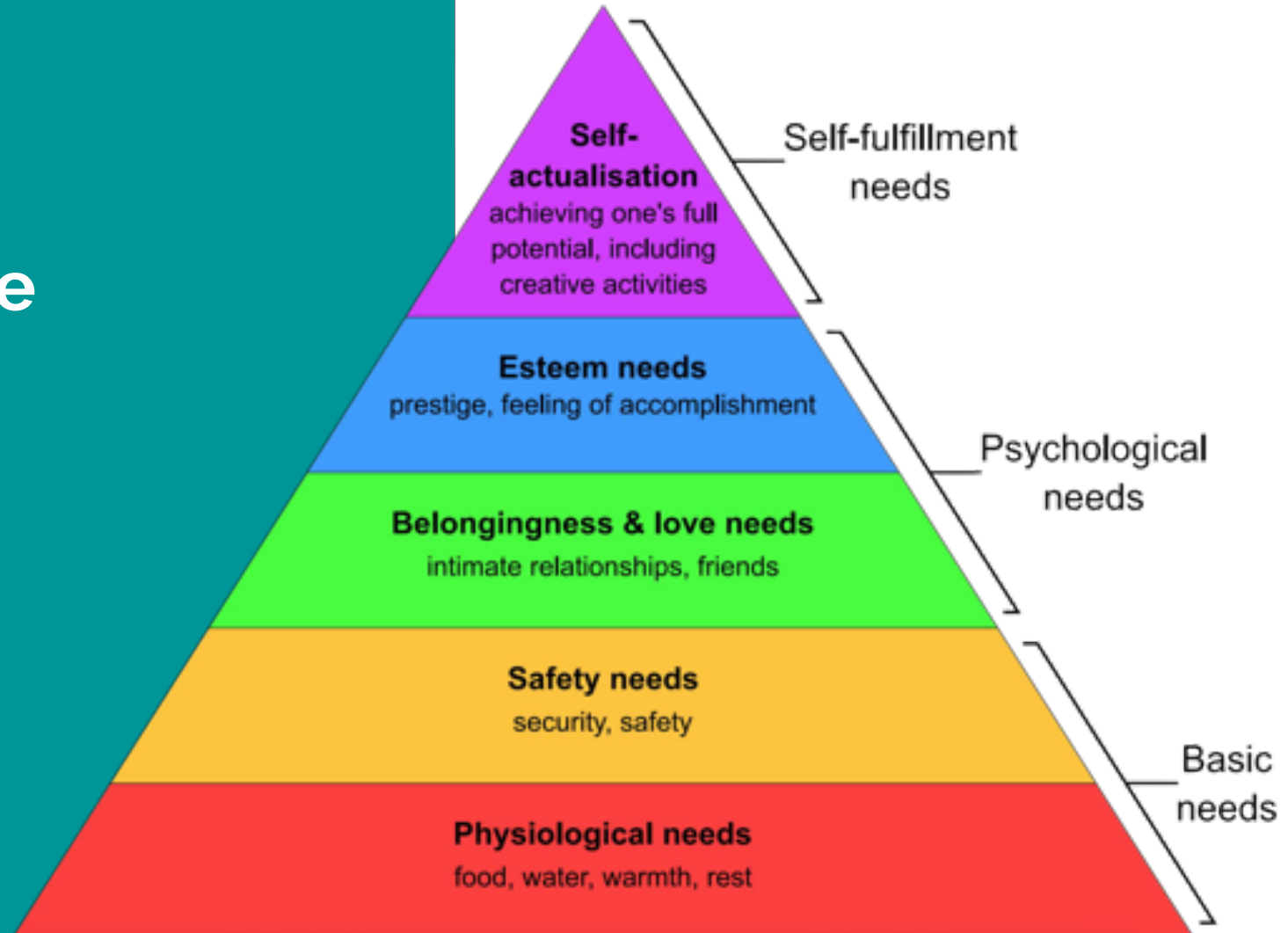
REFLECT

Balance

Work/Life

Balance


Self-actualisation
achieving one's full potential, including creative activities
Esteem needs
prestige, feeling of accomplishment
Belongingness & love needs
intimate relationships, friends
Safety needs
security, safety
Physiological needs
food, water, warmth, rest
Self-fulfillment needs
Psychological needs
Basic needs

tl;dr

- Start early, ask early
- Document your process
- Use available resources
- Reflect
- Balance

