

# Engineering/CIS/Science Focus Group

presented by

Laura Demsetz

Professor of Engineering, Academic Advisor

[demsetz@smccd.edu](mailto:demsetz@smccd.edu)

650 574-6617

19-046

# During the next hour....

- General transfer information
- Issues common to Engineering/CIS/Science majors
- Class sequencing (the prerequisite chain!)
- Resources
- Preparing for transfer in
  - Engineering
  - CIS
  - Physical Sciences
  - Biological Sciences

Please ask questions along the way!

# General Transfer Information

- To transfer, you need 60 transferable units including
  - Big 4: Engl 100, Critical Thinking, Speech (for CSU), Math  
If possible, get these done before your last semester at CSM
  - Major prep (IMPORTANT!)
  - General education ([CSU-GE](#), [IGETC](#)\*) \*not for most UC engineering
- For Fall 20xx transfer
  - Complete applications in Oct/Nov 20xx-1
  - Classes taken through Spring 20xx are considered in the admission process
  - Consider a [Guaranteed Transfer Contract](#); check the details now.
- Be realistic with loads
  - No more than 3 major classes per term  
(fewer if you work > 20 hours per week)

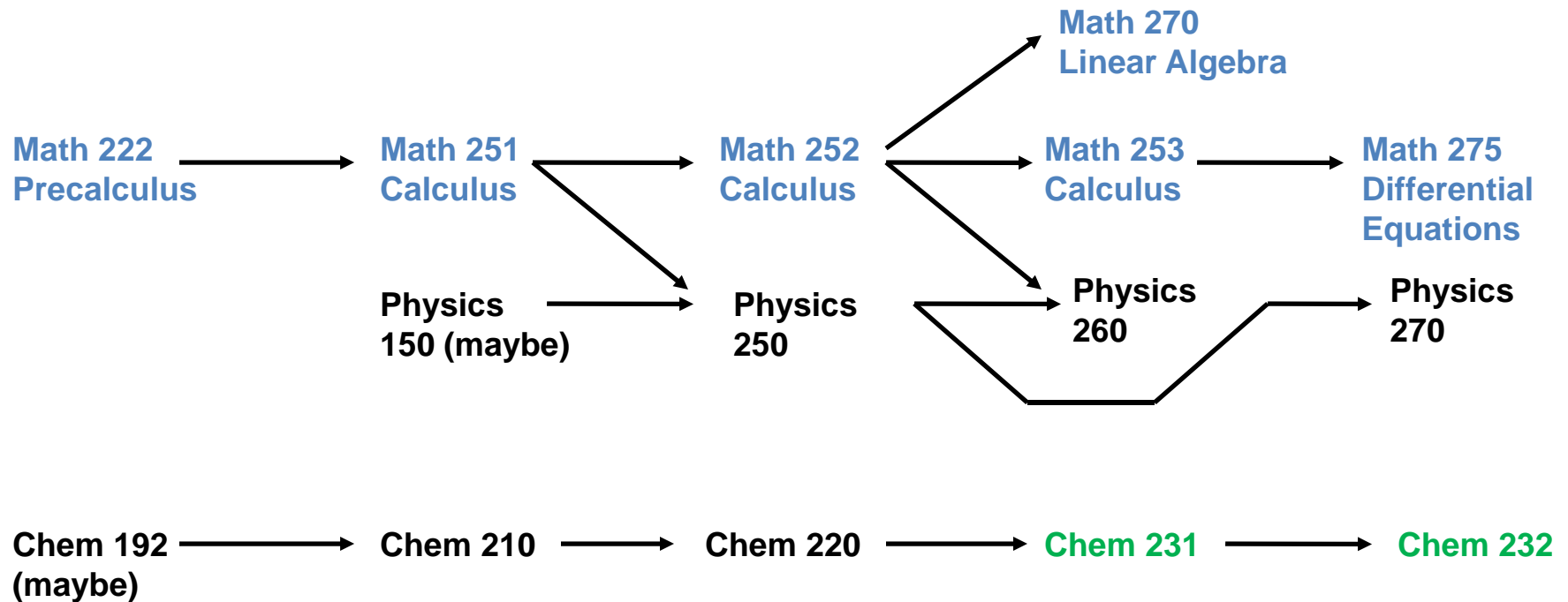
# Transfer units & lower division requirements

