# Graduate Student Learning Outcomes at the Masters and Doctoral Level

## Doctoral

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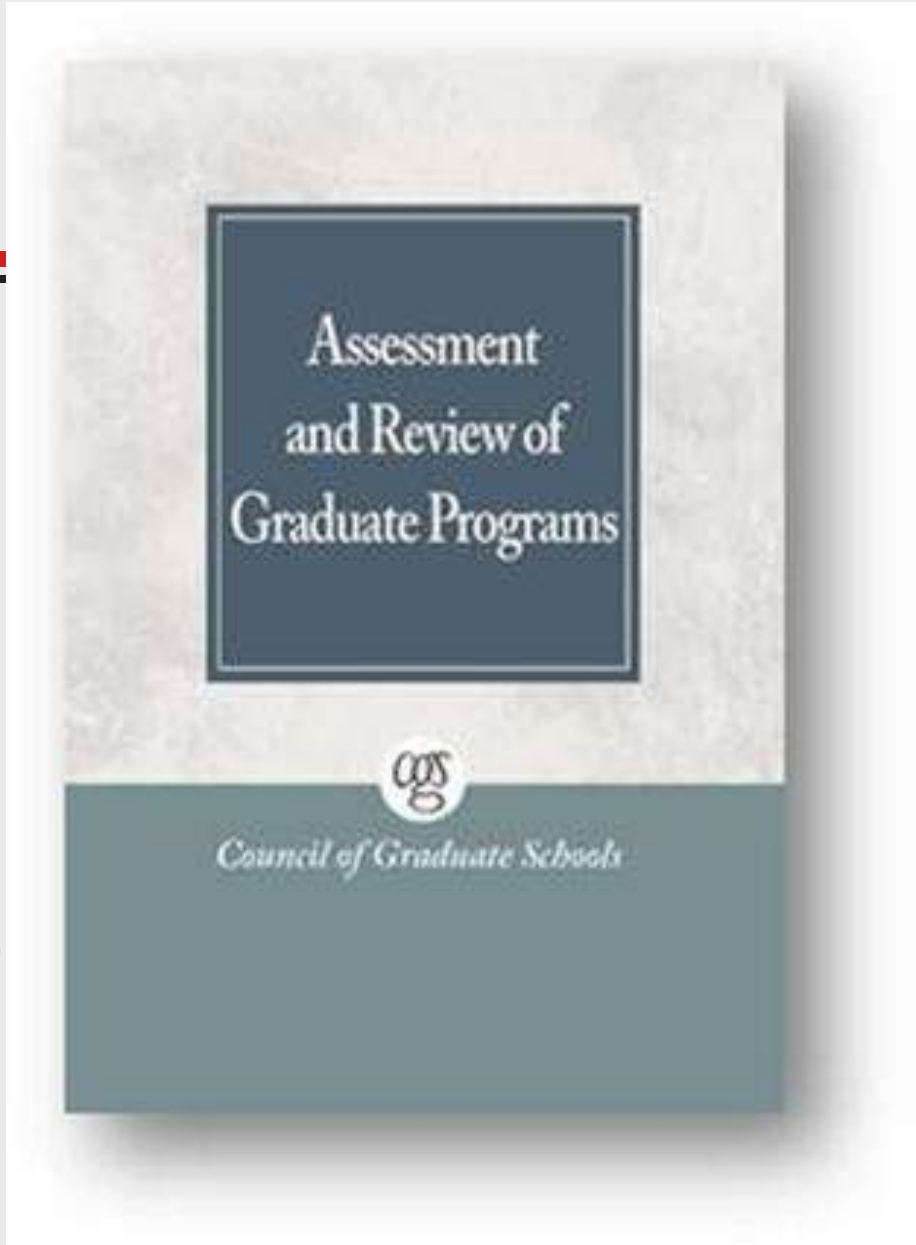
**December, 2011**

A REVISED AND UPDATED PUBLICATION FROM THE COUNCIL OF GRADUATE SCHOOLS

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# Program Quality Assessment - A Three-Phase Process

- External Review – completed on a periodic basis
- Internal Review - continuous and ongoing outcomes based assessment
- Program Evaluation – for Institutional strategic planning

# What is Outcomes Assessment?

- It is a process that engages program faculty in asking three questions about their programs
  - What are our expectations for students completing the program?
  - To what extent are our graduates meeting our expectations?
  - How can we improve our program to better meet our expectations?

