Instructions for Degree/Major Revisions:

- Complete this form when the proposed changes will impact the words, numbers, or symbols as presented in the current catalog copy (often referred to as “changing the footprint of the catalog”). Changes to Program Admission Requirements and Additional Graduation Requirements should be included.
- Catalog copy is available at http://www.fgcu.edu/catalog/. Scroll down to “Academic Programs” on the left navigation bar. Select Undergraduate Programs. Select the Program. Select “Print Program Details” in the upper right corner. Copy and paste catalog copy into a Word document. Turn on the tracking function (be sure that both additions and deletions appear in the tracking). Update the catalog year and make edits. Save the document as a Word file.
- When the proposed changes are approved by the College Curriculum Team, the College Administrator will send the following to Peggy Raynor in OCI by October 31 for review by the University Undergraduate Curriculum Team (UUCT):
  - An electronic MS Word version of the tracked catalog via email.
  - A color hard copy of tracked catalog copy and the Degree/Major Revision form via campus mail.
  - An electronic MS Word version of a degree curriculum map via email (please refer to question #13 below for further explanation).
- If changes are for courses only and there is no impact on the catalog copy, this revision form is not necessary. When these “stand alone” courses have been approved by the College Curriculum Team and noted in CMS, the CMS College Administrator should send a list to Peggy Raynor in OCI. The same October 31 deadline applies.
- All changes to courses are completed via the Curriculum Management System (CMS) https://midas.fgcu.edu/acadaff/scms/default.asp
- Reminder: The prefix/number for a new course is handled one way in the catalog copy and another in CMS. In the catalog copy, identify a new course with the suggested title, suggested prefix and course level, plus XXX (e.g. ART 4XXX). When final approval for the course prefix/number is received from Statewide Course Numbering System, the catalog copy will be updated. In CMS, a new course is requested by entering the suggested title and suggested prefix/number with no XXX. See instructions in CMS for selecting an appropriate suggested prefix/number.

1. **Degree/Major Title:**

   B.S. Environmental Engineering

2. **Contact person:** Lisa Zidek

   **College:** Engineering

   **Department/School:** Environmental Engineering

   **Telephone:** 239-590-7392

3. **Briefly describe the proposed revision(s).**

   Add EES 3XXX (proposed 3010) Science & Tech of Solar Engineering.

   Prerequisites for EES 3204 are being revised.

4. **Effective date:** Fall 2014

   Changes are effective in the fall of the year. Exceptions are approved only in unusual circumstances with adequate justification.

5. **Briefly explain the rationale for the proposed revision.**

   Link the proposed revision to assessment and institutional effectiveness activities (feedback from students, market demands, program evaluation, resource allocation, etc.).

   The course “Science & Tech of Solar Energy” has been offered as a special topics course for the past three years. This course will continue to be offered as a restricted elective in the Environmental Engineering program and therefore needs to become a numbered course.
EGN 1041C (Computational Tools for Eng) is being added as a prerequisite for EES 3204C (Environ Chem for Engineers) to ensure sufficient progression of students in the major prior to taking environmental chemistry. The prerequisites will also be updated to include both combined as well as individual lecture/lab offerings of Chemistry and Biology.

Adding a prerequisite to ENV 4330C Hazardous Waste Remediation to ensure familiarity in fluid mechanics prior to taking Hazardous Waste. The prerequisites will now include CWR 3201C Engineering Fluid Mechanics.

Changing ENV 4612 (Sustainability in Engineering) to ENV 4612C. The content of this course is better suited to a combined lecture/lab format and will enhance student learning.

Remove the "C" designation from ENV 4891C. The in class content of the course does not correlate well with the combined format.

Add the prerequisite of EGN 3433C, Design for Manufacturing, to EGN 3641C Engineering Entrepreneurship. This request is due to changes in several engineering programs.

EES 3204C Environ Chem for Engineers prerequisites will be updated to include biology lecture and lab (BSC 1010 AND BSC 1010L) and

Change the prerequisite for CWR 4540C to include STA 2023 to be consistent with the general education requirements.

6. Describe additional library resources needed to support this revision? Explain rationale for response, even if answer is None.

No additional library resources are required to support these changes.

7. Describe additional faculty resources needed to support this revision? Explain rationale for response, even if answer is None.

No additional faculty are required to support these changes.

8. Describe additional technology, facility, laboratory, or other resources needed to support this revision? Explain rationale for response, even if answer is None.

No additional resources are required to support these changes.

9. What impact will the proposed revision have on other colleges, units, or programs?

There will be no impact on other colleges or programs.

10. New courses:

☐ No new courses are required.

☒ New courses are needed. List prefix/number/title below. Complete a Course Add Form for each from the Curriculum Management System - https://midas.fgcu.edu/acadaff/sens/.

EES 3010 Science & Tech of Solar Energy

11. Change to existing courses:

☐ No existing courses are being changed.

☒ Existing courses are being changed. List prefix/number/title below. Complete a Course Change Form for each from the Curriculum Management System - https://midas.fgcu.edu/acadaff/sens/.

