

# CIVIL ENGINEERING (GIEP) - CLASS OF 2021

## Freshman Year Fall Semester

| Course Code | Description                                      | Cr        |  |
|-------------|--|-----------|--|
| CHM 101     | General Chemistry Lec I (A1)                     | 3         |  |
| CHM 102     | General Chemistry I Lab                          | 1         |  |
| EGR 105     | Foundations of Engineering I (A4)                | 1         |  |
| MTH 141     | Intro Calculus with Analytical Geometry (A1, B3) | 4         |  |
| ECN 201     | Principles of Microeconomics (A2)                | 3         |  |
| GER 111     | Intensive Beginning German I                     | 4         |  |
|             |  | <b>16</b> |  |

## Freshman Year Spring Semester

| Course Code | Description                           | Cr        |  |
|-------------|---------------------------------------|-----------|--|
| EGR 106     | Foundations of Engineering II (A4)    | 2         |  |
| MTH 142     | Intermed Calc with Analytic Geom (B3) | 4         |  |
| PHY 203     | Elementary Physics I (A1)             | 3         |  |
| PHY 273     | Elementary Physics Lab I (A1)         | 1         |  |
| GEO 103     | Understanding the Earth (A1, B4)      | 4         |  |
| GER 112     | Intensive Beginning German II         | 4         |  |
|             |                                       | <b>18</b> |  |

## Sophomore Year Fall Semester

| Course Code | Description                                | Cr        |  |
|-------------|--|-----------|--|
| CVE 205     | Intro to Civil Engineering Tools           | 2         |  |
| MCE 262     | Statics                                    | 3         |  |
| MTH 243     | Calculus for Funcs. of Sev. Vars. (A1, B3) | 3         |  |
| PHY 204     | Elementary Physics II (A1)                 | 3         |  |
| PHY 274     | Elementary Physics Lab II (A1)             | 1         |  |
| WRT 332     | Technical Writing (B1, B2)                 | 3         |  |
| GER 113     | Intensive Intermediate German I            | 4         |  |
|             |  | <b>19</b> |  |

## Sophomore Year Spring Semester

| Course Code | Description                | Cr        |  |
|-------------|----------------------------|-----------|--|
| CHM 112     | General Chemistry II Lec   | 3         |  |
| CVE 220     | Mechanics of Materials     | 3         |  |
| CVE 230     | Mechanics of Materials Lab | 1         |  |
| MCE 263     | Dynamics                   | 3         |  |
| MTH 244     | Differential Equations     | 3         |  |
| STA 409     | Statistics                 | 3         |  |
| GER 104*    | Intermediate German II     | 3         |  |
|             |                            | <b>19</b> |  |

*\*Or GER 114 if you can fit 4 credits*

## Junior Year Fall Semester

| Course Code | Description                  | Cr        |  |
|-------------|------------------------------|-----------|--|
| CVE 346     | Transportation Engineering   | 3         |  |
| CVE 354     | Structural Engineering       | 3         |  |
| CVE 374     | Environmental Engineering    | 3         |  |
| CVE 381     | Geotechnical Engineering     | 3         |  |
| CVE 382     | Geotechnical Engineering Lab | 1         |  |
| MCE 354     | Fluid Mechanics              | 3         |  |
| GER 205     | Conversation and Composition | 3         |  |
|             |                              | <b>19</b> |  |

## Junior Year Spring Semester

| Course Code | Description                                | Cr        |  |
|-------------|--|-----------|--|
| CVE 347     | Highway Engineering                        | 3         |  |
| CVE 348     | Highway Engineering Lab                    | 1         |  |
| CVE 370     | Hydraulic Engineering                      | 3         |  |
| CVE 375     | Hydraulic Engineering Lab                  | 1         |  |
| ISE 304     | Engineering Economics and Project Planning | 3         |  |
|             | General Education Outcome(s)*              | 3         |  |
| GER 206     | Conversation and Composition               | 3         |  |
|             |  | <b>17</b> |  |

## Semester Abroad

| Course Code        | Description                              | Cr        |  |
|--------------------|--|-----------|--|
| GER/EGR 411        | Technical German/Professional Elective** | 3         |  |
| GER 3XX            |  | 4         |  |
| GER 3XX or GER 4XX |  | 3         |  |
|                    | General Education Outcome(s)*            | 3         |  |
|                    | General Education Outcome(s)*            | 3         |  |
|                    |  | <b>16</b> |  |