# What is Outcomes Assessment?

- It is a process that provides program faculty the means to answer those three questions by:
  - Creating outcomes for their students and program
  - Gathering and analyzing data to determine how well the graduates and program are meeting the outcomes
  - Applying the results of their assessment toward improving their program

# SACS 3.3.1 Institutional Effectiveness

3.3.1 The institution identifies expected outcomes, assesses the extent to which it achieves these outcomes, and provides evidence of improvement based on analysis of the results in each of the following areas:

3.3.1.1 educational programs, to include student learning outcomes

SACS Principles of Accreditation: Foundations for Quality Enhancement, 2010

# Outcomes Assessment: 6-Step Process

1. Establish objectives and outcomes
2. Identify data for assessing outcomes
3. Create and implement an assessment plan
4. Collect and evaluate assessment data and implement change
5. Report results of assessment at regular (relatively short) intervals
6. Modify/revise outcomes and assessment plan as needed

# Best Practices for Implementing Outcomes Assessment

- Identify pilot programs to create assessment materials for each phase
- Use pilot materials as a basis for DGP workshops for each phase
- Offer individual support to DGPs as they created materials and assessed programs
- Create online tools to aid DGPs

# What Are Objectives?

Objectives are the general goals that define what it means to be an effective graduate or program.

# Three Common Objectives for Doctoral Programs

- Developing students as successful professionals in the field
- Developing students as effective researchers in the field
- Maintaining/enhancing the overall quality of the program

# What Are Outcomes?

Outcomes are specific faculty expectations for each objective that define what the student or program needs to achieve in order to meet the objectives.

# Example Outcomes for Objective 1: Professional Development

**Objective:** To enable students to develop as successful professionals for highly competitive positions in industry, government, and academic departments

a. Students are expected to achieve the highest level of expertise in the field, mastery of the knowledge in their fields and the ability to apply associated technologies to novel and emerging problems.

b. Students are expected to present research to local, regional, national, and international audiences through publications in professional journals and conference papers given in a range of venues, from graduate seminars to professional meetings.

c. Students are expected to participate in professional organizations, becoming members and attending meetings.

d. Students are expected to broaden their professional foundations through activities such as teaching, internships, fellowships, and grant applications.

# Example Outcomes for Objective 2: Effective Researchers

**Objective:** To prepare students to be effective researchers in the fields of XYZ

a. Students should be able to state a research problem in such a way that it clearly fits within the context of the literature in an area of study and demonstrate the value of the solution to the research problem in advancing knowledge within that area .

a. Students should be able to apply sound research methods/tools to problems in an area of study and describe the methods/tools effectively .

b. Students should be able analyze/interpret research data.

c. Students should be able communicate their research clearly and professionally in both written and oral forms appropriate to the field.

# Example Outcomes for Objective 3: Quality of Program

**Objective:** To maintain and improve the program's leadership position nationally and internationally

a. The program aims to continue to be nationally competitive by attracting high-quality students.
b. The program aims to provide effective mentoring that encourages students to graduate in a timely manner.
c. The program aims to place graduates in positions in industry and academics.
d. The program aims to maintain a nationally recognized faculty that is large enough and appropriately distributed across XXXX disciplines to offer students a wide range of fields of expertise.

**Outcomes Analysis Years**: 2008-2009
**Biennial Report Year/Semester**: 2009/Fall

**Program(s):** Aerospace Engineering; Mechanical Engineering
**Objective:** To enable students to develop as successful professionals for highly competitive positions in industry, government, and academic departments

| Outcome | Data | Data Source | Collection Date |
|---|---|---|---|
| Provide a variety of experiences that help students achieve the highest level of expertise in mechanical or aerospace engineering, mastery of the knowledge in their fields and the ability to apply associated technologies to novel and emerging problems. | Rubric to be filled out at student's oral preliminary exam | Faculty members on student's committee | After Every Preliminary Exam |
| Provide a variety of experiences that help students present research to local, regional, national, and international audiences through publications in professional journals and conference papers given in a range of venues, from graduate seminars to professional meetings. | Student curriculum vitae to be updated annually by student | Students | Annually |
| Provide a variety of experiences that help students participate in professional organizations, becoming members and attending meetings. | Student curriculum vitae to be updated annually by student | Students | Annually |
| Provide a variety of educational experiences that enable students to broaden their professional foundations through activities such as teaching, internships, fellowships, and grant applications. | Student curriculum vitae to be updated annually by student | Students | Annually |

**Objective:** To prepare students to be effective researchers in the fields of mechanical or aerospace engineering

| Outcome | Data | Data Source | Collection Date |
|---|---|---|---|
| Provide a variety of experiences that help students to | Rubric to be filled out at student's final defense | Faculty on student's | After |

# What We Have Learned

- The process of change takes time
- Communication is the key to success
- It is important to pilot assessment processes before taking it to all graduate programs.

# What We Have Learned continued

- This kind of review process must be ground (faculty) up not top (administration) down
- This kind of review process requires significant human resources
  - Training, data collection, analysis, and interpretation, etc.
  - A key to our success is how much of this can be institutionalized

# Questions & Discussion