# CIVIL ENGINEERING MAJOR 

Program Tracking Sheet
Effective for students entering AY 2023-2024

| Name: | Class Year: |
| :--- | :--- |
| Advisor: | $2^{\text {nd }}$ Major: |

NOTES: Minimum total academic credit $=15$ units
Residency Req.: Min. of 8 units must be completed at WPI
HUMANITIES AND ARTS ( $6 / 3$ unit)
All 5 HUA courses must be completed before beginning the Inquiry Seminar or Practicum.

| Depth Component <br> Students must complete at least three thematically-related courses prior to the culminating Inquiry Seminar or Practicum in the same thematic area. At least one of the three courses should be at the 2000-level or above. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | Course | Term | Grade | Units |
| 1 |  |  |  | 1/3 |
| 2 |  |  |  | 1/3 |
| 3 |  |  |  | 1/3 |
| 4 | HU 3900 or HU 3910 |  |  | 1/3 |
| Breadth Component <br> Students must take at least one course outside the grouping in which they complete their depth component. To identify breadth, courses are grouped in the following manner. <br> i. art/art history, drama/theatre, and music (AR, EN/TH, MU); <br> ii. foreign languages (AB, CN, EN, GN, SP); <br> iii. literature and writing rhetoric (EN, WR, RH); <br> iv. history and international studies ( $\mathrm{HI}, \mathrm{HU}, \mathrm{INTL}$ ); <br> v. philosophy and religion (PY, RE). <br> Exception: May take all six courses in a foreign language |  |  |  |  |
|  |  |  |  |  |
| 5 |  |  |  | 1/3 |
| Humanities Elective |  |  |  |  |
| 6 |  |  |  | 1/3 |
| WELLNESS AND PHYSICAL EDUCATION (4 WPE classes $=1 / 3$ unit) |  |  |  |  |
| 7 |  |  |  | 1/12 |
|  |  |  |  | 1/12 |
|  |  |  |  | 1/12 |
|  |  |  |  | 1/12 |

SOCIAL SCIENCE (2/3 unit) ECON, ENV, GOV, PSY, SD, SOC, SS,
STS, DEV and ID2050


THE INTERACTIVE QUALIFYING PROJECT (1 unit)

| 10 |  |  |  | $1 / 3$ |
| :---: | :--- | :--- | :--- | :--- |
| 11 |  |  |  | $1 / 3$ |
| 12 |  |  |  | $1 / 3$ |

FREE ELECTIVES (1 unit)

| 13 |  |  |  | $1 / 3$ |
| :---: | :--- | :--- | :--- | :--- |
| 14 |  |  |  | $1 / 3$ |
| 15 |  |  |  | $1 / 3$ |

## MATHEMATICS AND BASIC SCIENCE (4 units)

MATHEMATICS (7/3 units) Courses with prefix: MA
Must include differential and integral calculus, differential equations, and probability and statistics.

| 16 | MA 1020/1021 (Calculus 1) |  |  | $1 / 3$ |
| :--- | :--- | :--- | :--- | :--- |
| 17 | MA 1120/1022 (Calculus 2) |  |  | $1 / 3$ |
| 18 | MA 1023 (Calculus 3) |  |  | $1 / 3$ |
| 19 | MA 1024 (Calculus 4) |  |  | $1 / 3$ |
| 20 | MA 2051 (Differential Equations) |  |  | $1 / 3$ |
| 21 | MA 2611 (Statistics) |  |  | $1 / 3$ |
| 22 | MA 2621 (Probability) |  |  | $1 / 3$ |

BASIC SCIENCE ( $4 / 3$ units)
Must include at least $1 / 3$ unit in physics (PH), $2 / 3$ unit in chemistry (CH), and $1 / 3$ unit in an additional science area (BB or GE).

| 23 | PH |  |  | $1 / 3$ |
| :--- | :--- | :--- | :--- | :--- |
| 24 | CH |  |  | $1 / 3$ |
| 25 | CH |  |  | $1 / 3$ |
| 26 | BB or GE |  |  | $1 / 3$ |

## ADDITIONAL MATHEMATICS AND BASIC SCIENCE (1/3 units)

Must include $1 / 3$ unit elective from BB, CH, GE, MA, PH, or FY courses that satisfy $\mathrm{BB}, \mathrm{CH}, \mathrm{GE}, \mathrm{MA}$ or PH

| 27 |  |  |  | $1 / 3$ |
| :--- | :--- | :--- | :--- | :--- |

## ENGINEERING SCIENCE AND DESIGN (6 units)

## FUNDAMENTAL ENGINEERING SCIENCE ( $6 / 3$ units)

Must include $2 / 3$ units in solid mechanics, $1 / 3$ unit in soil mechanics, $1 / 3$ unit in fluid mechanics, and $2 / 3$ units of engineering science from the following list: CE 2002, ES 2001, ES 2503, ES 2800, ES 3001, and ES 3002.

| 28 | Solid mechanics (CE 2000/ES 2501) |  |  | $1 / 3$ |
| :--- | :--- | :--- | :--- | :--- |
| 29 | Solid mechanics (CE 2001/ES 2502) |  |  | $1 / 3$ |
| 30 | Soil mechanics (CE 3041) |  |  | $1 / 3$ |
| 31 | Fluid mechanics (ES 3004) |  |  | $1 / 3$ |
| 32 | Engineering science |  |  |  |
| 33 | Engineering science |  |  |  |