EES 3204C Environ Chem for Engineers

ENV 4330C Hazardous Waste Remediation

ENV 4612 Sustainability in Engineering

ENV 4891C Envr Engr Senior Design

EGN 3641C Engineering Entrepreneurship

EES 3204C Environ Chem for Engineers

Degree/MajorRevision Proposal – Revised – 3-26-13
CWR 4540C Water Resources Design

12. **Termination of existing courses:**

   - [ ] No existing courses are being deleted from the FGCU course inventory.
   - [ ] Courses are being terminated. List prefix/number/title below. Complete a Course Terminate Form for each course from the Curriculum Management System - [https://midas.fgcu.edu/acadaff/scns](https://midas.fgcu.edu/acadaff/scns).

13. **What impact will the proposed revision have on the progression or sequencing of courses in this degree program?**

   Please provide evidence in the form of a degree curriculum map, a listing of required and restricted elective courses in the major and their prerequisites or other form appropriate for your program (consult with College Curriculum Team Chair for additional information).

14. **Catalog copy:**

   See instructions above.

15. **Additional remarks:**

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**APPROVALS (required prior to submission)**

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Does another department or unit provide related expertise or offer similar courses?  

- [ ] No  
- [ ] Yes (if yes, have the other department complete the following. Attach a separate sheet if needed.)

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Remove the "C" designation from ENV4891C. The in class content of the course does not correlate well with the combined format.

Add the prerequisite of EGN 3433C, Design for Manufacturing, to EGN 3641C Engineering Entrepreneurship. This request is due to changes in several engineering programs.

EES 3204C Environ Chem for Engineers prerequisites will be updated to include biology lecture and lab (BSC 1010 AND BSC 1010L).

Change the prerequisite for CWR 4540C to include STA 2023 to be consistent with the general education requirements.

The addition of the EVS prefix to the list of restricted electives will provide more breadth for the Environmental Engineering students when choosing elective courses.

Program specific ABET criteria for Environmental Engineering requires a course in Earth Science. The addition of GLY 4074C Meteorology & Climatology provides an additional course in this subject area.

Program specific ABET criteria for Environmental Engineering requires a course with a biological basis in pollutant phate. The addition of MCB 2010 Microbiology with Lab provides an additional course in this subject area.
Environmental Engineering involves the application of engineering principles to the design and development of systems, processes, and tools needed for the protection of the environment, human health, and natural ecosystems in order to foster sustainable development. The Bachelor of Science in Environmental Engineering (B.S. Env.E.) emphasizes municipal, natural, and industrial environments with focus on the core competency areas of water and wastewater treatment, water resources engineering, solid and hazardous waste management, and air and water quality control. This program employs a team-based interdisciplinary learning philosophy. This approach provides students with knowledge for leadership in sustaining our world and with the critical thinking skills required for effective and innovative engineering practice with particular emphasis on technologies needed to solve problems related to water, soil, and air pollution and resource recovery and re-use. B.S. Env.E. students complete core courses common to all engineering majors as well as specialized courses in environmental engineering.

The Environmental Engineering Program of the Department of Environmental and Civil Engineering in the U.A. Whitaker College of Engineering at Florida Gulf Coast University will produce graduates who:

- Pursue lifelong learning through continuing education and/or advanced degrees in environmental engineering or other related fields,
- Progress to professional registration, and
- Continue to develop professionally through participation in professional organizations and/or participation in professional development activities in the industry.

Program Admission Requirements

Degree-seeking students are classified as pre-majors prior to formal acceptance into a U.A. Whitaker College of Engineering (WCE) major. As pre-majors, students may enroll in:

- Lower level (1000-2999) courses to satisfy General Education and Common Program Prerequisite requirements;
- Lower level electives; and
- EGN1006L from the Engineering Common Core courses, if course pre-requisites are met.

Pre-majors may not enroll in Engineering Common Core classes beyond EGN 1006L without first being admitted to an Engineering Major or in any upper level (3000-4999) Required Courses for the Major without meeting the course pre-requisites and prior approval, where appropriate, by the WCE Academic Advisor.

Admission to Florida Gulf Coast University does not guarantee acceptance into a WCE major. Students are accepted into a WCE major upon satisfaction of the following:

1. Admission to FGCU as a degree seeking student in good academic standing.
2. Attendance at a Freshman Transition Workshop or Transfer Student Orientation session.
3. Completion of Calculus I with a grade of C or higher. Exceptions may be made for AP/IB credit with approval of the WCE Academic Advisor.
4. Submission of the U.A. Whitaker College of Engineering Application for Acceptance into a Major upon completion of the above steps 1 through 3 before the start of registration in any given semester.

Program Requirements

1. FGCU General Education Program (GEP) (36 hrs)
   Refer to the General Education Program for more information.

   A. Communication (6 hrs)
      1. Select ENC 1101 (3)
      2. Select ENC 1102 (3)
   B. Mathematics (6 hrs)
      1. Select MAC 2311 (4)
      2. Select STA 2037 (3) or STA 2023 (3)
   C. Humanities (9 hrs)
      1. Select HUM 2510 (3)
   D. Social Sciences (6-9 hrs)
   E. Natural Sciences (6-9 hrs)
      1. Select BSC 1010C (4)
      2. Select CHM 1046C (4)

   Note: At least one Natural Sciences course must include a laboratory or field component. Courses meeting this requirement contain a “C” or “L” in their course numbers. Each combined lecture and laboratory course (marked with a C) is equivalent to taking the lecture and laboratory separately.

