California State University, Los Angeles

Annual Assessment Report: Undergraduate Degree Programs

Program: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Report Semester/Year: \_\_\_\_\_\_\_\_\_\_\_\_\_

College/School: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Assessment Coordinator: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Specialized Accreditation: ❒ No ❒ Yes please specify Agency/organization and Date \_\_\_ABET/EAC\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Department Mission:

*Year revised: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

Program/Student Learning Outcomes (PLOs/SLOs):

Please list all the PLOs and when they were last assessed or plan on being assessed (*see attached reference sheet for a rubric with PLO guidelines*):

|  |  |
| --- | --- |
| PLOs (SLOs) | When did you last assess it or plan on assessing it? |
| 1. ABET 1: an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics |  |
| 1. ABET 2: an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors |  |
| 1. ABET 3:an ability to communicate effectively with a range of audiences |  |
| 1. ABET 4: an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts |  |
| 1. ABET 5: an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives |  |
| 1. ABET 6: an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions |  |
| 1. ABET 7: an ability to acquire and apply new knowledge as needed, using appropriate learning strategies |  |

**Alignment of Institutional Learning Outcomes (ILOs) and PLOs:**

Please indicate which of your PLOs best match the following ILOs. **(***see attached reference sheet for a complete description of each ILO***)**

|  |  |
| --- | --- |
| Cal State LA Institutional Learning Outcomes: Undergraduate | PLO(s) which match this ILO |
| 1. Knowledge: Mastery of content and processes of inquiry |  |
| 1. Proficiency: Intellectual skills |  |
| 1. Place and Community: Urban and global mission |  |
| 1. Transformation: Integrative learning |  |

Assessment Results

Describe any assessment activities conducted in AY 2019-20 for each outcome. *See attached reference sheet for examples of assessment measures and use of results, and rubrics which will be used to evaluate your assessment processes.* *Please attach any additional information as needed.*

|  |  |  |  |
| --- | --- | --- | --- |
| Program Learning Outcome  (List activities for each PLO. Enter “general” for activities that pertain to multiple PLOs) | 1. How and when was this PLO assessed? (For example, which assessments were used, which courses were examined, what were the dates of data collection?) See Reference sheet for other examples | 2. What were the results? (For example, how many students reached each level of proficiency on the SLOs assessed?) See Reference sheet for other examples | 3. Based on the results, what instructional, programmatic, or curricular improvements were made? |
| 1. ABET 1: Problem Solving | Senior Design Final Report, EE4962 (course #), Spring 2020; other course # | See appendix A | See appendix B |
| 1. ABET 2: Design skills | Senior Design Final Report and presentation , EE4962 (course #), Spring 2020 | See appendix A | See appendix B |
| 1. ABET 3: Communication Skills | Senior Design Final Report and presentation , EE4962 (course #), Spring 2020  Engineering Ethics Essay, ENGR3000, Spring 2020 | See appendix A | See appendix B |
| 1. ABET 4: Broader impact on engineering solutions | Senior Design Final Report , EE4962 (course #), Spring 2020  Engineering Ethics Quiz and Essay, ENGR3000, Spring 2020 | See appendix A | See appendix B |
| 1. ABET 5: team skills | Senior Design Adviser team review , EE4961 (course #), Fall 2021 | See appendix A | See appendix B |
| 1. ABET 6: experimentation & data analysis | Example: lab report, EE XXXX (lab course), Fall 2021 | See appendix A | See appendix B |
| 1. ABET 7: ability to learn | Senior Design Adviser team review , EE4961 (course #), Fall 2021  Other courses? | See appendix A | See appendix B |

|  |
| --- |
| Other Program-Level changes made or under consideration |
|  |
|  |
|  |

**General Education and Service Course Assessment**

|  |  |  |
| --- | --- | --- |
| GE/Course Learning Outcome | GELOs assessed in 2019-20 | How and when was this PLO was assessed? (For example, which assessments were used, which courses were examined, what were the dates of data collection?) |
| GELO1: Knowledge: Mastery of content and processes of inquiry |  |  |
| GELO2: Proficiency: Intellectual skills |  |  |
| GELO3: Place and Community: Urban and global mission |  |  |
| GELO4: Transformation: Integrative learning |  |  |

Who conducts assessment activities (planning, data collection, etc.) for this program? (Please check all that apply)

❒ faculty who teach courses in the program ❒ the program director or department chair

❒ a department or program committee ❒ program staff ❒ students

❒ Other (please specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

With whom do you share your assessment information? (Please check all that apply)

❒ faculty in the department ❒ students in the program ❒ campus administrators

❒ department alumni ❒ employers ❒ external community members

❒ Other (please specify) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Impact of COVID 19 - In this section, please provide the challenges faced, addressed with respect to ensuring continued student learning and ensuring the PLOs/SLOs were met.**

|  |  |  |
| --- | --- | --- |
| PLOs | Related Student/Faculty Challenges | Step taken and/or modification made to address the changes |
| 1. |  |  |
| 2. |  |  |
| 3. |  |  |
| 4. |  |  |
| 5. |  |  |

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Appendix A—Assessment Results

*Note: in this section, please list the assessment data by outcomes. Plain table format is adequate.*

Director Assessment Data

1) ABET Outcome 1

(*directly list the table to show the student performance for each performance indicator*)