Resources

CS TA Hours

Office Hours

CS Ambassadors

Student Success

JMU Department of Computer Science

Communication

Listserv Emails

Email Workshop
Wed. Sep. 28 @ 3:30

CS Advising Canvas Site

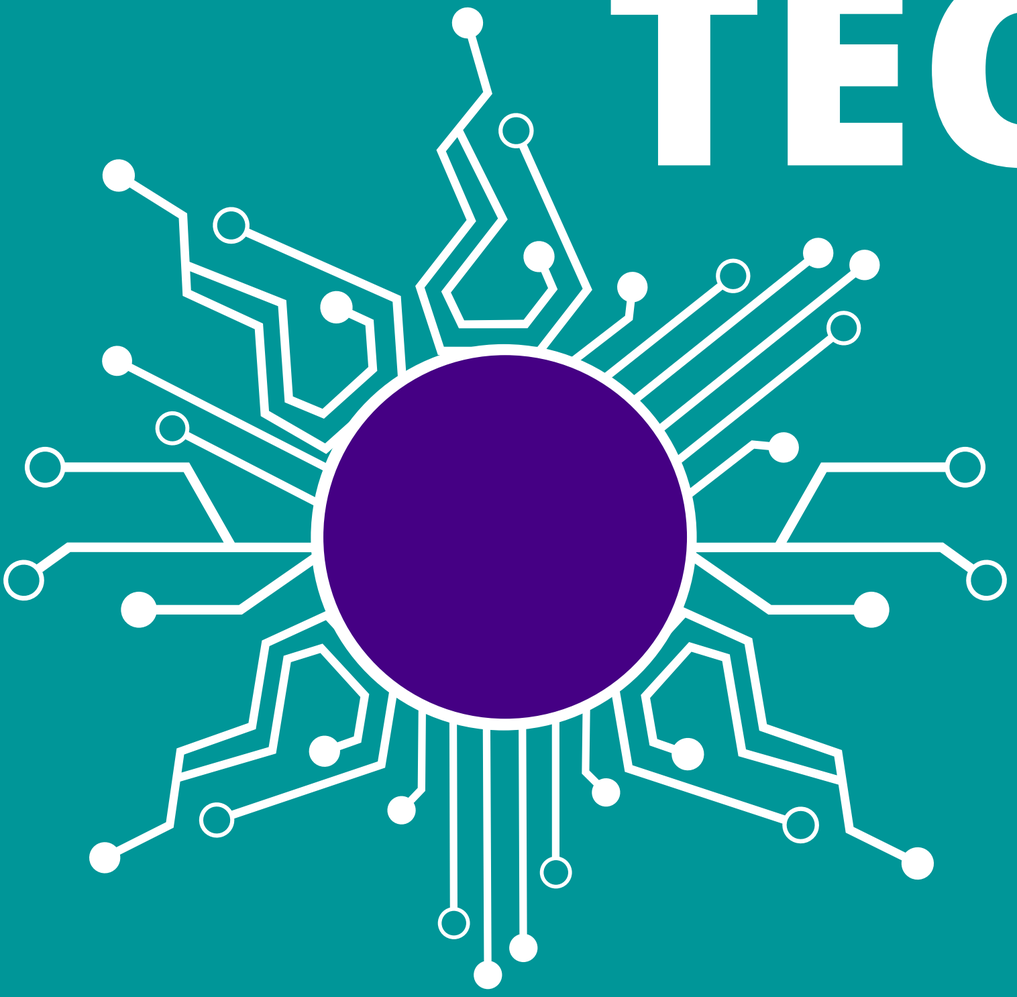
Calendar of
Important deadlines

CS Wiki

First stop for all
questions about dept.

