

# **The Use of a Project-Oriented Senior Capstone Course in an Assessment Process**

by

Thomas W. Jenkins

# Statement of Needs

- The *new emphasis on assessment* in the accreditation process presents an additional challenge *and* opportunity for educational programs to **develop effective tools** to implement the assessment requirements of the accreditation agency and allow continuous quality improvement.

# Statement of Needs

- Any assessment tool should provide ***feedback*** that can be utilized to ***measure*** the program's effectiveness in meeting the program's stated accreditation goals and objectives.
- These tools are often hard to visualize, design, implement, and maintain.
- A Capstone course can meet these requirements.

# Design of the Course

- Select a broad course/project subject to permit inclusion of pre-requisite topics (allowing program evaluation);
- Prepare students with lectures on technical content and project management;
- Sub-divide first part of semester into mini-projects:
  - Prepare students for working in diverse groups, working independently, and producing professional quality work materials,
  - Modularize the project technically.

# Student(S) and **Program** **Assessment(A)** Evaluation Criteria

- Written exams – individually graded (S)
- Laboratory (mini-projects) written reports – team graded (S)
- **Oral exam – individual (S & A)**
- **Final Project – team (S & A)**
  - Oral presentation - individual
  - Written presentation - team
  - Technical content – team
    - These three parts of the final project are assessed by an evaluation committee for accreditation assessment purposes.
  - **Student self-evaluations -individual**
- **Student end-of semester class evaluations (A)**

*All evaluation criteria have standardized forms developed to facilitate assessment by different evaluators.*

# Obstacles to Implementation

- The *time and effort* in developing new course materials.
- **Additional resources** required
  - Development time on the part of the responsible instructor for the *new evaluation materials*
  - Additional time for the *assessment process*; collection, compilation, evaluation, and distribution of the data.
  - Support of this methodology and a commitment from the administration; especially in the allocation of resources during the development phase and to manage the participation in the evaluation committee approach to assessment of the program.

# Use of Information Collected or *“Closing the Loop”*

- The data is collected by the instructor from the evaluation forms – instructor, student, and committee generated.
- This data is then entered into a spread-sheet which quantifies the data and performs statistical analysis – graphs, trends, etc.
- The statistics are used to analyze whether the program is meeting its goals.
- If the goals are not being met (or trends are recognized), program changes are formulated (and documented) in appropriate classes.

# Conclusion

- A well-designed group senior project-oriented capstone course can be a valuable and effective tool in preparing students to enter the workforce within their discipline (or to continue with their education).
- In addition, this class can be utilized as an efficient and successful assessment tool of the program's goals, objectives, and mission, allowing for a cycle of continuous quality improvement and successful accreditation.

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- Copies of the materials including evaluation forms discussed in this paper can be reviewed by contacting the author: Thomas Jenkins, [tjenkins@nmsu.edu](mailto:tjenkins@nmsu.edu)



# Example of the Engineering Technology Final Project

