

**CIVIL ENGINEERING MAJOR**  
**Program Tracking Sheet**  
 Effective for students entering AY 2020-2021

|          |                        |
|----------|------------------------|
| Name:    | Class Year:            |
| Advisor: | 2 <sup>nd</sup> 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.

| <b>Depth Component</b>  |                    |      |       |       |
|---|--------------------|------|-------|-------|
| 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   |

| <b>Breadth Component</b>  |  |  |  |     |
|---|--|--|--|-----|
| 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. |  |  |  |     |
| i. art/art history, drama/theatre, and music (AR, EN/TH, MU);   |  |  |  |     |
| ii. foreign languages (AB, CN, EN, GN, SP);   |  |  |  |     |
| iii. literature and writing rhetoric (EN, WR, RH);  |  |  |  |     |
| iv. history and international studies (HI, HU, INTL);   |  |  |  |     |
| v. philosophy and religion (PY, RE).  |  |  |  |     |
| Exception: May take all six courses in a foreign language   |  |  |  |     |
| 5   |  |  |  | 1/3 |
| <b>Humanities Elective</b>  |  |  |  |     |
| 6   |  |  |  | 1/3 |

| <b>PHYSICAL EDUCATION (4 PE classes = 1/3 unit)</b> |  |  |  |      |
|---|--|--|--|------|
| 7   |  |  |  | 1/12 |
|   |  |  |  | 1/12 |
|   |  |  |  | 1/12 |
|   |  |  |  | 1/12 |

| <b>SOCIAL SCIENCE (2/3 unit) ECON, ENV, GOV, PSY, SD, SOC, SS, STS, DEV and ID2050</b> |  |  |  |     |
|--|--|--|--|-----|
| 8  |  |  |  | 1/3 |
| 9  |  |  |  | 1/3 |

| <b>THE INTERACTIVE QUALIFYING PROJECT (1 unit)</b> |  |  |  |     |
|--|--|--|--|-----|
| 10   |  |  |  | 1/3 |
| 11   |  |  |  | 1/3 |
| 12   |  |  |  | 1/3 |

| <b>FREE ELECTIVES (1 unit)</b> |  |  |  |     |
|--------------------------------|--|--|--|-----|
| 13                             |  |  |  | 1/3 |
| 14                             |  |  |  | 1/3 |
| 15                             |  |  |  | 1/3 |

| <b>MATHEMATICS AND BASIC SCIENCE (4 units)</b>   |                                  |  |  |     |
|--|----------------------------------|--|--|-----|
| <b>MATHEMATICS (7/3 units) Courses with prefix: MA</b>   |                                  |  |  |     |
| 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 |

| <b>BASIC SCIENCE (4/3 units)</b>   |          |  |  |     |
|--|----------|--|--|-----|
| 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 |

| <b>ADDITIONAL MATHEMATICS AND BASIC SCIENCE (1/3 units)</b>   |  |  |  |     |
|---|--|--|--|-----|
| Must include 1/3 unit elective from BB, CH, GE, MA, PH, or FY courses that satisfy BB, CH, GE, MA or PH |  |  |  |     |
| 27  |  |  |  | 1/3 |

| <b>ENGINEERING SCIENCE AND DESIGN (6 units)</b>   |                                   |  |  |     |
|---|-----------------------------------|--|--|-----|
| <b>FUNDAMENTAL ENGINEERING SCIENCE (6/3 units)</b>  |                                   |  |  |     |
| 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               |  |  | 1/3 |
| 33  | Engineering science               |  |  | 1/3 |

| <b>CIVIL ENGINEERING – CORE (4/3 units)</b>  |                                      |  |  |     |
|--|--------------------------------------|--|--|-----|
| 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 |

| <b>CIVIL ENGINEERING – DEPTH (3/3 units)</b>   |  |  |  |     |
|--|--|--|--|-----|
| 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 |

| <b>CIVIL ENGINEERING LABORATORY EXPERIENCE (2/3 unit)</b>  |  |  |  |     |
|--|--|--|--|-----|
| 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 |

| <b>MAJOR QUALIFYING PROJECT &amp; CAPSTONE DESIGN EXPERIENCE (3/3 units MQP; 1/3 unit capstone design experience)</b> |  |  |  |     |
|---|--|--|--|-----|
| 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 Arts               | Interactive Qualifying Project | Social Sciences | Physical Education |
| 2 units                           | 1 unit                         | 2/3 unit        | 1/3 unit           |
| See WPI Requirements              |                                |                 |                    |

| FREE ELECTIVES (1 unit)  |
|--|
| Free Electives   |
| 1 unit   |
| 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)       |                        |            |             |                    |              |                    |                             |
|---|------------------------|------------|-------------|--------------------|--------------|--------------------|-----------------------------|
| Differential & Integral Calculus              | Differential Equations | Statistics | Probability | Chemistry          | Physics      | Additional Science | Math/ Science 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<br>MA 1023<br>MA 1024 | MA 2051                | MA 2611    | MA 2621     | CH 1010<br>CH 1020 | PH 1110/1111 | GE or BB           | MA, CH,<br>PH, GE, or<br>BB |

| ENGINEERING SCIENCE AND DESIGN (6 units) |         |          |         |          |                                    |
|--|---------|----------|---------|----------|------------------------------------|
| Fundamental Engineering Science          |         | Core CE  |         | Labs     | MQP                                |
| 4/3 unit                                 |         | 2/3 unit |         | 2/3 unit | 1 unit                             |
| CE 2000 (or ES 2501)                     | CE 2002 | CE 3010  | CE 2020 | CE 2020  | Including 1/3 unit capstone design |
| CE 2001 (or ES 2502)                     | ES 2001 | CE 3020  | CE 3026 | CE 3026  |                                    |
| CE 3041                                  | ES 2503 | CE 3050  | CE 4054 | CE 4054  |                                    |
| ES 3004                                  | ES 2800 | CE 3059  | CE 4060 | CE 4060  |                                    |
|  | ES 3001 |          |         |          |                                    |
|  | ES 3002 |          |         |          |                                    |

| CE Depth   |  |   |  |
|--|--|---|--|
| 3/3 unit (at least 2/3 unit from one sub-discipline) |  |   |  |
| <u>Structural and Geotechnical Engineering</u>       | <u>Environmental Engineering and Water Resources</u> | <u>Transportation Engineering and Development</u> | <u>Construction Engineering and Project Management</u> |
| 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  |   |  |