JMUCS

WOMEN IN TECHNOLOGY



Upcoming Meetings:

Sep. 26, Oct. 10, Oct 24

6:30-7:30pm

in King Hall 160

JMU Department of Computer Science

CYBER DEFENSE CLUB

Thursdays 5:30-6:30pm
in King Hall 236

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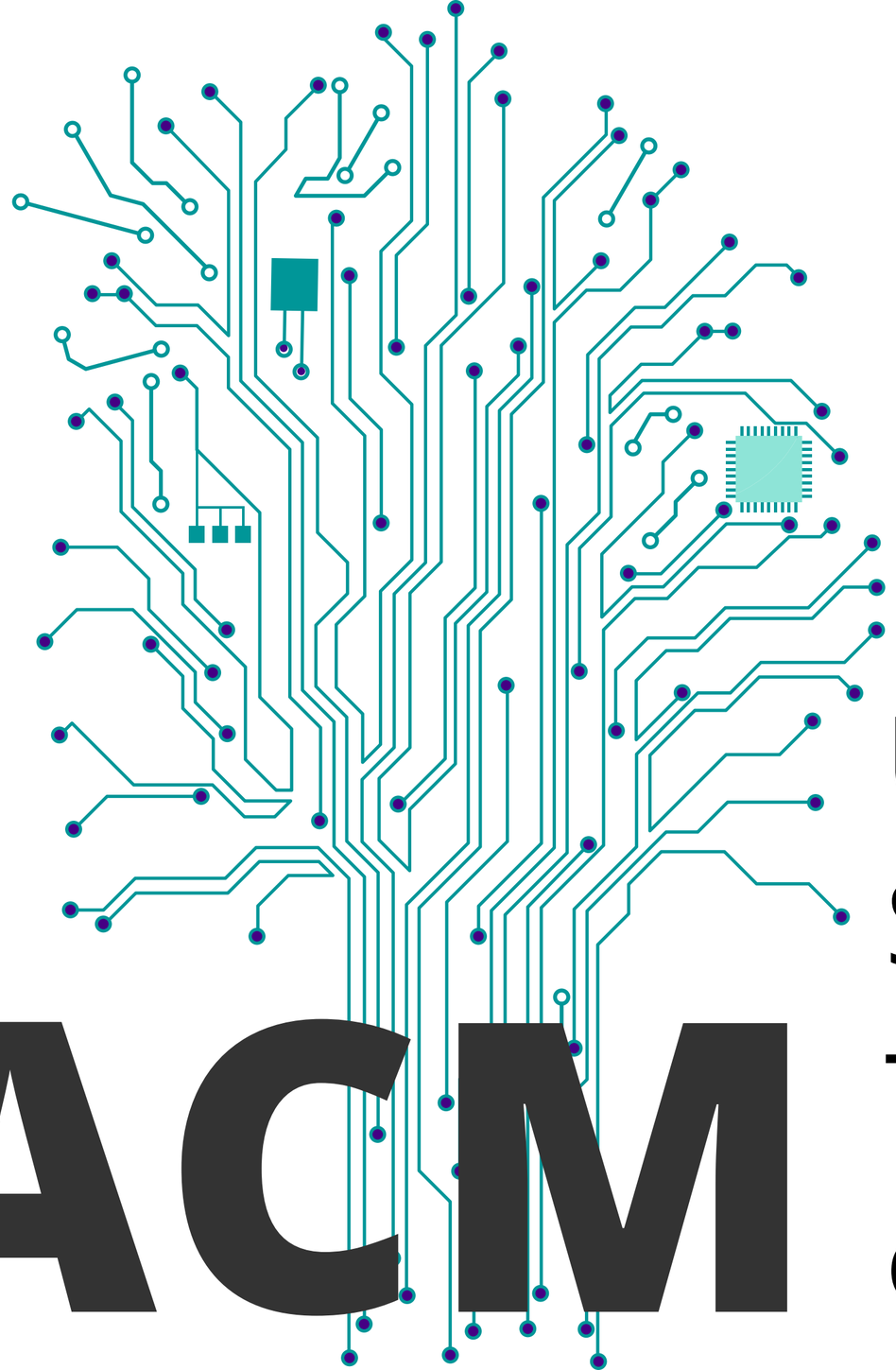

ACM

Upcoming Meetings:
Sep. 27, Oct. 11, Oct 25
Tuesdays 5:30-6:30pm
on Zoom or Discord