CIVIL ENGINEERING - CORE ( $4 / 3$ units)
Must include $4 / 3$ units in Core Civil Engineering, including Structural Engineering, Project Management, Transportation Engineering, and Environmental Engineering (fulfilled by CE 3010, CE 3020, CE 3050, CE 3059).

| 34 | Structural engineering (CE 3010) |  |  | $1 / 3$ |
| :--- | :--- | :--- | :--- | :--- |
| 35 | Project management (CE 3020 |  |  | $1 / 3$ |
| 36 | Transportation engineering (CE 3050) |  |  | $1 / 3$ |
| 37 | Environmental engineering (CE 3059) |  |  | $1 / 3$ |

CIVIL ENGINEERING - DEPTH (3/3 units)
Must include $3 / 3$ units of civil engineering depth courses at the 3000 -level or above (fulfilled by all CE courses not listed elsewhere, with at least $2 / 3$ from one sub-discipline - see catalog for more information on course options).

| 38 |  |  |  | $1 / 3$ |
| :--- | :--- | :--- | :--- | :--- |
| 39 |  |  |  | $1 / 3$ |
| 40 |  |  |  | $1 / 3$ |

CIVIL ENGINEERING LABORATORY EXPERIENCE (2/3 unit)
Must include $2 / 3$ units of civil engineering laboratory experience (fulfilled by CE 2020, CE 3026, CE 4054, CE 4060).

| 41 |  |  |  | $1 / 3$ |
| :--- | :--- | :--- | :--- | :--- |
| 42 |  |  |  | $1 / 3$ |

MAJOR QUALIFYING PROJECT \& CAPSTONE DESIGN EXPERIENCE
(3/3 units MQP; $1 / 3$ unit capstone design experience)

| 43 |  |  |  | $1 / 3$ |
| :--- | :--- | :--- | :--- | :--- |
| 44 |  |  |  | $1 / 3$ |
| 45 |  |  |  | $1 / 3$ |

## CIVIL ENGINEERING PROGRAM CHART

## STUDENTS EARNING AN ABET-ACCREDITED B.S. DEGREE IN CIVIL ENGINEERING MUST COMPLETE 15 UNITS OF STUDY, DISTRIBUTED AS FOLLOWS:

UNIVERSITY REQUIREMENTS (4 units)

| Humanities and <br> Arts | Interactive <br> Qualifying <br> Project | Social Sciences | Physical <br> Education |  |
| :---: | :---: | :---: | :---: | :---: |
| 2 units | 1 unit | $2 / 3$ unit | $1 / 3$ unit |  |
| See WPI Requirements |  |  |  |  |

FREE ELECTIVES (1 unit)
Free Electives
Students are encouraged to consider additional CE courses (e.g., CE 1030, CE 3030, CE breadth) or other engineering courses.

## MATHEMATICS AND BASIC SCIENCE (4 units)

|  <br> Integral <br> Calculus | Differential <br> Equations | Statistics | Probability | Chemistry | Physics | Additional <br> Science | Math/ <br> Science <br> Elective |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $4 / 3$ unit | $1 / 3$ unit | $1 / 3$ unit | $1 / 3$ unit | $2 / 3$ unit | $1 / 3$ unit | $1 / 3$ unit | $1 / 3$ unit |
| MA 1020/1021 <br> MA 1022 | MA 2051 | MA 2611 | MA 2621 | CH 1010 | PH 1110/1111 | GE or BB | MA, CH, <br> MA 1023 <br> MA 1024 |
|  |  |  | CH 1020 |  |  | PH, GE, or <br> BB |  |

## ENGINEERING SCIENCE AND DESIGN (6 units)

| Fundamental Engineering Science |  | Core CE | Labs | MQP |
| :---: | :---: | :---: | :---: | :---: |
| 4/3 unit | $2 / 3$ unit | $4 / 3$ unit | $2 / 3$ unit | 1 unit |
| CE 2000 (or ES 2501) | CE 2002 | CE 3010 | CE 2020 | Including $1 / 3$ unit |
| CE 2001 (or ES 2502) | ES 2001 | CE 3020 | CE 3026 | capstone design |
| CE 3041 | ES 2503 | CE 3050 | CE 4054 |  |
| ES 3004 | ES 2800 | CE 3059 | CE 4060 |  |
|  | ES 3001 |  |  |  |


| CE Depth |  |  |  |
| :---: | :---: | :---: | :---: |
| 3/3 unit (at least 2/3 unit from one sub-discipline) |  |  |  |
| Structural and Geotechnical | Environmental Engineering | $\frac{\text { Transportation Engineering }}{\text { and Water Resources }}$ | $\frac{\text { Construction Engineering }}{\text { and Development }}$ |
| Engineering | and Project Management |  |  |
| CE 3006 | CE 3060 | CE 3031 | CE 3022 |
| CE 3008 | CE 3061 | CE 3051 | CE 3025 |
| CE 3031 | CE 3062 | CE 3070 | CE 3031 |
| CE 3044 | CE 3074 | CE 3074 | CE 3044 |
| CE 4007 | CE 4061 | CE 4061 |  |
| CE 4017 | CE/CHE 4063 | CE 4071 |  |
|  | CE 4600 |  |  |

