**Cal Poly Humboldt Environmental Resources Engineering (ERE) Graduation Contract**

**for Second Bachelor's Students**

Double-click in the gray text boxes below to fill:

**Name:** **ID#:** **Email:**

**Major Advisor:** **Date:**

Please consult with your major advisor if you have questions as you complete the agreement below and/or if you plan to propose any course substitutions. All requirements for this major, including detailed course descriptions and GE requirements, can be found in the [Cal Poly Humboldt catalog](https://catalog.humboldt.edu/preview_program.php?catoid=10&poid=5868&returnto=1615).

Each of the courses listed below is required for the ERE major. Please UNCHECK the box (double-click and select ‘not checked’) next to any requirement for which you are proposing to substitute another class or classes - either from Cal Poly Humboldt or another institution. For each unchecked box, you’ll provide details on your substitutions in the next section.

A checked box indicates that you plan to complete the requirement by taking the specific Humboldt course listed.

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| **Lower Division (LD - 49 Units)** | **Upper Division (UD - 35 Units)** |
| BIOL 105 – Principles of Biology (4) | ENGR 313 - Systems Analysis (3) |
| CHEM 109 - General Chemistry I (5) | ENGR 322 - Risk and Data Analysis for Engineers (4) |
| CHEM 110 - General Chemistry II (5) | ENGR 326 - Computational Methods for Engr III (3) |
| ENGR 115 - Introduction to Engineering (3) | ENGR 330 - Mechanics and Science of Materials (3) |
| ENGR 205 - Introduction to Design (3) | ENGR 331 - Thermodynamics and Energy Systems I (3) |
| ENGR 210 - Solid Mechanics: Statics (3) | ENGR 333 - Fluid Mechanics (4) |
| ENGR 225 - Computational Methods for Engr I (3) | ENGR 351 - Introduction to Water Quality (3) |
| ENGR 226 - Computational Methods for Engr II (3) | ENGR 410 - Env Health and Impact Assessment (3) |
| MATH 109 - Calculus I (4) | ENGR 416 - Transport Phenomena (3) |
| MATH 110 - Calculus II (4) | ENGR 440 - Hydrology (3) |
| MATH 210 - Calculus III (4) | ENGR 492W - Capstone Design Project (3) |
| PHYX 109 - General Physics A: Mechanics (4) |  |
| PHYX 211 - General Physics C: Electricity, Magnetism (4) |  |

For any unchecked requirement above, please indicate below the course(s) you are proposing to substitute. Examples are shown in gray. You may add rows if necessary. *Please note that courses taken at Junior Colleges are typically not accepted for upper division requirements. A grade of C- or better is required in all major classes.*

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| **Humboldt LD or UD Requirement** | | **Alternate Course(s) to Be Substituted for Lower Division and/or**  **Upper Division ERE Requirements** | | | | |
| **Course Catalog #** | **Units** | **Institution** | **Course Catalog #** | **Course Title** | **Units** | **Term Taken (or planned)** |
| *CHEM 109* | *5* | *Example: Made-Up Valley JC* | *Chem 101* | *Gen Chem A* | *3* | *Fall 2021* |
| *“* | *“* | *Example: Made-Up Valley JC* | *Chem 102* | *Gen Chem B* | *3* | *Spring 2022* |
| *ES 315* | *3* | *Example: CSU New* | *Phys 356* | *Soil Properties* | *4* | *Spring 2022* |
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### Major Elective Program (12 Units)

Please CHECK the box (double-click to select “Checked”) for the one (1) Science/NR elective and the three (3) Engineering Design electives you would like to count toward your ERE degree. If you are proposing to substitute another class or classes - either from Cal Poly Humboldt or another institution - for any of these electives, please enter information on the substitutions in the table below.

**Science/Natural Resources Electives: Select ONE course from the following.**

BIOL 330 - Principles of Ecology (4)

CHEM 341 - Quantitative Analysis (5)

CHEM 370 - Earth System Chemistry (3)

FISH 320 – Limnology (3)

GEOL 303 - Earth Resources and Global Environmental Change (3)

GEOL 306 - General Geomorphology (3)

NAS 331 - Indigenous Natural Resource Management Practices (3)

OCN 320 - Physical Oceanography (4)

PHYX 315 - Introduction to Electronics and Electronic Instrumentation (3)

SOIL 360 - Origin and Classification of Soils (3)

SOIL 363 - Wetland Soils (3)

**Engineering Design Electives: Select a total of THREE courses from the following.**

ENGR 418 - Applied Hydraulics (3)

ENGR 421 - Advanced Numerical Methods for

Engineers I (3)

ENGR 434 - Air Quality Management (3)

ENGR 436 - Solid Waste Engineering (3)

ENGR 441 - Hydrology II (3)

ENGR 443 - Groundwater Hydrology (3)

ENGR 445 - Water Resources Planning and

Management (3)

ENGR 448 - River Hydraulics (3)

ENGR 452 - Drinking Water Treatment Engineering (3)

ENGR 453 - Wastewater Treatment Engineering

ENGR 455 - Engineered Natural Treatment Systems (3)

ENGR 471 - Thermodynamics and Energy Systems II (3)

ENGR 473 - Building Energy Analysis (3)

ENGR 475 - Renewable Energy Power Systems (3)

ENGR 478 - Electricity Grids and Distributed Renewable

Energy (3)

ENGR 481 - Selected Topics with Engineering Design (3)  
 ENGR 498 - Directed Design Project (1-3) (*3 units*

*required)*

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| **Humboldt Elective Category** | **Alternate Course(s) to Be Substituted for Life Science or Engineering Design Elective** | | | | | |
| **Sci/NR**  **or**  **ENGR Design** | **Institution** | **Course Catalog #** | **Course Title** | **Units** | **Term Taken (or planned)** |
| *Sci/NR* | *Example: CSU New* | *BIOL 345* | *Biology Topics* | *3* | *Fall 2022* |
| *ENGR Design* | *Example: Elsewhere Univ* | *ENG 444* | *Fun w/ Water* | *3* | *Spring 2023* |
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**When completed, please email this form (without signatures) to** [**engineering@humboldt.edu**](mailto:engineering@humboldt.edu)**. It will be routed via Adobe Sign for student and faculty signatures. Signed copy will be sent to the Registrar’s Office.**

Student Signature Advisor Signature Department Chair Signature