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| **Assurance of Student Learning Report****2021-2022** |
| *Ogden College of Science & Engineering* | *School of Engineering and Applied Sciences* |
| *Architectural Science - 518* |
| *Fatemeh Orooji and Shahnaz Aly* |

***Is this an online program***? [ ]  Yes [x]  No

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| ***Use this page to list learning outcomes, measurements, and summarize results for your program. Detailed information must be completed in the subsequent pages.*** |
| **Student Learning Outcome 1:** Graduates will possess/ demonstrate the ability to identify, formulate strategies and solve technical problems |
| **Instrument 1** | Analysis of pre-design of capstone project (comprehensive design) |
| **Instrument 2** | Analysis of design development and construction documents of capstone project (Senior project) |
| **Instrument 3** | Appraisal of Student technical skills by employers during internship.  |
| **Based on your results, check whether the program met the goal Student Learning Outcome 1.** | **[x]  Met** | **[ ]  Not Met** |
| **Student Learning Outcome 2:**  Graduates will demonstrate an ability to possess effective (oral/ written and/or graphic) communication skills. |
| **Instrument 1** | Appraisals from industry professionals of schematic design presentations |
| **Instrument 2** | Appraisals from faculty and industry professionals of schematic design presentations |
| **Instrument 3** | Appraisal of student communication skills by employers during internship |
| **Based on your results, check whether the program met the goal Student Learning Outcome 2.** | **[x]  Met** | **[ ]  Not Met** |
| **Student Learning Outcome 3:**  Graduates will demonstrate the knowledge and capacity to manage a project through the different design phases. |
| **Instrument 1** | Analysis of schematic design of capstone project |
| **Instrument 2** | Appraisals from industry professionals of capstone projects |
| **Instrument 3** | Appraisal of Students project management skills by employers during internship.  |
| **Based on your results, check whether the program met the goal Student Learning Outcome 3.** | **[x]  Met** | **[ ]  Not Met** |
| **Program Summary (Briefly summarize the action and follow up items from your detailed responses on subsequent pages.)**  |
| AS 351 has been made a pre-requisite to AS 363. This will improve students’ graphic and technical skills. Attention will be paid to the assessments at the schematic design stage to ensure that all students are assessed by a minimum of 2-3 external jury members. Faculty in the program will be working on changing the frequency of course offerings so that students do not fall behind in the program. Faculty are also exploring ways to offer technical electives in the program. The program has not been able to offer electives due to the current faculty keeping up with offering required courses.  |

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| **Student Learning Outcome 1** |
| **Student Learning Outcome**  | **Graduates will possess/ demonstrate the ability to identify, formulate strategies and solve technical problems** |
| **Measurement Instrument 1**  | Direct: **Analysis of pre-design of capstone project (comprehensive design)**Senior AS students work on a year-long capstone (fall and spring semesters). The students were assessed on the first phase of the capstone to evaluate their competency in pre-design tasks in a given design project.  |
| **Criteria for Student Success** | students will have a 3.0 satisfaction rating on a 4 point scale  |
| **Program Success Target for this Measurement** | 75 % of senior students | **Percent of Program Achieving Target** | 61 % of senior students |
| **Methods**  | Students assessed 13. Student work on their project proposal, case-study, site analysis, program and code-review were analyzed based on a rubric. The rubric was completed by faculty in the AS program as well as industry professionals. There were 23 students in the course but due to the situation surrounding COVID a number of evaluations were not returned by the reviewers and some of the students had just one reviewer while some had 4 reviews. Hence the data for this part of the course seems to be below target.  |
| **Measurement Instrument 2** | Direct: **Analysis of design development and construction documents of capstone project (Senior project)**Senior AS students work on a year-long capstone (fall and spring semesters). The students were assessed on the design development drawings and the set of construction drawings at the end of the spring semester. |
| **Criteria for Student Success** | students will have a 3.0 satisfaction rating on a 4 point scale  |
| **Program Success Target for this Measurement** | 75 % of senior students | **Percent of Program Achieving Target** | 86 % of senior students |
| **Methods** | Students assessed 23. Student work on design development and construction drawings were analyzed based on a rubric. The rubric was completed by faculty in the AS program as well as industry professionals.  |
| **Measurement Instrument 3** | Appraisal of Student technical skills by employers during internship.  |
| **Criteria for Student Success** | students will have a 3.0 satisfaction rating on a 4 point scale  |
| **Program Success Target for this Measurement** | 75 % of students | **Percent of Program Achieving Target** | 100 % of students |
| **Methods** | 15 AS students completed 200 hours of internship during the 2020-2021 academic year. The students were reviewed and responses were provided by supervisors.  |
| **Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 1.** | **Met** | **Not Met** |
| **Actions** (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.) |
| The program has implemented changes to pre-requisite courses. These changes are currently being adopted in the courses hence the program will be able to analyze results in the 2022-2023 assessment cycle. The program faculty will also pay close attention to the Analysis of pre-design phase (AS 488) to make sure that the dip in percentage of students achieving a 3 of 4 is a one of or changes need to be implemented to make sure that students are performing to the highest standard. |
| **Follow-Up** (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.) |
| Follow up will occur in the 2022-2023 assessment period.  |

