Stevens Institute of Technology

School of Business

**AACSB  
ASSURANCE OF LEARNING PLAN**

**Doctor of Philosophy Programs**

**(Ph.D.)**

July 14, 2024

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# Introduction: PhD Assurance of Learning Plan

he School of Business offers three PhD programs, each catering to distinct research interests. Program details are available on the school’s website.

**Ph.D. in Business Administration (BA) program**

This program develops innovative researchers skilled in applying technology and quantitative methods to areas like asset pricing, risk management, and portfolio optimization. Positioned as a science/engineering discipline within a business school, it emphasizes problem-solving in business studies. Research focuses include Finance, Information Systems & Analytics, and Entrepreneurship & Innovation Management. Graduates are equipped to lead academic and institutional research.

**Ph.D. Program in Financial Engineering**

This program prepares researchers to develop quantitative and technological solutions for financial challenges such as asset pricing and risk management. With a problem-solving approach, it stands out for its engineering-driven perspective within a business school setting.

**Interdisciplinary Ph.D. Program in Data Science**

Jointly administered by the Schaefer School of Engineering and Science and the School of Business, this program offers rigorous training in mathematical modeling, machine learning, computational systems, and data management. Graduates become leaders in academia or industry, advancing AI and data-driven decision-making.

# PhD Competency goals

All three programs aim to prepare students for academia or industry by providing foundational research skills in their respective fields—business administration, financial engineering, or data science. Courses enhance analytical, creative, and applied research abilities while incorporating ethics and global perspectives to address today’s challenges.

# PhD Assurance of Learning Assessment Plan

We assess oral and written communication skills, essential for research and teaching, at key Ph.D. milestones: Preliminary Exam, Qualifying Exam, Proposal Defense, and Dissertation Defense..

**Table 1: PhD 1: DIRECT COMPETENCY GOAL – ORAL AND WRITTEN COMMUNICATION SKILLS**

|  |  |  |  |
| --- | --- | --- | --- |
| **DIRECT COMPETENCY GOAL** | **Where and when measured?** | **How measured?** | **Criterion** |
| **1. Ph.D. students can communicate effectively in oral and written presentations.** | The qualifying exam in the 3rd year includes a written and oral component. Failing either results in automatic removal from the program. | The qualifying exams by an examining faculty committee will evaluate both the written quality of the research statements and the presentation quality of the oral exam.  Sampling: All PhD students | The examination committee designs the written exam, which may include class-based questions or a dataset analysis with a research proposal. The student submits a written report.  For the oral exam, the student presents one of three options: (1) their research paper(s), (2) an assessment of assigned papers, or (3) their written exam report. The committee evaluates the presentation and interaction, resulting in one of three outcomes: pass, fail, or re-examination. |

Scholarly competencies are best assessed through publications, citations, and placement, reflecting “Research Competency”—a blend of literature knowledge, scholarly insight, research mastery, and innovation.

**Table 2: PhD 2: INDIRECT COMPETENCY GOAL – RESEARCH COMPETENCY**

|  |  |  |  |
| --- | --- | --- | --- |
| 2. Ph.D. graduates master the core knowledge and research tools in their major field of study. | To graduate each student is required to publish one peer reviewed article | Sampling: All PhD students. | All students (100%) have to publish at least one article in a peer reviewed journal or conference. |
| 3. Ph.D. students demonstrate capacity to identify and develop a research project for their dissertation in a timely fashion. | Students should defend their dissertation proposals at the end of the fourth year of studies. | Sampling: All PhD students. | By the end of the ninth semester (4.5 years) of the program, almost all students should try to successfully defend their dissertation proposal. |

# PhD Curriculum Alignment Map

Table 4: Ph.D. Preliminary Exam/Ph.D. Qualifying Exam/Ph.D. Proposal Defense/Ph.D. Dissertation/Ph.D. Defense

Table 3: Ph.D. Curriculum Alignment Map

|  |  |  |
| --- | --- | --- |
| **Competency goals/ Skill Sets** | **Corresponding Educational Experiences** | **Ethics Thread** |
| PhD 1: Students can communicate effectively in written and oral presentations and structure research papers. | All core courses involve individual and team presentations and require students to write research papers. | Research ethics is important part of the training. Issues such as, plagiarism, social responsibility, etc. will be discussed.  Ethics in academic research will be reinforced through writing and critics.  Some ethical issues will be discussed in performing financial research, such as fraud, social responsibility, climate impact, etc. |
| PhD 2: Ph.D. graduates master the core knowledge and research tools in their major field of study  PhD 3: Ph.D. students demonstrate capacity to identify and develop a research project for their dissertation in a timely fashion. . | All core courses address specific methods or research areas related to Business Administration.  Student’s research with their PhD advisor will enable the students to identify a research topic. |

