Course Paths

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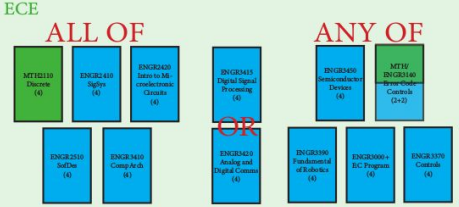
The Problem

Creating a 4-year plan at Olin is difficult. We would like to make a program to ease the process of deciding when to take the classes you need to graduate!

Current Solutions

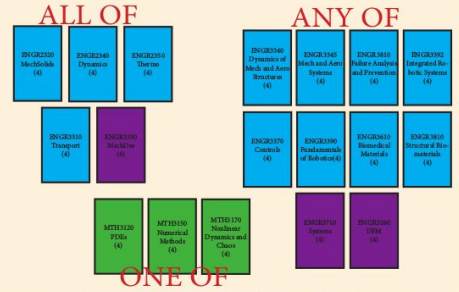
Requirements by Major

ECE



The ECE Requirements in comparison to the ME requirements are a bit more free to interpretation. E:C 3000 level classes will count for ECE credit. The ME and ECE space share Controls and Robo I as requirement fillers. The ECE space has the only Integrated credit offering, Error Control Code. This class has not been offered since the faculty member leading the class left.

MechE



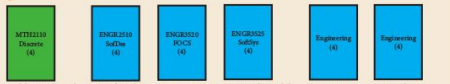
In the ME space, classes from across the various majors will count for credit, like the MatSci/Bio oreinted Biomedical Materials and Structural Biomaterials. Of interest is the number of Design classes that count for credit in this space if not taken as Design Depths.

Requirements by Major

eBio

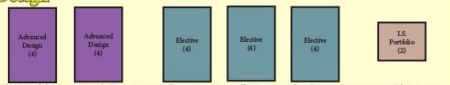
Classes that fall into these categores - Advanced Math: MTH3120 PDEs; MTH3170 Nonlinear Dynamics and Chaos. Advanced Bio: SCI2210 Immunology, SCI3210 Human Molecular Genetics in the Age of Genomics. Bioeng: all ENGR36xx series, and ENGR3810 Structural Biomaterials. Students are directed to talk to Alisha, especially if considering pre-med. Brandeis, Babson, and Wellesley courses can count.

E:C



Additional credits earned with: ENGR3540 Computational Modeling, ENGR3410 CompArch; ENGR3220 HFID (if not design depth). SoftSys may be substituted with approved option. Can use courses from other institutions to count.

eDesign

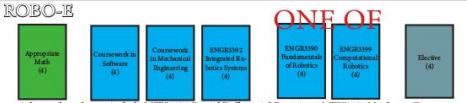


The Portfolio is optional. Design general requirement will not count for these requirements. Electives can be drawn from any area, including AHS/E! and design research.You may take classes at other institutions, but know that these will more often count for elective requirements.

eMatSci

You are directed to talk to faculty for specifics. At least 12 credits must be in 'MatSci Subjects'

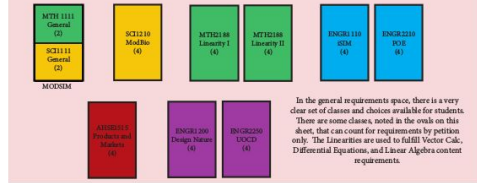
ROBO-E



Advanced math may include MTH3120 Partial Differential Equations, MTH317- Nonlinear Dynamics and Chaos, MTH2110 Discrete Mathematics. Software coursework may include ENGR2510 Software Design or appropriate. Mehcnial Engineering coursework may include ENGR2340 Dynamics, ENGR3345 Controls or approved. You are advised to talk with a robotics faculty.

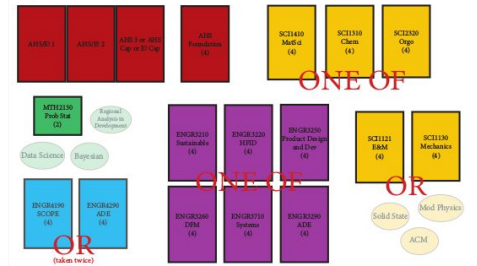
General Requirements

Required Classes

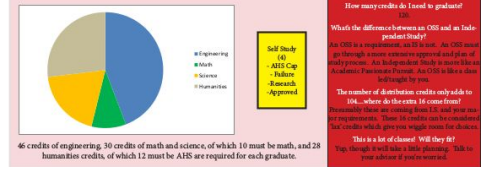


In the general requirements space, there is a very clear set of classes and choices available for students. There are some classes, noted in the ovals on this sheet, that can count for requirements by petition only. The Linearities are used to fulfill Vector Calc, Differential Equations, and Linear Algebra content requirements.