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| **Student Learning Outcome 2** |
| **Student Learning Outcome**  | **Graduates will demonstrate an ability to possess effective (oral/ written and/or) graphic communication skills.** |
| **Measurement Instrument 1** | Direct: **Appraisals from industry professionals of capstone projects presentations.**  |
| **Criteria for Student Success** | Students will score a minimum 3.0 satisfaction on a 4 point scale  |
| **Program Success Target for this Measurement** | 75% of Students  | **Percent of Program Achieving Target** | 91 % of senior students |
| **Methods**  | Students assessed 23. At the end of the semester students present their capstone work to industry professionals and faculty. Students are assessed on their graphic and oral skills. The rubric was completed by industry professionals.  |
| **Measurement Instrument 2** | Direct: **Appraisals from industry professionals of schematic design presentations.** |
| **Criteria for Student Success** | Students will score a minimum 3.0 satisfaction on a 4 point scale  |
| **Program Success Target for this Measurement** | 75% of Students | **Percent of Program Achieving Target** | 90 % of students |
| **Methods** | Students assessed 13. Student design work on schematic design were analyzed based on a rubric. At the completion of schematic design students create a power point and/or presentation board highlighting necessary components of the project. Students also give a verbal presentation of their projects. The rubric was completed by faculty in the AS program and industry professionals who attended student presentations. The assessments were completed during the presentation itself.  |
| **Measurement Instrument 3** | Appraisal of student communication skills by employers during internship |
| **Criteria for Student Success** | Students will score a minimum 3.0 satisfaction on a 4.0 point scale  |
| **Program Success Target for this Measurement** | **75%** | **Percent of Program Achieving Target** | **100%** |
| **Methods** | Students assessed 15. Students are assessed by their supervisors upon the completion of their internship requirements for the program. Supervisors fill out a survey.  |
| **Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 2.** | **Met** | **Not Met** |
| **Actions** (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.) |
| Students completed a summary report of their projects, there was no formal evaluation of this by external jury members due to constraints of time on jury day. During the summer faculty of the architectural science program will come up with a strategy for external evaluation. Additional presentation opportunities have been created for students in design studios I (AS 369) & II (AS 469). Professionals from Industry are being invited to presentations during the course of the semester. Students present a minimum to 3 design projects to the external jury.  |
| **Follow-Up** (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.) |
| Follow up for communication will happen in the 2022-2023 assessment.  |