# Ethics

The Ph.D. in Business Administration Program also takes great effort to address the importance of Business Ethics. The following table shows the courses where ethics is explicitly addressed.

|  |  |
| --- | --- |
| **Courses** | **Goal: Students are aware of social responsibilities in a business environment and can reason about ethical issues.** |
| FIN 703 Microeconomics Theory | Detailed examples are used to help students identify ethical issues, stakeholders, alternatives and identify an appropriate course of action. |
| FIN 704 Econometrics | Students learn to use various measures of market concentration proxies and understand the usefulness of antitrust policy. Some issues on corporate responsibility are tested and highlighted |

# PhD Competency goals, Objectives and Rubrics

**PhD Goal 1. *Our students will communicate effectively in writing and oral presentations*.**

For the written and oral skills assessment, the student’s written report and presentation during the qualifying exam will be assessed by the qualifying exam committee.

**Table 4: PhD Competency Goal 1 Objectives and Rubrics**

|  |  |
| --- | --- |
| **PhD - 1** | **Competency goal, Objectives and Traits** |
| **GOAL** | Our students will communicate effectively in writing and oral presentations. |
| **Objective 1:** | *Students will be able to pass written component of the qualifying exam* *by the end of the fifth semester.* |
| Measure | Satisfactory written report as evaluated by the examining committee submitted as part of the qualifying examinations |
| **Objective 2:** | *Students will be able to pass oral component of the qualifying exam by the end of the fifth semester.* |
| Measure | Satisfactory oral presentation as evaluated by the examining committee as part of the qualifying examinations |

**Explanation for indirect measurements:**

Indirect measures will be assessed periodically using diagnostic tools. Two key indicators are:

1. **Conference/workshop presentation acceptance**
2. **School-organized seminar/workshop presentations**

Though not required, these reflect competency progress. We track external presentations through periodic surveys.

**PhD Goal 2: Research Competency.**

*Ph.D. graduates master core knowledge, research tools, and timely project development, ensuring expertise and the ability to produce competitive research papers.*

*Appendix B includes the Doctoral Activity Report for assessing Ph.D. goals 2 and 3. Appendix C provides the assessment template.*

|  |  |
| --- | --- |
| **PhD - 2** | **Competency Goal Objectives and Traits** |
| **GOAL** | Our Ph.D. graduates master the core knowledge and research tools in their major field of study. |
| **Objective 1:** | *Students are able to write competitive research papers.* |
| Measure: | Number of publications at graduation |

**PhD Goal 3: Timely Dissertation Development**

Ph.D. students must identify and develop their research projects promptly to complete their dissertations within five years. Delays in the proposal often extend doctoral studies.

Appendix B includes the Stevens School of Business Doctoral Activity Report, administered annually to assess Ph.D. goals 2 and 3. Appendix C provides the assessment template.

|  |  |
| --- | --- |
| **PhD - 3** | **Competency goal, Objectives and Traits** |
| **GOAL** | Our Ph.D. students demonstrate capacity to identify and develop a research project for their dissertation in a timely fashion. |
| **Objective 1:** | *Students will defend their dissertation proposal within 4.5 years but at latest in their fifth year of studies.* |
| **Traits** |  |
| Trait 1: | Elapsed time to proposal defense |

**Explanation for Indirect Measurements:**

We will use periodic indirect measures to assess students’ mastery of key knowledge.

1. **Research Output**: We track working papers and seminar presentations post-qualifying exams. Google Scholar citations gauge knowledge dissemination. Papers ready for peer-reviewed submission indicate research competency.
2. **Brown-Bag Seminar Surveys**: Ph.D. students present their research each semester. Surveys on their topics and findings assess depth of knowledge and progress.

Additional assessments include structured interviews with students taught by Ph.D. candidates, evaluating communication, body language, aptitude, and attitude, along with surveys and focus groups.

# Results of AACSB Competency goal Assessments

Each competency goal includes learning objectives, assessed using a rubric with specific traits. Students are individually scored on each trait.

Grading sheets generate a **Summary Results Sheet** for each objective. This includes:

1. **Performance Table**: Categorizes students as *Does not meet, Meets, or Exceeds expectations* and records average scores for each trait.
2. **Overall Objective Table**: Summarizes student performance across the learning objective.
3. **Assessment Comments**: Recommendations for content or pedagogy improvements.