Required Choices



Other General Requirements



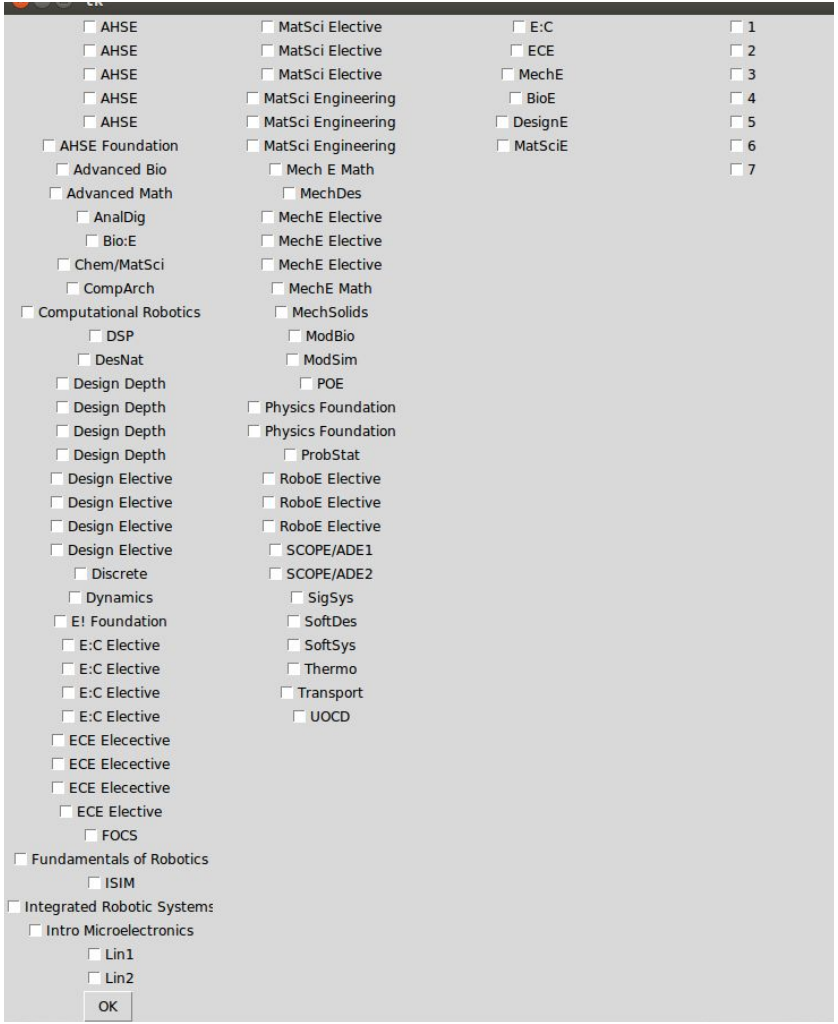
46 credits of engineering, 30 credits of math and science, of which 10 must be math, and 28 humanities credits, of which 12 must be AHS are required for each graduate.

How it will work

- User inputs their major, number of semesters remaining, and the list of classes they have taken so far using TKinter GUI
- Algorithm creates Student object that has a Major object and multiple Course objects
- Runs method to evenly assign requirements to student's remaining semesters
  - Algorithm: Assign randomly (using random), calculate difficulty, remember the assignment of classes with the most even spread
- Presents recommendation to student as a chart or visual

What we have done

- Made all of the courses and majors objects
- Created a GUI that allows for user input
- Implemented an algorithm that allows can pick a course plan based on user input