* Senior Design Final Report Data:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **performance Indicators** | | **1** | **2** | **3** | **4** |
| **Below Standard** | **Progressing to Standard** | **Satisfactory** | **Exceeding Standard** |
| **Ability to Identify Relevant Engineering Problems to be Solved ABET 1.1** | | Report didn't include any description of the problem or of the approach to identifying a solution. | Report included some but inadequate description of both the problem and the approach to identifying a solution. | Report included adequate description of the problem and the approach to identifying a solution. | Report included clear and comprehensive description of the problem and the approach to identifying a solution. |
| **Distribution** | **Number of students** | 0 | 14 | 41 | 51 |
| **Ability to Formulate Problems through Mathematical/Engineering Analysis ABET 1.2** | | Report either did not include any engineering formulation of the underlying problems, or it had significant shortcomings. | Report included engineering formulation of some of the underlying problems using some mathematical models and analysis. | Report included clear formulation of most of the underlying problems using mathematical models and analysis. | Report included clear and complete engineering formulation of the underlying problems using mathematical models and analysis. |
| **Distribution** | **Number of students** | 0 | 30 | 45 | 31 |
| **Ability to Apply Math, Science and Engineering Principles to Solve Complex Engineering Problems ABET 1.3** | | Report didn't include any equations or engineering principles, or completely wrong application of equations | Report included relevant equations or engineering principles but did not show how they were applied in the design. | Report showed proper use of equations or engineering principles in design process with only a few minor errors. | Report clearly described how appropriate equations or engineering principles were used in the design with correct calculations. |
| **Distribution** | **Number of students** | 0 | 53 | 22 | 31 |

2)ABET Outcome 2

* Senior Design Final Report Data

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Design Objectives and Requirements ABET 2.1** | | Report didn't include any description of initial steps of the design process (e.g. establishing requirements and objectives) | Report included some but inadequate description of the initial steps in the design process (e.g. establishing requirements and objectives.) | Report included adequate description of requirements or objectives of the project. | Report included clear and comprehensive description of both the requirements and objectives of the project. |
| **Distribution**  **Number of students** | 0 | | 22 | 47 | 37 |
| **Synthesis ABET 2.2** | | Report didn't include any description of the synthesis process (e.g. taking requirements to concepts, performing trades, developing and testing prototypes or engineering models.) | Report includes a limited description of the synthesis process (e.g. taking requirements to concepts, performing trades, developing and testing prototypes or engineering models.) | Report includes a clear description of the synthesis process, including a basic description of how requirements evolved to concepts, how trades were conducted, and how prototypes were developed and tested. | Report includes a clear and thorough description of the synthesis process from the concept development stage through the testing of prototypes or engineering models. |
| **Distribution**  **Number of students** | 0 | | 16 | 59 | 31 |

* Senior Design Presentation Data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **performance Indicators** | **1** | **2** | **3** | **4** |
| **Below Standard** | **Progressing to Standard** | **Meets Standard** | **Exceeds Standard** |
| **Selection of Appropriate Design to Meet the Project Goals ABET 2.3** | No explanation of how design was chosen | Partial or unclear explanation of how the design was chosen | Adequately assessed multiple design options with trade studies | Thoroughly assessed multiple design options with data and trade studies |
| **Distribution**  **Number of students** | 0 | 14 | 44 | 48 |
| **Ability to Implement the Design Solution ABET 2.4** | Design implementation did not meet most requirements | Design implementation did not meet some requirements | Design implementation met all the significant requirements | Design implementation met and exceeded all requirements |
| **Distribution**  **Number of students** | 0 | 14 | 44 | 48 |
| **Ability to Test and evaluate a design solution. ABET 2.5** | Didn't include any description of testing or data analysis | Testing and data analysis was unclear or incomplete | Testing and data analysis was clear and appropriate to the project | Testing and data analysis was clear and comprehensive |
| **Distribution**  **Number of students** | 0 | 18 | 40 | 48 |

3)ABET Outcome 3

* Senior Design Final Report Data
* Engineering Ethics Data

4)ABET Outcome 4

* Engineering Ethics Data
* Senior Design Final Report Data

5)ABET Outcome 5

* Senior Design Adviser Review Data

6)ABET Outcome 6

* Lab report data

7)ABET Outcome 7

* Senior Design Adviser Review Data

Indirect Assessment Data

*(in this section, paste the data from EBI survey)*

Appendix B—Continuous Improvement

*Note: in this section, please briefly describe strength and areas of improvement as identified by assessment data, and plan to improve.*

Strength and Areas of Improvement

*(in this section, briefly indicate which outcome is strength, and which outcome (or performance indicator) is an area of improvement. Current Threshold: 70% students meet or exceed standard)*

Continuous Improvement Plan

1) Development /Revision of Assessment Tools

(briefly list new tools or revised tools, attached the tools in Appendix C)

2) Curriculum Improvement

List changes in courses/program (no need to attach the proposal since the university keeps archives)

3) Other improvement (pedagogy, student support, etc.)

Attach department meeting minutes that discuss assessment & curriculum improvement in Appendix C

Appendix C—Evidence of Continuous Improvement

*Note: This section archives the newly developed assessment tools, revised assessment tools (rubrics, etc.) department meeting minutes, IAB board meeting minutes etc that are related to assessment and program improvement. You don’t need to submit Appendix C to Campus for WASC, but this part is required by ABET.*