- If all your coursework has been at community colleges, there is no upper limit to the units you can take before transfer.
- The courses you take before transfer will be used to satisfy lower division requirements.
- No more than 70 units are awarded upon transfer;  
This is a **good** thing!
- If you do not complete the required lower division general education classes before transfer, you will have to do so after transfer (along with the upper division requirements).
- In a few cases, courses may fulfill an upper division requirement; you will have to take an alternate upper division course upon transfer. (MATH 270, 275; CHEM 231, 232; ENGR 260)

# Common Issues

- Engineering/CIS/Science majors have lots of
  - Lower division major prep
  - Interconnected courses (prerequisite chains)
  - Labs
- Many majors/schools are competitive
- To get through efficiently
  - Don't postpone major classes
  - Take a math class (nearly) every semester
  - Pay attention to the specific requirements of the majors/schools you are considering; consider guaranteed transfer contracts
  - Balance your load

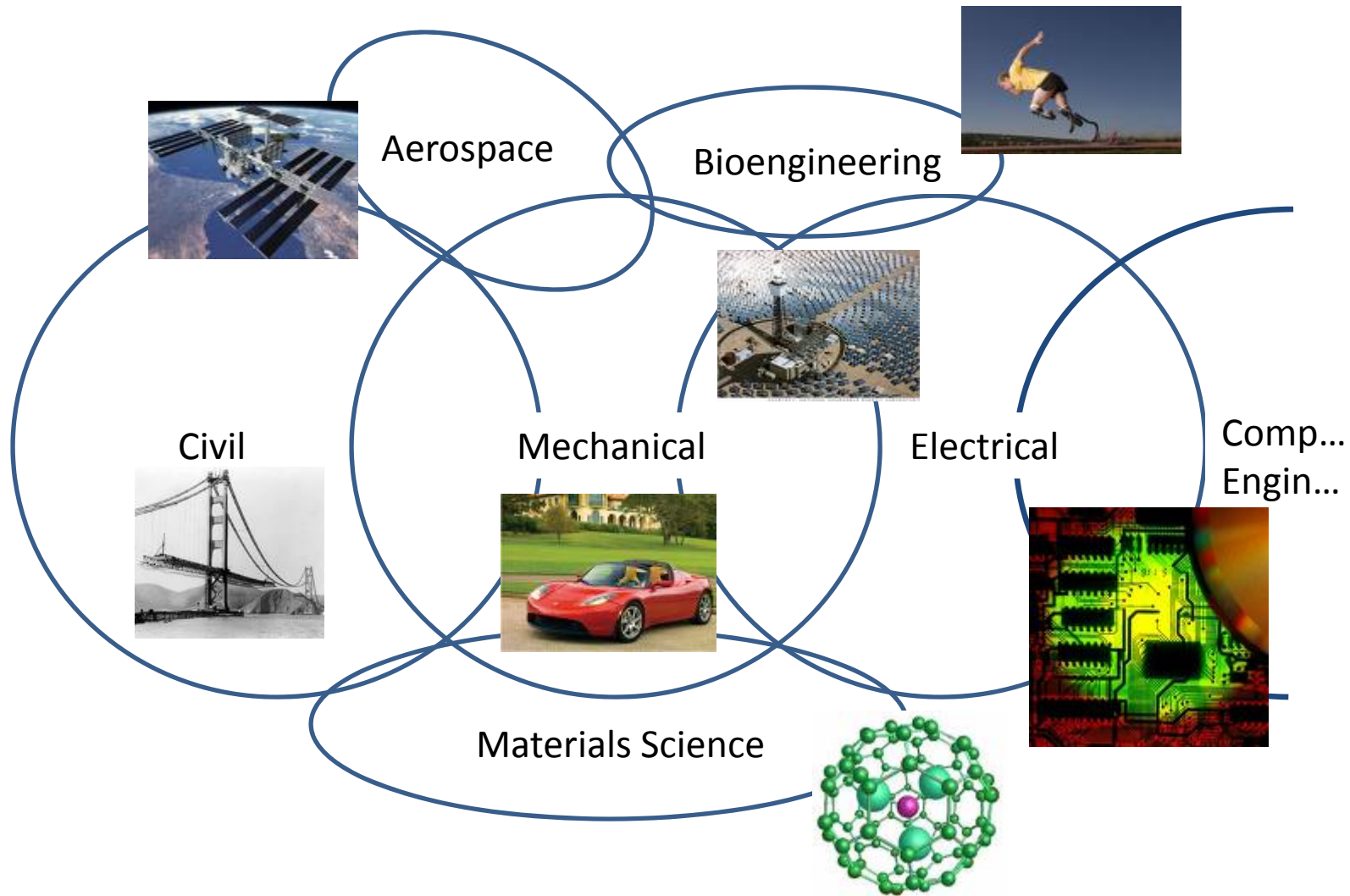
# Sequencing of Major Classes, Part 1



# Resources

- Career Cornerstone  
(<http://www.careercornerstone.org/>)
- [www.assist.org](http://www.assist.org)
- Transfer school website  
(especially for Cal Poly San Luis Obispo)
- CSU-GE and IGETC patterns
- Transfer Center events
- Transfer school open house / preview days

# Engineering Majors



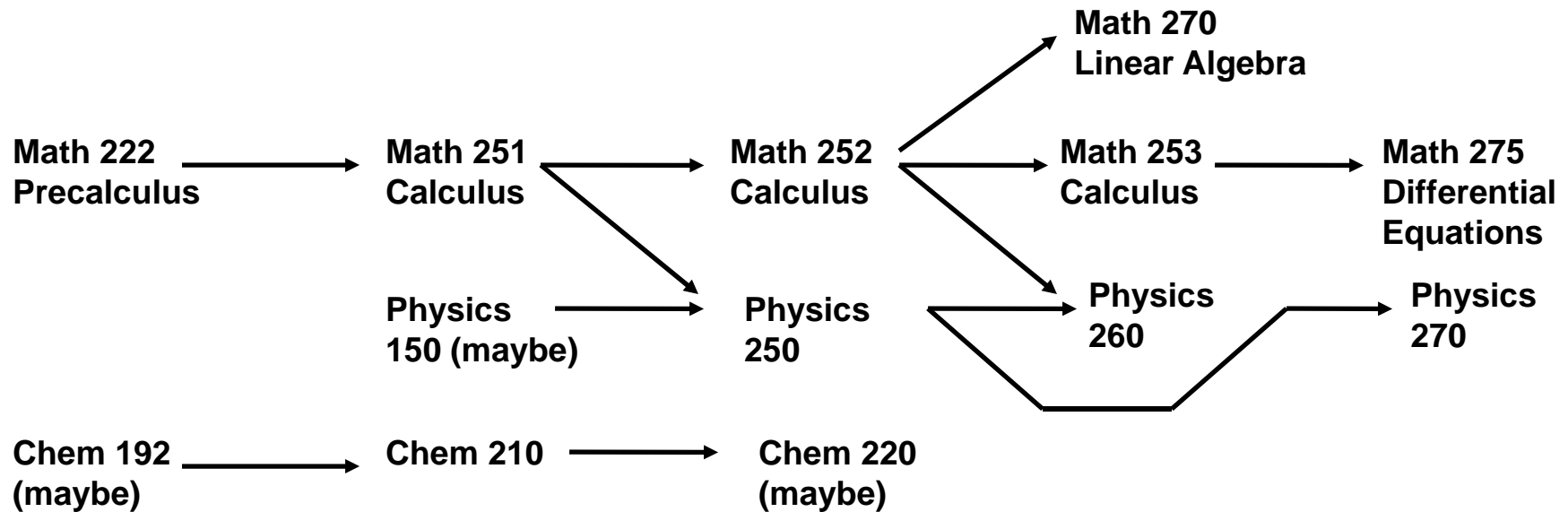
# Engineering Majors

- Entry level degree in engineering is a bachelor degree; you should prepare to transfer.
- You must specify a specific engineering major when you apply to transfer.
- Choice of major may affect choice of classes starting at calculus.
- Consider getting AS degrees (engineering, physics, math) long the way.

# Major preparation

- Math (5 classes starting with Math 251)
- Science
  - 3 physics classes (Phys 270 is a “selective” at UCB)
  - 1 or 2 chemistry classes
  - maybe biology
- Engineering (1 to 5 classes)
- Programming (1 to 3 classes)
- General education

