Catalog change: ODEs/physics requirements

Beginning in 2023-24, the Course Catalog will reflect the following approved curriculum change: Ordinary differential equations (ODEs) and 4 credits of physics will be required for degrees in ECE, ME, and E:Robo. All other degrees/programs will require a minimum of 2 credits of physics and no ODEs. QEA 1 & 2 already satisfy the 2 credits of physics, so students who are not in ECE, ME, and E:Robo can select other math/science courses to meet their credit distribution requirements (which are unchanged: 30 math+science, of which at least 10 must be math).

QEA3 meets requirements for ODEs and an additional 2 credits of physics, so **students considering or planning majors in ECE, ME, or E:Robo should enroll in QEA3** (presently the only catalog course offering ODEs and physics). Students who are sure they will major in E:Computing, E:Design, E:Bio, E:Sustainability, or a self-designed concentration have a choice of how to satisfy their math and science credit distribution requirements and do not necessarily need to take QEA3.

Q: Wait, so do I have to take QEA3 or not?

A: If you're planning to major in ECE, ME, or E:Robo, you will still have to take QEA3 to complete your ODEs/physics requirement. If you're sure you're going to major in something else, you can elect to use the new graduation requirements (see next question), but there are some caveats, so please read on!

Q: If I have not yet taken QEA3, can I elect to use the new graduation requirements?

A: By default, your requirements are those of the catalog in place when you matriculated; however, you can elect to graduate under the 2023-24 Course Catalog (which will include the updated requirements) during your sophomore Declare-a-thon, which would allow you to use the new requirements.

Q: Should I take QEA3 if I don't know what my major will be?

A: Yes! If you are unsure of your planned major, we **enthusiastically recommend** registering for QEA3 because it meets the requirements for most majors. Even if you later choose a major that does not require QEA3, it provides math and science credits that help meet credit distribution requirements.

Q: If I know I'm going to be E:Design/Sust/Computing/Bio/self, should I take QEA3 anyway?

A: There are many good reasons to take QEA3 anyway!

- It provides maximum flexibility should you change your mind about your major
- Physical systems are important in fields you may be interested in, such as:
    - Scientific computing
    - Medical device design
    - Energy and climate
- If you're E:Design/Sust/Bio/self and your concentration focuses on any kind of dynamic system, QEA3 may be part of your plan of study
- You want to learn about differential equations, modeling 1^{st}- and 2^{nd}-order physical systems, or frequency analysis
- You eventually want to take a course that has QEA3 as a **prerequisite**, such as ESA, Intro Thermal-Fluid Systems, FunRobo, or AD Comms
- You're going to Scotland this fall (QEA3 is a required part of the Scotland study away program)
- You need science and/or math credits

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Q: What should I do if I'm not sure whether to take QEA3?

A: Start by talking to your advisor. Because of the nature of prerequisites and when courses are offered, if you are on the fence, consider just taking the course.

Q: Under what circumstances should I *not* take QEA3?

A: If you are 1) confident that your major/concentration will not require QEA3, 2) you have a plan to get enough math and science credits to graduate, ideally by taking a course with math and/or science next semester, and 3) there is another course next semester that would be more beneficial to you, then you and your advisor might decide that you should take that course instead of QEA 3.

Q: What does this change mean for students who already completed the QEA 1-3 sequence?

A: Nothing.

Q: Who can I speak with if I'm interested in learning more details about this catalog change?

A: Emily Tow, who teaches QEA3 and initiated this change.