COMPETITIVE PROGRAMMING

Mondays 8pm-9pm
in King Hall 236

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UNIX USERS GROUP

Wednesdays 6:30-7:30pm
in King Hall 236

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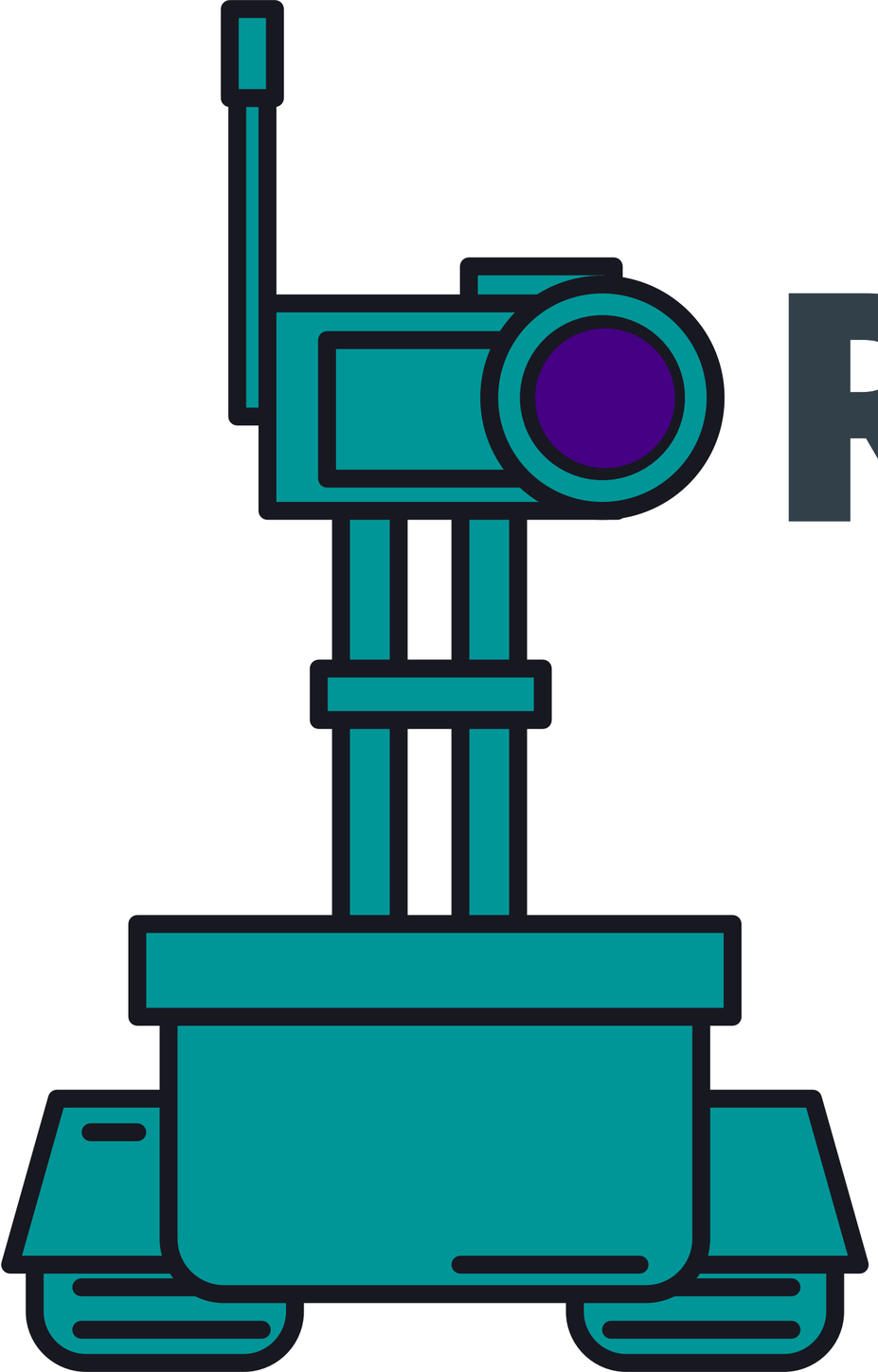

ROBOTICS

Tuesdays 5pm-6pm
in EnGeo 1203

JMU Department of Computer Science

CS Student Panel

Pizza Time

enjoy & mingle

- 2nd Floor Hallway: Pepperoni
- Study Area across from 248: Cheese
- King 260: Veggie, Gluten-free, Dairy-free

A class begins here shortly, so we do need to leave!