**MEng in SYSTEMS ENGINEERING AND DESIGN (MEng/SE+D)**

**On-Campus Plan of Study Form**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Student Name:** |  | |  | **Student ID:** | | |  | | | | | | |
| **Date:** |  | |  | **Student Signature:** | | |  | | | | | | |
| **Program Advisor** |  | |  | Advisor Signature | | |  | | | | | | |
|  |  | |  |  | | | |  | | | | | | | |
| **Course Number** |  | **Course Name** | | |  | Credit Hours | | |  | Term/Year | | | | | |
|  |  |  | | |  |  | | |  | | **(fall,spring/summer or winter)** | **(2020, 2021, 2022, 2023)** | |
| **Systems Engineering + Design Core - 9 credit hours: Breadth** | | | | | | | | | | | | | |
|  |  |  | | |  |  | | |  | |  | | |
| ISD 520 |  | Introduction to Systems Engineering (Winter,Spring/Summer,Fall) | | |  | 3 | | |  | |  |  | |
| ISD 599C |  | Development & Verification of System Design Requirements (Fall) | | |  | 3 | | |  | |  |  | |
| ISD 599D |  | System Architecting, Concept Development and Embodiment Design (Winter) | | |  | 3 | | |  | |  |  | |
|  |  |  | | |  |  | | |  | |  | | |
| **Student-Selected Electives – 12-15 credits: Depth**  Students may take elective courses from across the university, provided the courses are relevant to the student’s field of study. At least **3 credits** must come from a **systems engineering elective** and at least **3 credits** must come from a design-focused elective. The remaining **6-9 credits** are at the **student’s discretion with program director approval**. | | | | | | | | | | | | | | |
| **Systems Engineering Electives:** | | | | | | | | | | | | |
| ISD 523 |  | Risk Analysis I (Winter) | | |  | 3 | | |  | |  |  | |
| ISD 599A |  | Software Systems Engineering | | |  | 3 | | |  | | TBD |  | |
| MFG 599B |  | Design for Six Sigma (Winter) | | |  | 3 | | |  | |  |  | |
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| **Design-focused Electives:** |  |  | | |  |  | | |  | |  | | |
| AEROSP 483 |  | Space Systems Design (Winter) | | |  | 3 | | |  | |  |  | |
| AEROSP 588 |  | Multidisciplinary Des Optimization (Winter) | | |  | 3 | | |  | |  |  | |
| CEE 480 |  | Design of Environmental Eng Systems(Fall) | | |  | 3 | | |  | |  |  | |
| DESCI 501/ME455 |  | Analytical Product Design (Fall) | | |  | 3 | | |  | |  |  | |
| EECS 561 |  | Design of Digital Control Systems (Winter) | | |  | 3 | | |  | |  |  | |
| ISD 528 |  | Advanced Design for Manufacturability(Fall) | | |  | 3 | | |  | |  |  | |
| ME555/MFG 555 |  | Design Optimization (Winter) | | |  | 3 | | |  | |  |  | |
| NA&ME 570 |  | Marine Design (Winter) | | |  | 3 | | |  | |  |  | |
| NERS 561 |  | Nuclear Core Design (Winter) | | |  | 3 | | |  | |  |  | |
| **Other electives available:**[*Automotive Engineering*](http://isd.engin.umich.edu/degree-programs/automotive-engineering/index.htm)*,* [*Energy Systems*](http://isd.engin.umich.edu/degree-programs/energy-systems-engineering/index.htm)*,* [*Mfg Systems*](http://isd.engin.umich.edu/degree-programs/manufacturing-engineering/index.htm)*, or* [*College of Engineering Course Guides*](https://bulletin.engin.umich.edu/courses/) | | | | | | | | | | | | | |
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| **Practicum and Fundamentals – 6-9 credit: Practical Application**   1. 9-credit Practicum   (2) 6-credit Practicum and 3 credits for a Fundamentals Course (pre-approved 400-Level or above engineering or  science course appropriate for a student’s plan of study.  Choose an item. | | | | | | | | | | | | | |
| ISD 503 |  | Practicum | | |  | 6 or 9 | | |  | |  |  | |  | | |  |
|  |  | A 3 credit course is required if choosing 6 credit Practicum | | |  | 3 | | |  | |  |  | |  | | |  |

**Master’s Degree Requirements:**

Requires 30 Total credit hours of course work with:

* + At least 24 credit**\*** hours in letter graded (A-E) courses
  + At most 6 credit hours total may be in letter graded courses at the 400-level.
  + At least 6 credit hours toward a practicum (graded Satisfactory/Unsatisfactory)
  + Minimum GPA of 3.0/4.0 (B average) must be maintained at all times.

**\*** Students considering a 9 credit Practicum should first consult with the Systems Engineering Graduate Coordinator.

You must seek and obtain approval for your Plan of Study from the MEng/SE+D Program Office. To request exceptions to the core courses and electives, approval must be obtained from the MEng/SE+D Program Director and then the approval must be submitted via email to the MEng/SE+D Program Office ([isdsed-gradcoord@umich.edu](mailto:isdsed-gradcoord@umich.edu)).

**Course Requirements and Plan of Study:**

**Systems Engineering + Design - 9 credit hours: Breadth**

* + ISD 520: Introduction to Systems Engineering (Winter, Spring/Summer, or Fall)
  + ISD 599C: Development and Verification of System Design Requirements (Fall)
  + ISD 599D: System Architecting, Concept Development and Embodiment Design (Winter)

**Student-Selected Elective – 12-15 credits: Depth**

Students may take elective courses from across the university, provided the courses are relevant to the student’s field of study and are offered online. At least **3 credits** must come from a **systems engineering elective** and at least **3 credits** must come from a design-focused elective. The remaining **6-9 credits** are at the **student’s discretion with program director approval**.

**Systems Engineering Electives**

* + ISD 523: Risk Analysis I (Winter)
  + ISD 599A: Software Systems Engineering (TBD)
  + MFG 599B: Design for Six Sigma (Winter)

**Design-Focused Elective**

* + AEROSP 483: Space Systems Design (Winter)
  + AEROSP 588: Multidisciplinary Design Optimization (Winter)
  + CEE 480: Design of Environmental Engineering Systems (Fall)
  + DESCI 501: Analytical Product Design (Fall)
  + EECS 561: Design of Digital Control Systems (Winter)
  + ISD 528: Advanced Design for Manufacturability (Fall)
  + MECHENG/MFG 555: Design Optimization (Winter)
  + NA 570: Marine Design (Winter)
  + NERS 561: Nuclear Core Design (Winter)

**Other electives available**

* + [*Automotive Engineering*](http://isd.engin.umich.edu/degree-programs/automotive-engineering/index.htm)*,* [*Manufacturing Systems*](http://isd.engin.umich.edu/degree-programs/manufacturing-engineering/index.htm)*,* [*Energy Systems*](http://isd.engin.umich.edu/degree-programs/energy-systems-engineering/index.htm)*, or* <http://www.engin.umich.edu/college/academics/bulletin/courses/>

Note: Students may develop their own specialties based on their interests.

**Practicum – 6-9 credit: Practical Application**

1. 9-credit Practicum

OR

(2) 6-credit Practicum and 3 credits in a pre-approved 400-level or above engineering or science course appropriate for a student’s plan of study.