## International Internship Semester

| Course Code | Description           | Cr         |  |
|-------------|-----------------------|------------|--|
| GER 315-316 | Language Study Abroad | 3-6        |  |
|             |                       |            |  |
|             |                       |            |  |
|             |                       |            |  |
|             |                       |            |  |
|             |                       | <b>3-6</b> |  |

## Senior Year Fall Semester

| Course Code | Description                              | Cr        |  |
|-------------|--|-----------|--|
| CVE 355     | Structural Engineering Lab               | 1         |  |
| CVE 400     | Civil Engineering Licensure              | 1         |  |
| CVE 465     | Analysis & Design of Concrete Structures | 3         |  |
| CVE 483     | Foundation Engineering                   | 3         |  |
| CVE 497     | Civil Engineering Design I               | 2         |  |
|             | General Education Outcome(s)*            | 3         |  |
|             | Approved Professional Elective**         | 3         |  |
| GER 4XX     |  | 3         |  |
|             |  | <b>19</b> |  |

## Senior Year Spring Semester

| Course Code | Description                      | Cr        |  |
|-------------|----------------------------------|-----------|--|
| CVE 498     | Civil Engineering Design II (D1) | 3         |  |
|             | Approved Professional Elective** | 3         |  |
|             | Approved Professional Elective** | 3         |  |
|             | Approved Professional Elective** | 3         |  |
|             | General Education Outcome(s)*    | 3         |  |
| GER 4XX     |                                  | 3         |  |
| ---         | Take FE Examination***           | ---       |  |
|             |                                  | <b>18</b> |  |

**Specified Math, Science, and Engineering Courses**

| Introductory Engineering |              |    |       |    |      |
|--------------------------|--------------|----|-------|----|------|
| Sem                      | Course       | Cr | Grade | QP | Note |
|                          | EGR 105 (A4) | 1  |       |    |      |
|                          | EGR 106 (A4) | 2  |       |    |      |
|                          |              | 3  |       |    |      |

| Mathematics |                   |    |       |    |      |
|-------------|-------------------|----|-------|----|------|
| Sem         | Course            | Cr | Grade | QP | Note |
|             | MTH 141 (A1 & B3) | 4  |       |    |      |
|             | MTH 142 (B3)      | 4  |       |    |      |
|             | MTH 243 (A1 & B3) | 3  |       |    |      |
|             | MTH 244           | 3  |       |    |      |
|             | STA 409           | 3  |       |    |      |
|             |                   | 17 |       |    |      |

| Natural Sciences |                   |    |       |    |      |
|------------------|-------------------|----|-------|----|------|
| Sem              | Course            | Cr | Grade | QP | Note |
|                  | CHM 101 (A1)      | 3  |       |    |      |
|                  | CHM 102           | 1  |       |    |      |
|                  | CHM 112           | 3  |       |    |      |
|                  | GEO 103 (A1 & B4) | 4  |       |    |      |
|                  | PHY 203 (A1)      | 3  |       |    |      |
|                  | PHY 273 (A1)      | 1  |       |    |      |
|                  | PHY 204 (A1)      | 3  |       |    |      |
|                  | PHY 274 (A1)      | 1  |       |    |      |
|                  |                   | 19 |       |    |      |

| ****Professional Elective |        |    |       |    |      |
|---------------------------|--------|----|-------|----|------|
| Sem                       | Course | Cr | Grade | QP | Note |
|                           |        | 3  |       |    |      |
|                           |        | 3  |       |    |      |
|                           |        | 3  |       |    |      |
|                           |        | 3  |       |    |      |
|                           |        | 3  |       |    |      |
|                           |        | 15 |       |    |      |