A sample results table follows.

# Indirect measurements

Indirect learning measures rely on third-party input rather than direct observation. Each year, the BA program reports Ph.D. students' conference and paper acceptances, reflecting feedback from referees and editors. These outcomes validate writing quality, research mastery, and question selection, supporting the three competency goals.

# APPENDIX A

**Stevens School of Business**

**TEMPLATE OF AACSB BA Ph.D. COMPETENCY GOAL 1 ASSESSMENT**

**PROGRAM: PhD Program**

**Ph.D.1 GOAL: Our students will communicate effectively in writing and oral presentations.**

**LEARNING OBJECTIVE #1: Students will be able to pass written component of the qualifying exam by the end of the fifth semester.**

**LEARNING OBJECTIVE # 2: Students will be able to pass oral component of the qualifying exam by the end of the fifth semester.**

**ASSESSMENT DATE: ASSESSOR:**

**NO. OF STUDENTS TESTED: COURSE:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Number of Students** | | |  |
| **Competency goal** **Traits** | **Not Meet**  **Expectations** | **Meet**  **Expectations** | **Exceed**  **Expectations** | **Average Grade**  **on Trait** |
| 1: Satisfactory written report as evaluated by the examining committee submitted as part of the qualifying examinations |  |  | **8** |  |
| 2: Satisfactory oral presentation as evaluated by the examining committee as part of the qualifying examinations |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **Total Students by Category**  (Based on Average score across all traits) | **Not meet expectations** | **Meet Expectations** | **Exceed Expectations** |
|  |  |  |  |

**COMMENTS:**

**REMEDIAL ACTIONS:**

# APPENDIX B

**Ph.D. student activity report: This report is submitted every semester to the Ph.D. program director and serves as a basis for assessing goals 2 and 3.**

**PhD Progress Report**

**Name:**

**Stevens ID:**

**PhD advisor:**

**Semester:**

**Milestones**: (The semesters in which you completed each of the program milestones that you have already cleared. The full list follows:

(a) Breadth requirement—coursework;

(c) Qualifying exam—oral;

(c) Qualifying exam—written;

(d) Doctoral signature credit seminar (PRV 961);

(e) Formation of thesis advisory committee & Thesis proposal;

(f) Thesis defense.)

Cleared:

Planned:

**Presentations**: (Any talks that you have delivered in the past 6 months including reading group presentations).

**Submissions**: (Any paper or abstract that you submitted in the past 9 months; please indicate if the paper is currently under peer review).

**Publications**: (Any paper or abstract that you published in the past 18 months).

**Additional information:** (You may also include additional information that may aid the committee in evaluating your progress).

If you have entered the PhD program after obtaining a Master’s Degree, please indicate conferral date, institution, and discipline.

Advisor Name (Print):

Advisor signature:

Date:

# APPENDIX C

**Stevens School of Business**

**TEMPLATE OF AACSB LEARNING BA Ph.D 2 GOAL ASSESSMENT**

**PROGRAM: PhD Program**

**Ph.D. 2 GOAL: Our Ph.D. graduates master the core knowledge and research tools in their major field of study.**

**LEARNING OBJECTIVE #2: Students are able to write competitive research papers.**

**NO. OF STUDENTS ASSESSED:**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **PhD Students** |  |  | **Count of:** | |  |  |  |
| **Name** | **F / P\*** | **Years in Program** | **PRJ** | **Procs** | **Bk Chap** | **Books** | **Other** |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

**\*F-T/ P-T: Fulltime (F), Part time (P) students**

**PRJ: Peer Reviewed Journal**

**Procs: Proceedings**

**Bk Chap: Book Chapters**

**COMMENTS:**

**REMEDIAL ACTIONS:**

# APPENDIX D

**Stevens School of Business**

**TEMPLATE OF AACSB BA Ph.D COMPETENCY GOAL 3 ASSESSMENT**

**PROGRAM: PhD Program**

**Ph.D. 3 GOAL: Our Ph.D. students demonstrate capacity to identify and develop a research project for their dissertation in a timely fashion.**

**LEARNING OBJECTIVE #3:** **Students will defend their dissertation proposal within 4.5 years but at latest in their fifth year of studies.**

**NO. OF STUDENTS ASSESSED:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Last name** | **First name** | **Year** | **Proposal Defense** |
|  |  |  |  |
|  |  |  |  |
| **Total** | |  |  |

**COMMENTS:**

**REMEDIAL ACTIONS:**