

Program Plan and Findings: Four Column Layout



Program (CEAT) - CIVE - Civil Engineering (PhD) - 049

Program Mission Statement: The School of Civil and Environmental Engineering educates civil and environmental engineers with knowledge and skills for life-long careers; conducts research and scholarly activities; and shares knowledge through outreach activities.

Program Information

2019 - 2020

Program Information

Assessment Coordinator's Name: Kelvin C.P. Wang

Assessment Coordinator's E-mail Address: kelvin.wang@okstate.edu

Number of Students Enrolled in the Program: 30

Total Number of Students Graduated: 5

Number of Student Graduates from Stillwater Campus: 30

Were university assessment funds used by the department/program for assessment activities?: No

If yes, describe how funds were used and the contribution the funds had on the assessment process:

Number of Student Graduates from Tulsa Campus: 0

Annual Executive Summaries

2019 - 2020

Program Assessment Coordinator: Kelvin C.P. Wang

Plan Review and Approval

Date Current Plan Was Reviewed and Approved: 10/01/2020

Date of Future Plan Review and Approval: 10/01/2020

Summary of Assessment Findings

Describe overall assessment findings and faculty members' interpretation of the assessment results: The majority of examining committee members is made up of Civil and Environmental Engineering faculty, but may also include outside members from either other schools or outside groups. As such, the entire assessment of each candidate is entirely faculty-driven. No doctoral student receives his/her degree until the examining committee is satisfied with the student's achievement of these outcomes. The overall conclusion of our assessment activities is that our students in this program are satisfactorily achieving the outcomes. There is always room for improvement and opportunities are being pursued to improve the quality of our students. Control of the degree programs resides within the individual groups and as such, this is where most improvements are made.

Dissemination of Findings

Describe the individual(s) or committee responsible for reviewing and interpreting assessment data: The assessment committee of the School of Civil and Environmental Engineering is responsible for this process.

Describe the process for sharing and discussing assessment findings with program faculty: At the annual faculty retreat, assessment results are shared with the entire faculty group. Results are also discussed at this time.

Program Improvements Based on Assessment

Based on data collected this year, what changes are being considered or planned for the program?: At this time, no program-wide changes have been initiated for the doctoral program. Within each of the specialty areas (water resources, structures, transportation, construction engineering, geotechnical, and environmental) curricular changes are continually occurring. These are seen primarily in changes in course offerings and course content, reflecting changes within the specialty area and development of new technologies, etc.

CIVE faculty members are proposing to make several modifications to PhD admission requirements and degree requirements that would be submitted in FY2021 for approval.

Based on this year's findings, what (if any) changes are planned for the assessment process?: No

Describe the process for implementing these changes/planned program improvements:

Program Improvements Made in the Last Year: Course Improvements

"Other" Improvements:

Goals for the Coming Year: Improvements in course contents.

Is this Summary Report Complete?: Yes

List all individuals associated with this report preparation: Kelvin C.P. Wang

| <i>Outcomes</i> | <i>Assessment Methods</i> | <i>Findings</i> | <i>Use of Findings (Actions)</i> |
|--|--|--|---|
| <p>Depth of Knowledge - Graduates of the program will demonstrate an appropriate depth of knowledge in their chosen area of specialization in civil engineering.</p> <p>Outcome Status: Active</p> <p>Planned Assessment Year: 2016 - 2017, 2017 - 2018, 2018 - 2019, 2019 - 2020</p> <p>Start Date:</p> <p>Archived Date:</p> <p>Outcome Type: Knowledge</p> <p>Reason for Archival:</p> | <p>Comprehensive, Certification, or Professional Exam(s) - Students' achievement of this outcome is assessed in part by a qualifying examination given, usually, following the first year or two of doctoral work. This written exam is administered by the student's committee, and may cover a wide range of topics. One of the goals of the examination is to determine the candidates depth of knowledge in his/her chosen area. Students are also assessed based on a review of the written product of their doctoral research. The examining committee reviews the written product and ensures that it demonstrates the students' achievement of this</p> | <p>Reporting Period: 2019 - 2020</p> <p>Conclusion: 3 - Meets Program Expectations (Proficient)</p> <p>All of the program graduates successfully demonstrated achievement of this outcome, as evidenced by their receiving approval from their examining committee. Each student successfully demonstrated their depth of knowledge through performance of their independent research as well as performance on their qualifying examinations, which are designed to examine the PhD candidate's depth and breadth of knowledge in their area of specialization. No instance of doctoral students failing to perform at least adequately on these exams was reported.</p> <p>The alumni survey was not implemented this academic year. (10/01/2020)</p> <p>Number of Students Assessed: 5</p> | <p>Use of Findings (Actions): The graduate assessment process is due for revision and updating. This could include the following:</p> <ul style="list-style-type: none">• A more formal process for collecting data from the examining committees regarding each of the outcomes• Efforts to make the process more uniform among the different groups <p>(09/01/2018)</p> |