# Sequencing of Major Classes Common to Most Engineering Majors



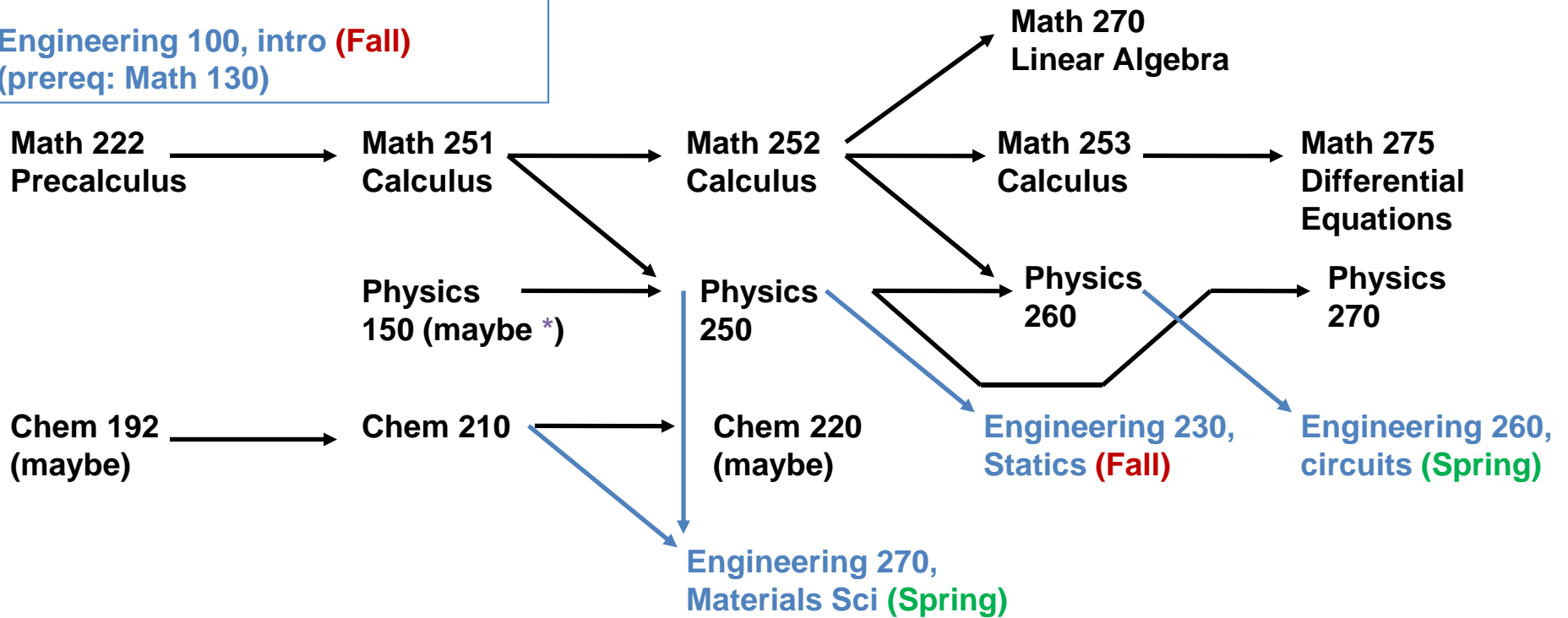
**ENGR 215 (has Math 251 prerequisite) or**

<b>CIS 254</b>	<b>→</b>	<b>CIS 255</b>	<b>→</b>	<b>CIS 256 (maybe)</b>
		<b>Or</b>		<b>Or</b>
		<b>CIS 278</b>		<b>CIS 279 (maybe)</b>

# Typical Courses for Mechanical Engineering

Engineering 210, graphics (Spring)  
(prereq: Math 130)

Engineering 100, intro (Fall)  
(prereq: Math 130)



ENGR 215 (has Math 251 prerequisite) (Fall) or

CIS 254 → CIS 255  
Or  
CIS 278 → CIS 256 (maybe)  
Or  
CIS 279 (maybe)