2. Common Program Prerequisites (GEP +23)
   - CHM 1045C General Chemistry w/Lab I (4)
   - CHM 1046C General Chemistry w/Lab II (GEP)
   - MAC 2311 Calculus I w/Analytical Geometry (GEP)
   - MAC 2312 Calculus II w/Analytical Geometry (4)
   - MAC 2313 Calculus III w/Analytical Geometry (4)
   - MAP 2302 Differential Equations (3)
   - PHY 2048C General Physics w/Lab I (4)
   - PHY 2049C General Physics w/Lab II (4)

3. Engineering Common Core (10 hrs)
   - EGM 3420C Engineering Mechanics (4)
   - EGN 1006L Intro to the Engineering Profession (1)
• EGN 1041C Computational Tools for Eng (2)
• EGN 3641C Engineering Entrepreneurship (3)

4. Required Courses in the Major (53-54 hrs)

• CCE 4031 Project Planning & Regulations (3)
• CGN 3323C Surveying and Geomatics (3)
• CWR 3201C Engineering Fluid Mechanics (3)
• CWR 3202C Hydrology and Hydraulics (3)
• CWR 4540C Water Resources Design (3)
• EES 3204C Environ Chem for Engineers (3)
• EGN 3343C Thermodynamics (3)
• ENV 3006C Fundamentals of Environ Engrg (3)
• ENV 3502C Water Treatment Engineering (3)
• ENV 4101C Atmospheric Pollution (3)
• ENV 4330C Hazardous Waste Remediation (3)
• ENV 4351 Solid Waste Management (3)
• ENV 4509C Wastewater Engineering (3)
• ENV 4612 Sustainability in Engineering (3)
• ENV 4891C Envr Engr Senior Design (3)
• XXX XXXX Technical Restricted Elective (3)*

Select one of the Following:
• GLY 1000C Physical Geology (4)
• GLY 2030C Environmental Geology (3)*
• GLY 4074C Meteorology & Climatology (3)

Select one of the Following:
• EVS 4814C Environmental Toxicology (3)*
• MCB 3652C Environmental Microbiology w/lab (3)*
• MCB 2010C Microbiology with Lab (4)

*Technical Restricted Electives can be any ENV, EES, CEG, CWR, CES, TTE, EVS Engineering course or with approval of the advisor in consultation with the faculty, any other course with majority technical content relevant to the Environmental Engineering major, such as EVR 4034C Environmental GIS.

5. University Requirements (3 hrs)

• IDS 3920 University Colloquium (3)
6. Unrestricted Electives (varies)

- EGN 2111C Engineering Computer Graphics (3) is recommended.

TOTAL SEMESTER HOURS REQUIRED: 128 HRS

Additional Graduation Requirements

- A minimum of 128 credit hours.
- At least 48 of the 128 hours at the upper division (3000 and higher) level.
- A minimum of 32 of the last 60 credit hours to be taken at FGCU, including 12 credit hours in the major. Also, ENV 4891C must be taken at FGCU.
- A cumulative GPA of 2.0 for all coursework attempted at FGCU.
- A minimum grade of C for each course used to satisfy the following: ENC 1101 and ENC 1102, common prerequisites, required courses in the major and technical electives in the major.
- Satisfaction of Communication and Computation Skills and foreign language entrance requirements.
- Satisfaction of the Service Learning requirement. See [www.fgcu.edu/connect/](http://www.fgcu.edu/connect/)

Transfer Notes and Acceptable Substitutes

The following substitutions are acceptable for common prerequisites and must be completed with a grade of C or higher.

- MAC 2311: may substitute MAC X311 or MAC X281 (4)
- MAC 2312: may substitute MAC X312 or MAC X282 (4)
- MAC 2313: may substitute MAC X313 or MAC X283 (4)
- CHM 1045C: may substitute CHM X045C or CHM X045 and CHM X045L or CHS X440 (4)
- CHM 1046C: may substitute CHM X046C or CHM X046 and CHM X046L
- PHY 2048C: may substitute PHY X048C or PHY X048 and PHY X048L or PHY X043 (4)
- PHY 2049C: may substitute PHY X049C or PHY X049 and PHY X049L or PHY X044 (4)

For All Majors: Students are strongly encouraged to select required lower division electives that will enhance their general education coursework and that will support their intended baccalaureate degree program. Students should consult with an academic advisor in their major degree area.

Transfer credits will normally be accepted from regionally accredited institutions. Transfer credit received by The Office of Admissions will be evaluated for appropriate credit toward specific requirements in the students' degree program. Registration assistance will be provided at transfer orientation based on the evaluation of official transcripts and degree applicable transfer credit. Admitted students may view transfer credit and access a Degree Evaluation in the Student
Records section of the Gulfline Accounts. Degree evaluation instructions may be found at this link: http://www.lgc.edu/OCI/cappstudents.html.