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| **Student Learning Outcome 3** |
| **Student Learning Outcome**  | **Graduates will demonstrate the knowledge and capacity to manage a project through the different design phases** |
| **Measurement Instrument 1** | Direct: Analysis of schematic design of capstone project |
| **Criteria for Student Success** | Students will score a minimum 3.0 satisfaction on a 4 point scale  |
| **Program Success Target for this Measurement** | 75% of Students | **Percent of Program Achieving Target** | 61 % of senior students |
| **Methods**  | Students assessed 13. There were 23 students in the course but due to the situation surrounding COVID a number of evaluations were not returned by the reviewers and some of the students had just one reviewer while some had 4 reviews. Hence the data for this part of the course seems to be below target. |
| **Measurement Instrument 2** | Appraisals from industry professionals of capstone projects |
| **Criteria for Student Success** | Students will score a minimum 3.0 satisfaction on a 4 point scale  |
| **Program Success Target for this Measurement** | 75% of Students | **Percent of Program Achieving Target** | 86 % of senior students |
| **Methods** | Students assessed 23. At the end of the semester students present their capstone work to industry professionals and faculty. Students are assessed on their ability to have taken a design project from concept to construction documents. The rubric was completed by industry professionals.  |
| **Measurement Instrument 3** | Appraisal of Students project management skills by employers during internship.  |
| **Criteria for Student Success** | Students will score a minimum 3.0 satisfaction on a 4 point scale  |
| **Program Success Target for this Measurement** | 75% of Students | **Percent of Program Achieving Target** | 100% of students |
| **Methods** | Students assessed 15. Students are assessed by their supervisors upon the completion of their internship requirements for the program. Supervisors fill out a survey. |
| **Based on your results, circle or highlight whether the program met the goal Student Learning Outcome 3.** | **Met** | **Not Met** |
| **Actions** (Describe the decision-making process and actions planned for program improvement. The actions should include a timeline.) |
| AS 351 was taught to the students in the spring semester of the sophomore year. It is a pre-requisite for AS 363 which will help students create an enhanced set of construction documents and improve their project management skills.  |
| **Follow-Up** (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.) |
| This will be assessed in the 2022-2023 academic year.  |

**Curriculum Map for Architectural Science - 518 Program**

**School of Engineering & Applied Sciences**

**Western Kentucky University**

The "Core Competencies in Architectural Science - 518 " (see table below) provide guidelines to prepare students for the B.S. degree in Architectural Science - 518

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| **Core Competency/Outcome**  | **Content** | **By the completion of the MET program, the student should:** | **Courses**  | **Mastery Level** |
| **Industry-Wide Technical Competency –*****Graduates will possess/ demonstrate the ability to identify, formulate strategies and solve technical problems.*** | * CAD drawing fundamentals
* Axonometric and projections drawings
* Presentation drawing
* Modeling tools and materials
* Presentation models
* Software applications for 3D modeling
* Construction material methods
* Studio projects and presentations
* Building codes
* Architectural documentation
* Building information modeling
* Architectural design
 | * Develop a project proposal and program.
* Produce a professional portfolio
* Demonstrate problem-solving skills in the architectural field
 | AS 151 Architectural GraphicsAS 163 Arch. DraftingAS 251 3D Modeling & ImagingCM 261 Const. Meth/MatCM 262 Const. Meth/Mat. LabAS 263 Arch. Doc. IAS 273 Arch. DetailingAS 305 Building CodesSEAS 325 Survey of Bldg. SystemsAS 351 Building Info ModelingAS 373 Arch. Doc. IIAS 369 Arch. Des. Studio ISEAS 398 Internship IAS 469 Arch. Des. Studio IIAS 488 Comprehensive DesignAS 490 Senior Project | IIIIIRRRRRMRMMM/AM/A |
| **Communications Skills Competency-** ***Graduates will demonstrate an ability to communicate effectively in pertinent areas, both written and graphic*** | Communication skills (i.e., oral, graphic, and written communication, etc.) | * Demonstrate the use and practice of different levels of graphic and written communication skills.
* Demonstrate the ability to make effective presentations of solutions to selected problems and projects.
* Demonstrate technical writing and reporting skills as related to the proposal, progress reporting, project manual, and final deliverable product.
 | COMM145 Fund Speaking/CommunicationCOMM345 Advanced Public SpeakingAS 263 Arch. Doc. IAS 273 Arch. DetailingAS 373 Arch. Doc. IIAS 369 Arch. Des. Studio ISEAS390 Project Management SEAS 398 Internship IMFGE430 Tech MGT/Team BuildingAS 469 Arch. Des. Studio IIAS 488 Comprehensive DesignAS 490 Senior Project | IRRRRRRMRMM/AM/A |
| **Management/Leadership Competency-** ***Demonstrate the knowledge and capacity to apply managerial/ leadership principles and practices to appropriate situations.*** | - Interaction skills (i.e., teamwork, mentoring, leadership, interpersonal skills, etc.)- Organizational skills (i.e., project management, planning & organizing, training skills, etc.)- Continuous improvement - Environmental/Health/Safety- Problem-solving and decision making | * Understand the ASC industries as a system that integrates multiple disciplines, processes, and stakeholders.
* Demonstrating the ability to work effectively with others.
* Be able to develop architectural design and documentation.
* Demonstrate problem-solving skills in the architectural field.
* Demonstrate successful project management skills from the development of the scope of work to the final product deliverable and all associated project documentation
 | SEAS S390 Project Management MFGE 430 Tech MGT/Team BuildingCE 303 Construction ManagementENG 306 or 307 Business/Technical WritingMGT 200, 210, or 301 Management ElectiveAS 488 Comprehensive DesignAS 490 Senior Project  | IIRRIM/AM/A |