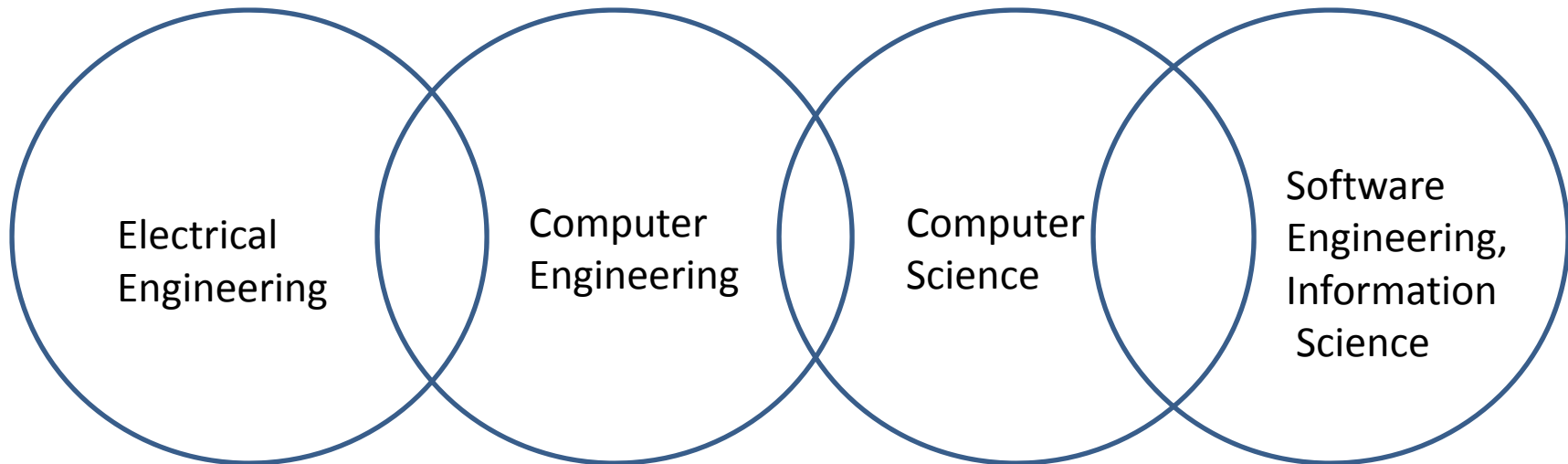
\*Take physics placement test to see if Physics 150 is needed. Contact physics instructors to schedule the test.