| Engineering Science and Design (Major) |                    |    |       |    |      |
|--|--------------------|----|-------|----|------|
| Sem                                    | Course             | Cr | Grade | QP | Note |
|  | CVE 205            | 2  |       |    |      |
|  | CVE 220            | 3  |       |    |      |
|  | CVE 230            | 1  |       |    |      |
|  | CVE 346            | 3  |       |    |      |
|  | CVE 347            | 3  |       |    |      |
|  | CVE 348            | 1  |       |    |      |
|  | CVE 354            | 3  |       |    |      |
|  | CVE 355            | 1  |       |    |      |
|  | CVE 370            | 3  |       |    |      |
|  | CVE 374            | 3  |       |    |      |
|  | CVE 375            | 1  |       |    |      |
|  | CVE 381            | 3  |       |    |      |
|  | CVE 382            | 1  |       |    |      |
|  | CVE 400            | 3  |       |    |      |
|  | CVE 465            | 1  |       |    |      |
|  | CVE 483            | 3  |       |    |      |
|  | CVE 497 [capstone] | 2  |       |    |      |
|  | CVE 498 [capstone] | 3  |       |    |      |
|  | ISE 304            | 3  |       |    |      |
|  | MCE 262            | 3  |       |    |      |
|  | MCE 263            | 3  |       |    |      |
|  | MCE 354            | 3  |       |    |      |
|  |                    | 52 |       |    |      |

| **Attempt Fundamentals of Engineering (FE) Exam |   |     |     |     |  |
|---|---|-----|-----|-----|--|
| ---   | <input type="checkbox"/> Oct/Nov <input type="checkbox"/> Jan/Feb | --- | --- | --- |  |
| ---   | <input type="checkbox"/> Apr/May <input type="checkbox"/> Jul/Aug | --- | --- | --- |  |

\* **General Education Outcomes:** at least 40 credits must be completed. (A1-D1) must be met by at least three credits. A single course may satisfy one or two outcomes, and at least one course must be a "Grand Challenge". No more than twelve credits can be from the same course code except HPR (ie: only four 3-credit GER classes OR three 4-credit GER classes may be used to fulfill General Education Outcomes). General education courses may also be used to meet requirements of your major(s) or minor(s) when appropriate.

\*\***Professional Electives:** Three (3) of the fifteen (15) credits must be selected from the following courses: CVE 470, 471, 475, 477. The remaining twelve (12) can be any 300-level and above CVE courses and may include three (3) credits from the following courses: CHE 333, ELE 220, MCE 341, or MTH 251. A maximum of six (6) credits of Special Problems (CVE 491 or 492) may be taken.

\*\*\***Fundamentals of Engineering Exam:** Official NCEES proof of having taken the exam is required.

| German Language Requirements                                  |  |    |    |    |  |
|---|--|----|----|----|--|
| GER 101, 102, & 111 will not count toward major requirements. |  |    |    |    |  |
| Sem   | Course   | Cr | Gr | QP |  |
|   | GER ____   |    |    |    |  |
|   | GER ____   |    |    |    |  |
|   | GER ____   |    |    |    |  |
|   | GER ____   |    |    |    |  |
|   | GER ____   |    |    |    |  |
|   | GER ____   |    |    |    |  |
|   | GER ____   |    |    |    |  |
|   | GER ____   |    |    |    |  |
|   | GER ____   |    |    |    |  |
|   | GER 4 ____                                       | 3  |    |    |  |
|   | 6 Credits in Literature, at least 3 at 400-level |    |    |    |  |
|   | GER ____   | 3  |    |    |  |
|   | GER 4 ____                                       | 3  |    |    |  |
|   |  | 30 |    |    |  |

| General Education Outcome Audit  |                         |        |
|--|-------------------------|--------|
|  | Course                  | Credit |
| <b>Knowledge</b>   |                         |        |
| A1. STEM   | CHM & PHY (see above)   | 11     |
| A2. Social & Behavioral Sciences   | ECN 201                 | 3      |
| A3. Humanities   | GER 205/206 (suggested) | 3      |
| A4. Arts & Design  | EGR 105 & 106           | 3      |
| <b>Competences</b>   |                         |        |
| B1. Write Effectively  | WRT 332                 |        |
| B2. Communicate Effectively  | WRT 332                 |        |
| B3. Mathematical, statistical, or computational strategies                     | MTH (see above)         | 11     |
| B4. Information literacy   | GEO 103                 |        |
| <b>Responsibilities</b>  |                         |        |
| C1. Civic knowledge & responsibilities   |                         |        |
| C2. Global responsibilities  | GER 205/206 (suggested) | 3      |
| C3. Diversity and Inclusion  |                         |        |
| <b>Inegrate &amp; Apply</b>  |                         |        |
| D1. Ability to synthesize  | CVE 498                 | 3      |
| <b>Grand Challenge</b>   |                         |        |
| G. Check that at least one course of your 40 credits is an approved "G" course |                         |        |
| Total General Education Outcome Credits  |                         | 40     |