**AMS -490: SENIOR RESEARCH**

Professor : Shahnaz Aly, OAA

**FINAL PRESENATATION ~ OPEN HOUSE / SPRING 2022**

Student: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Date: 4/30/2022**\_\_\_\_**

 **(-)** **EXPECTATIONS (+)**

**COMMUNICATION SKILLS failed weak met exceeded**

\* Verbal / Statement of Design Concept............... 1 2 3 4

\* Graphics / Visual Consistency……..………….... 1 2 3 4

 [documents support verbiage]

**THEORY**

\*Elements, principles, philosophy of Design ...... 1 2 3 4

\* 3-D spatial composition......................................... 1 2 3 4

**FUNCTION**

\* Accessibility / Circulation …………………............ 1 2 3 4

\* Construction Methodology consistency.............. 1 2 3 4

\* Appropriate materials, colors, finishes.............. 1 2 3 4

\* Sustainability / Green Design Aspects…............ 1 2 3 4

\* Code issues researched and accommodated... 1 2 3 4

**PROBLEM SOLVING**

\* Parameters of Project Addressed…….............. 1 2 3 4

\* Design ideas are well developed........................... 1 2 3 4

\* Overall appearance of presentation…………….. 1 2 3 4

**ADDITIONAL COMMENTS**

\* Did student meet the objectives of the capstone?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\* General Overall Comments

By:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**AMS -490: SENIOR RESEARCH**

Professor : Shahnaz Aly, OAA

**FINAL PRESENATATION ~ OPEN HOUSE / SPRING 2022**

Student: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**Date: 4/30/2022**\_\_\_\_**

 **(-)** **EXPECTATIONS (+)**

**COMMUNICATION SKILLS failed weak met exceeded**

\* Verbal / Statement of Design Concept............... 1 2 3 4

\* Graphics / Visual Consistency……..………….... 1 2 3 4

 [documents support verbiage]

**THEORY**

\*Elements, principles, philosophy of Design ...... 1 2 3 4

\* 3-D spatial composition......................................... 1 2 3 4

**FUNCTION**

\* Accessibility / Circulation …………………............ 1 2 3 4

\* Construction Methodology consistency.............. 1 2 3 4

\* Appropriate materials, colors, finishes.............. 1 2 3 4

\* Sustainability / Green Design Aspects…............ 1 2 3 4

\* Code issues researched and accommodated... 1 2 3 4

**PROBLEM SOLVING**

\* Parameters of Project Addressed…….............. 1 2 3 4

\* Design ideas are well developed........................... 1 2 3 4

\* Overall appearance of presentation…………….. 1 2 3 4

**ADDITIONAL COMMENTS**

\* Did student meet the objectives of the capstone?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\* General Overall Comments

By:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_