| Outcomes | Assessment Methods | Findings | Use of Findings (Actions) |
|----------|--|--|---|
| | <p>outcome. The level of achievement is rated in the rubric applied to the student, which includes questions regarding the student's demonstration of depth of knowledge in the area of specialization. Students are assessed further during the dissertation defense. Committee members ask questions regarding the thesis work and, in doing so, can assess the student's depth of knowledge. The committee members then rate the student's success in demonstrating this knowledge on the rubric. In all cases, the assessment must indicate adequate achievement of the expected outcomes before the student is approved for the doctoral degree. Performance in coursework, maintenance of adequate overall GPA in courses, communication (both written and oral) of results of the independent research, and demonstration of mastery of the specific subject area, are all assessed by the examining committee.</p> <p>* Learning Outcome</p> <p>Goal/Benchmark: Student must demonstrate achievement of this outcome in order to be approved for graduation. Students must perform satisfactorily on the qualifying exam in order to proceed with their program. As such, 100% of students must meet the basic requirements of the outcome for graduation. With respect to the dissertation review, it is expected that 100% of the student evaluations will be at least a "3" on the rubric scale (1-5). That is, every</p> | <p>Number of Successful Students: 5</p> <p>How were students selected to participate in the assessment of this outcome?: All students graduating in the present academic year participate.</p> <p>What do the findings suggest about student achievement of this learning outcome?: The successful completion of all 5 PhD candidates, of both their qualifying comprehensive examination as well as their dissertation defense, demonstrates achievement of this outcome. An appropriate depth of knowledge is necessary to successful completion of these milestones.</p> <hr/> <p>Reporting Period: 2019 - 2020</p> <p>Conclusion: 3 - Meets Program Expectations (Proficient)</p> <p>All of the program graduates successfully demonstrated achievement of this outcome, as evidenced by their receiving approval from their examining committee. Each student successfully demonstrated their depth of knowledge through performance of their independent research as well as performance on their qualifying examinations, which are designed to examine the PhD candidate's depth and breadth of knowledge in their area of specialization. With respect to the most recent graduate program alumni survey, which surveyed 4 PhD program alumni (from a pool of 15) from 2009 and 2013, several questions address this outcome. All respondents were PhD degree recipients. In response to the question "To what extent would you say your degree program prepared you with the appropriate depth of knowledge in your area of specialization?", 33% reported feeling adequately prepared, with 67% feeling very well prepared. When asked how well prepared for their current positions graduates feel, 100% reported feeling very well prepared. Given that 100% of respondents reported being currently employed in a position either moderately or highly related to their field of studies, these results indicate that</p> | <p>Use of Findings (Actions): The graduate assessment process is due for revision and updating. This could include the following:</p> <ul style="list-style-type: none"> • A more formal process for collecting data from the examining committees regarding each of the outcomes • Efforts to make the process more uniform among the different groups (09/11/2017) |