# CIS and Related Majors

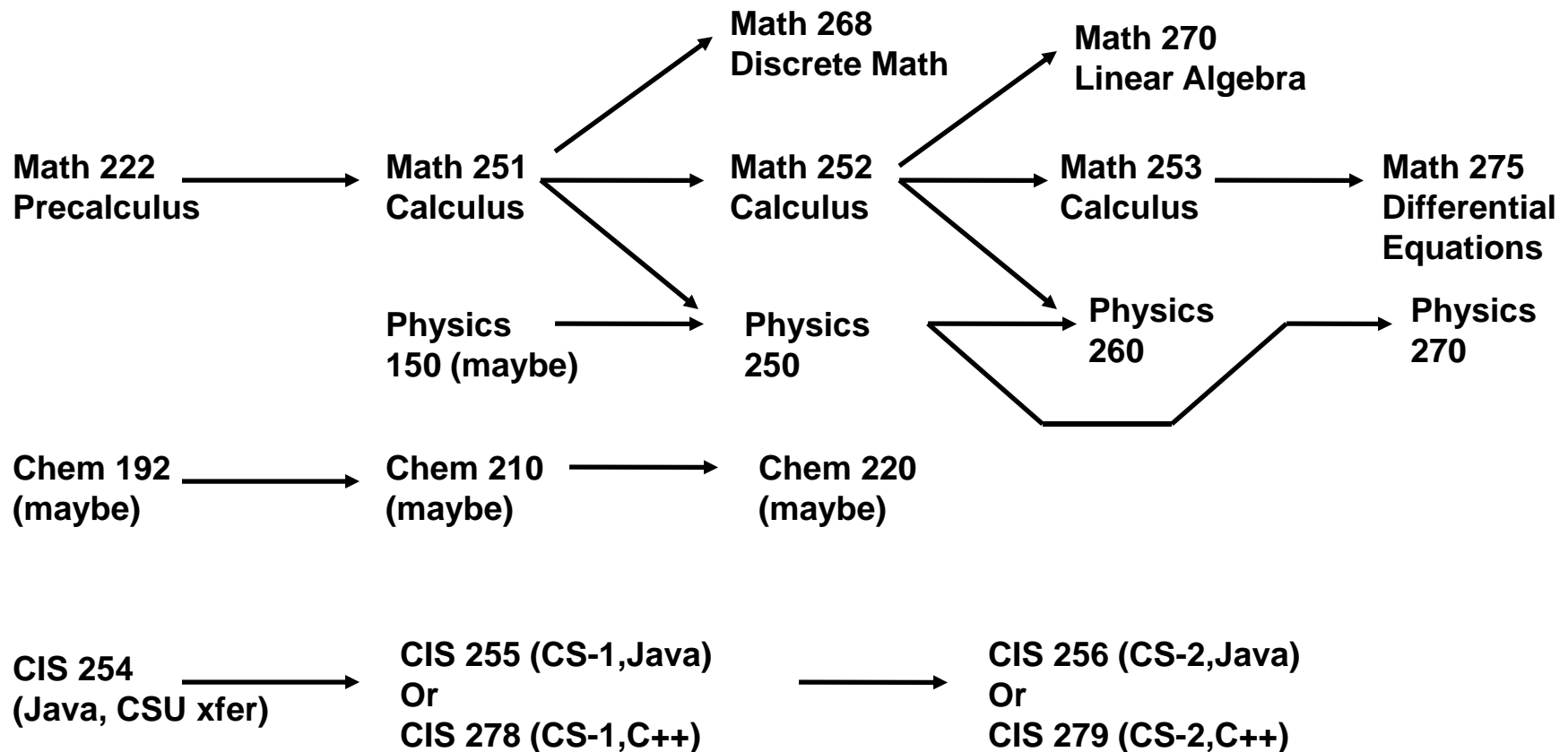
Focus on  
hardware,  
signals



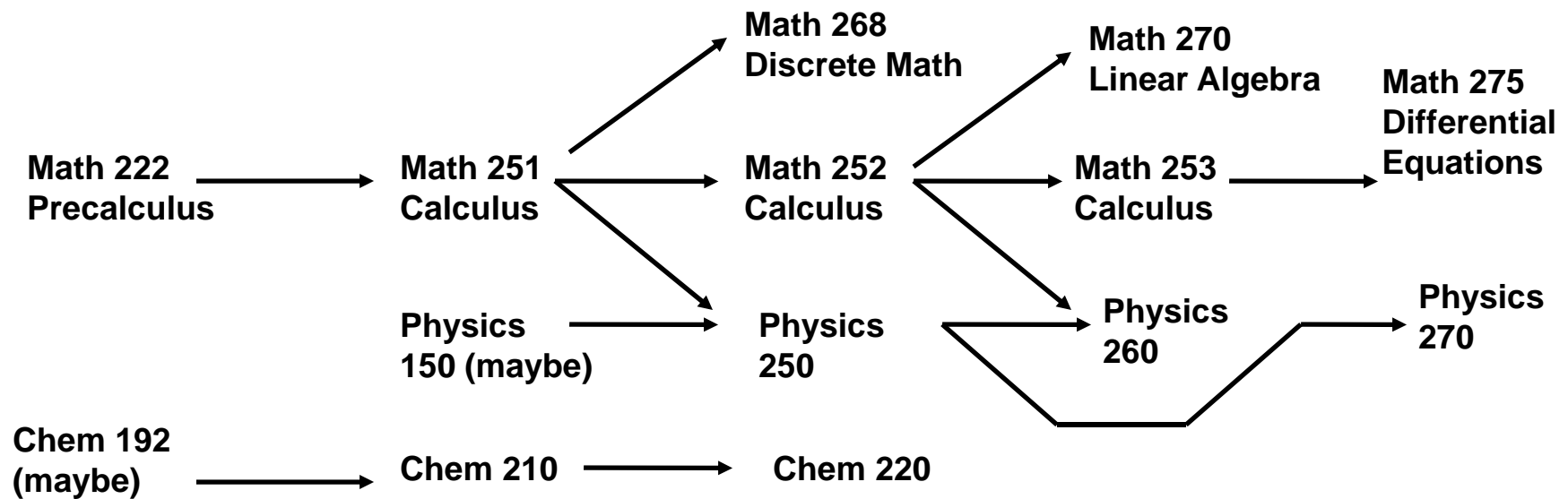
Focus on  
software,  
information



# Sequencing of Major Classes for CIS



# Sequencing of Major Classes for Physics and Chem Majors



# Biological Sciences

- Lots of departments
- Major prep usually requires one physics sequence:
  - Physics 210, 220 (trig-based)
  - Physics 210/211, 220/221 (calculus supplement)
  - Physics 250, 260 (calculus-based)
- Major prep usually requires two semesters of calculus
  - Math 241, 242 (applied)
  - Math 251, 252 (but need Math 253 as co-req for Phys 260)
- Major prep usually requires up to four semesters of chemistry
  - Chem 210, 220, 231, 232
- Major prep usually requires four semesters of biology
  - Biol 110, 210, 220, 230
  - or
  - Biol 110, 240, 250, 260