AHSE
AHSE
AHSE
AHSE
AHSE
AHSE Foundation
Advanced Bio
Advanced Math
AnalDig
Bio:E
Chem/MatSci
CompArch
Computational Robotics
DSP
DesNat
Design Depth
Design Depth
Design Depth
Design Depth
Design Elective
Design Elective
Design Elective
Design Elective
Discrete
Dynamics
E! Foundation
E:C Elective
E:C Elective
E:C Elective
E:C Elective
ECE Elecective
ECE Elecective
ECE Elecective
ECE Elective
FOCS
Fundamentals of Robotics
ISIM
Integrated Robotic Systems
Intro Microelectronics
Lin1
Lin2
OK
MatSci Elective
MatSci Elective
MatSci Elective
MatSci Engineering
MatSci Engineering
MatSci Engineering
Mech E Math
MechDes
MechE Elective
MechE Elective
MechE Elective
MechE Math
MechSolids
ModBio
ModSim
POE
Physics Foundation
Physics Foundation
ProbStat
RoboE Elective
RoboE Elective
RoboE Elective
SCOPE/ADE1
SCOPE/ADE2
SigSys
SoftDes
SoftSys
Thermo
Transport
UOCD
E:C
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BioE
DesignE
MatSciE
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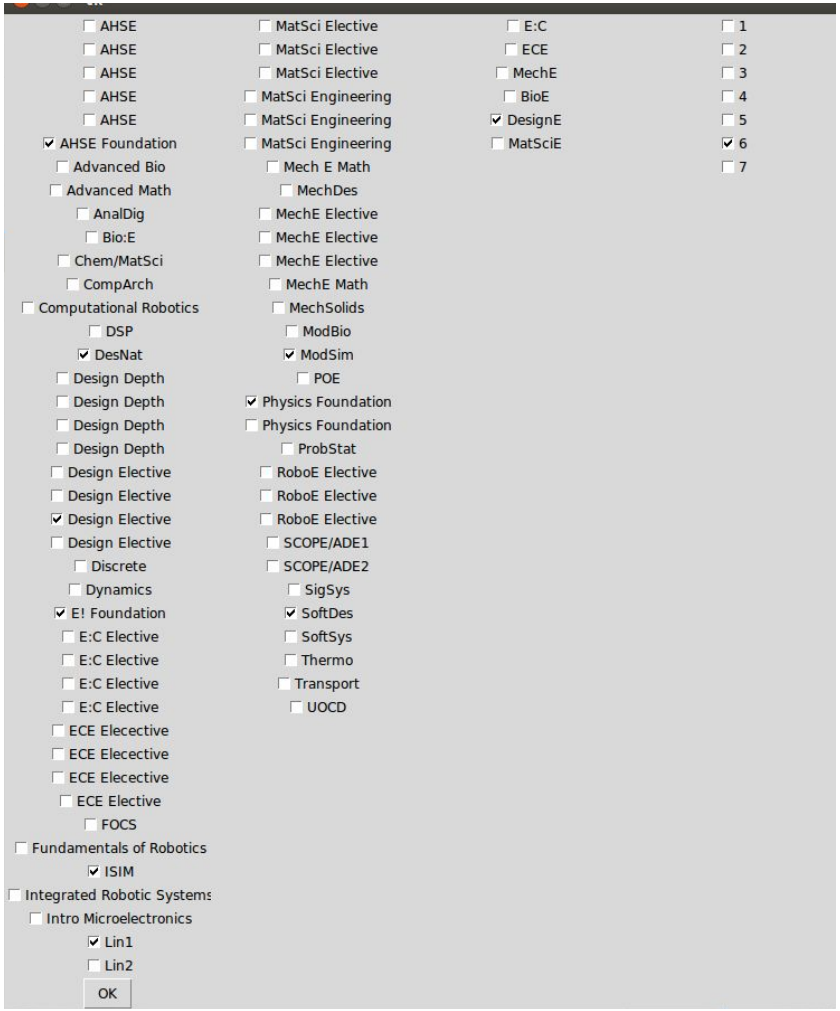
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FOCS
Fundamentals of Robotics
ISIM
Integrated Robotic Systems
Intro Microelectronics
Lin1
Lin2
OK
MatSci Elective
MatSci Elective
MatSci Elective
MatSci Engineering
MatSci Engineering
MatSci Engineering
Mech E Math
MechDes
MechE Elective
MechE Elective
MechE Elective
MechE Math
MechSolids
ModBio
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POE
Physics Foundation
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ProbStat
RoboE Elective
RoboE Elective
RoboE Elective
SCOPE/ADE1
SCOPE/ADE2
SigSys
SoftDes
SoftSys
Thermo
Transport
UOCD
E:C
ECE
MechE
BioE
DesignE
MatSciE
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AHSE', 'Design Depth'], 5: ['Design Elective', 'ProbStat', 'SCOPE/ADE2'], 6: ['S
COPE/ADE1', 'Design Depth'], 7: ['Design Depth', 'Design Elective', 'DesNat']}
```

What we are doing

- Making the output visually pleasing and easy to understand
- Improving the algorithm to consider more options
  - How many credits they need in each course coloring
  - Ability to weight spring or fall to more or less difficulty
  - Recommended semesters for courses

Future Work

- Implement interests for undecided majors
- Make the input easier to understand
- Implement output chart/visual
- Improve the readability and cleanliness of the code