| Outcomes | Assessment Methods | Findings | Use of Findings (Actions) |
|---|---|--|---------------------------|
| | <p>student will be required to at least 'meet expectations' of their examining committee with respect to this outcome.</p> <p>Timeline for Assessment: Each Semester</p> <p>Other Assessment Type: Rating of Skills; Analysis of Written Artifacts; Oral Presentation; Review of Dissertation</p> | <p>the students had an appropriate depth of knowledge in their area of specialization.</p> <p>(09/01/2020)</p> <p>Number of Students Assessed: 5</p> <p>Number of Successful Students: 5</p> <p>How were students selected to participate in the assessment of this outcome?: All students are included.</p> <p>What do the findings suggest about student achievement of this learning outcome?: No doctoral student receives his or her degree until the examining committee is satisfied with the student's achievement of this outcome. As information grows within each area of specialization, faculty members in each group review curriculum available to doctoral students and, when needed, new courses may be added to the curriculum. It is, however, acknowledged that a more detailed assessment may be called for.</p> | |
| <p>Research Methodologies - Graduates of the program will demonstrate mastery of research methodologies, including design and execution of an original, creative research program.</p> <p>Outcome Status: Active</p> <p>Planned Assessment Year: 2016 - 2017, 2017 - 2018, 2018 - 2019, 2019 - 2020</p> <p>Start Date:</p> <p>Archived Date:</p> <p>Outcome Type: Skills</p> <p>Reason for Archival:</p> | <p>Review of Student Research - Students' achievement of this outcome is assessed at both the oral defense of the qualifying exam, proposal defense, as well as at the dissertation defense. The committee reviews the written proposal as well as the student's presentation and determines if they have adequately demonstrated achievement of this outcome. If a student meets expectation with respect to this outcome, they proceed with the work. If not, it is at the discretion of the examining committee to determine the next steps. At the dissertation defense, the level of achievement is rated in the rubric applied to the student, which includes questions regarding the student's demonstration of their</p> | <p>Reporting Period: 2019 - 2020</p> <p>Conclusion: 3 - Meets Program Expectations (Proficient)</p> <p>All 5 doctoral program graduates were determined to have achieved this outcome to a satisfactory level. All produced a dissertation that satisfied the requirements. Each candidate successfully presented and defended their research proposals and then successfully defended their dissertations.</p> <p>No alumni survey was conducted this year. (10/01/2020)</p> <p>Number of Students Assessed: 5</p> <p>Number of Successful Students: 5</p> <p>How were students selected to participate in the assessment of this outcome?: All students were included.</p> <p>What do the findings suggest about student achievement of this learning outcome?: Results of the assessment suggest our students are satisfactorily achieving this outcome, though opportunities for improvement are always being sought. When a student's abilities in this area are identified to be lacking early in his or</p> | |

| Outcomes | Assessment Methods | Findings | Use of Findings (Actions) |
|---|--|--|---------------------------|
| | <p>design, conduct, analyze, and present original research. Each member of the committee will be asked to use the rubric to rate the level of achievement.</p> <p>* Learning Outcome Goal/Benchmark: Students must demonstrate achievement of this outcome in order to be approved for graduation. As such, 100% of students must meet the basic requirements of the outcome. With respect to the dissertation thesis review, it is expected that 100% of the student evaluations will be at least a '3' on the rubric scale (1-5). That is, every student will be required to at least 'meet expectations' of their examining committee with respect to this outcome.</p> <p>Timeline for Assessment: Each Semester</p> <p>Other Assessment Type: Rating of Skills; Analysis of Written Artifacts; Comprehensive, Certification, or Professional Exam(s); Review of Thesis/Dissertation/Creative Component; Presentation/Performance; Supervisor Evaluation.</p> | <p>her program, supplemental coursework, for example that relating to experimental design, may be recommended. In general, this contributes to ensuring that students adequately achieve this outcome prior to graduation.</p> | |
| <p>Effective Communication - Graduates of the program will have the ability to communicate effectively the results of their work.</p> <p>Outcome Status: Active</p> <p>Planned Assessment Year: 2016 - 2017, 2017 - 2018, 2018 - 2019, 2019 - 2020</p> <p>Start Date:</p> | <p>Presentation/Performance - Students are assessed based on a review of the written product of the research proposal and dissertation. The examining committee reviews these documents and ensures that they demonstrate the students' achievement of this outcome. The level of achievement is rated in the</p> | | |

| <i>Outcomes</i> | <i>Assessment Methods</i> | <i>Findings</i> | <i>Use of Findings (Actions)</i> |
|--|--|-----------------|----------------------------------|
| <p>Archived Date:</p> <p>Outcome Type: Skills</p> <p>Reason for Archival:</p> | <p>rubric applied to the student, which includes questions regarding the student's demonstration of effective communication, both in writing and graphical representation of data. Students are assessed further during the review of the thesis and during the defense. The student gives an oral presentation, including, generally, presentation software requiring graphical representation of data. The committee members then assess the student's success in demonstrating these communication skills with the rubric.</p> <p>* Learning Outcome</p> <p>Goal/Benchmark: Students must demonstrate achievement of this outcome in order to be approved for graduation. As such, 100% of students must meet the basic requirements of the outcome. With respect to the dissertation thesis review, it is expected that 100% of the student evaluations will be at least a '3' on the rubric scale of (1-5). That is, every student will be required to at least 'meet expectations' of their examining committee with respect to this outcome.</p> <p>Timeline for Assessment: Each Semester</p> <p>Other Assessment Type: Rating of Skills; Analysis of Written Artifacts; Oral Presentation; Review of Thesis/Dissertation/Creative Component; Supervisor Evaluation;</p> | | |