Stevens Institute of Technology

Howe School of Technology Management

**AACSB  
ASSURANCE OF LEARNING PLAN**

**Doctor of Philosophy in Technology Management**

**(Ph.D.)**

September , 2014

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# INTRODUCTION: PhD ASSURANCE OF LEARNING PLAN

The Howe School Ph.D. program consists of 11 specific seminars and a research period that translate into credits as follows:

|  |  |  |
| --- | --- | --- |
|  | **Credits** | **Courses** |
| **PhD Degree Requirements** | 54 | 12 |

\* 11 required seminars and one individual study (36 credits)

Dissertation research (18 credits)

The seminars are offered solely for Ph.D. students and are not part of the general Master graduate programs. The 11 required seminars are prerequisite for the program’s qualifying exam. This exam is usually taken after finishing the 4th semester of full-time study.A proposal for the student’s PhD dissertation is usually defended at the end of the third year of full-time study. The final PhD dissertation is usually defended at the end of the fourth year of full-time study.

**Howe School and PhD Vision Statements**

**Howe School of Technology Management Vision**  
We will be leaders in the creation and dissemination of knowledge that drives successful innovation in products, processes and businesses.

**PhD in Technology Management (PhD) Vision**We are recognized as a world-class program in management education and research that emphasizes the integration of organizations and technology.

Ph.D. PROGRAM LEARNING GOALS

The program’s objective is to prepare students to pursue an academic or industry research career.

The ~~program’s~~ course work introduces students to the foundations of research related to innovation and technology in organizations and equip them with the knowledge required to conduct independent research.

The courses, with their domain-specific origins, are differently positioned to develop skills in understanding and analyzing as well as in creating and applying.

# PhD Learning Goals

The Learning Goals for the PhD program are listed in Table 1. Note that the first goal (written and oral communications skills) is same as for other graduate degree programs; the remaining two learning goals (as listed above) are specific to the PhD program.

Table 1: PhD Learning Goals

|  |
| --- |
| Learning Goals/ Skill Sets |
| PhD 1: Students can communicate effectively in written and oral presentations and structure research papers. |
| 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. |

# PhD ASSURANCE OF LEARNING ASSESSMENT PLAN

**Table 2: PhD ASSURANCE OF LEARNING ASSESSMENT PLAN - GOALS 1 through 3**

|  |  |  |  |
| --- | --- | --- | --- |
| **PhD LEARNING GOAL** | **Where and when measured?** | **How measured?** | **Criterion** |
| **1. Ph.D. students can communicate effectively in oral and written presentations.** *Students can write up and/or critically evaluate a research study.* | Assessed in a course taken in the fall semester of the student’s first year in the program.  Colloquium Seminar Series every spring semester. | Student presentations are video-taped; student essays are assessed for writing skills. Feedback is provided to each individual student.  Sampling: All new PhD students | For both the oral and written test, 80% of students must receive a grade of “A” or “B”. Students receiving “C” or “D” grades on the written communications objective are given remedial training. |
| 2. Ph.D. graduates master the core knowledge and research tools in their major field of study. | To graduate each student is required to:  1. publish one peer reviewed article  2. submit one article to a peer reviewed journal. | Sampling: All PhD students. | All students (100%) have to submit at least one article in a peer reviewed journal. |
| 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 third year of studies. | Sampling: All PhD students. | At least 80% of all enrolled Ph.D. students should defend their proposal at latest at their third year. |

Table 3: Ph.D. Curriculum Alignment Map

|  |  |
| --- | --- |
| Learning Goals/ Skill Sets | Corresponding Educational Experiences |
| PhD 1: Students can communicate effectively in written and oral presentations and structure research papers. | All required seminars involve individual and team presentations and require students to write research papers. |
| PhD 2: Ph.D. graduates master the core knowledge and research tools in their major field of study. | All required seminars address specific research methods or specific research areas related to Technology Management. |
| PhD 3: Ph.D. students demonstrate capacity to identify and develop a research project for their dissertation in a timely fashion. | The research with the advisor will enable the students to identify a research topic. |

# PhD LEARNING GOALS, OBJECTIVES AND RUBRICS

Note: PhD Goal 1, *Our students will communicate effectively in writing and oral presentations* is common across all Howe School degree programs, however the assessment process and criteria differ from program to program.

For the written skills assessment, student papers/essays in a first-semester course are submitted electronically to College of Arts and Letters (CAL) communications experts for assessment; the essays and accompanying critiques are returned to each student individually. The instructor grades the essay/paper for content in the usual way.

For the oral skills assessment, student presentations in a first-semester course are video-taped and reviewed with each individual student in a coaching session immediately following the presentation. Starting in the fall semester, 2012, students will also be able to take two online interactive tutorials entitled “Creating and Delivering Presentations” and “Adding Value with PowerPoint Slideshows,” respectively.

**Table 4: PhD Learning Goal 1, Objectives and Rubrics**

|  |  |
| --- | --- |
| **PhD - 1** | **Learning Goal, Objectives and Traits** |
| **GOAL [Stein, Lechler]** | Our students will communicate effectively in writing and oral presentations. |
| **Objective 1:** | *Students will be able to write effectively* |
| **Traits** |  |
| Trait 1: | Logical flow |
| Trait 2: | Grammar and sentence structure |
| Trait 3: | Spelling and word choice |
| Trait 4: | Development of ideas |
| Trait 5: | Document structure appropriate to research methodology |
| **Objective 2:** | *Students will be able to deliver presentations effectively* |
| **Traits** |  |
| Trait 1: | Organization and logic |
| Trait 2: | Voice and body language |
| Trait 3: | Use of slides to enhance communication |
| Trait 4: | Ability to answer questions |
| Trait 5: | Content |
| **Objective 3:** | *Students can write up and/or critically evaluate a research study.* |
| Trait 1: | Research Question (e.g., knowledge gap and motivation for research is made explicit) |
| Trait 2: | Usage of Prior Literature (e.g., upfront literature review and backend relating of findings as appropriate for research approach) |
| Trait 3: | Methodology (e.g., research design, data collection and analysis descriptions in detail) |
| Trait 4: | Results and Implications (e.g., findings and implications for future research and practice) |

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

The goal is to assure the expertise in the research field. The objective is that the students are able to write competitive research papers.

Appendix B contains a copy of the “Howe School Doctoral Activity Report,” which is administered annually and is used to collect data relevant to the assessment of Ph.D. goals 2 and 3. Appendix C contains the template used to gather information for the assessment of this goal.

|  |  |
| --- | --- |
| **PhD - 2** | **Learning Goal, Objectives and Traits** |
| **GOAL [Lechler]** | 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.* |
| **Traits** |  |
| Trait 1: | Number of publications at graduation |

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

The goal is to help the students to finish their dissertations within 5 years. There is not a specific timeline when the students should finish their proposal and a delay of a proposal correlates highly with a delay of the dissertation defense and extends the doctoral studies.

Appendix B contains a copy of the “Howe School Doctoral Activity Report,” which is administered annually and is used to collect data relevant to the assessment of Ph.D. goals 2 and 3. Appendix B contains a copy of the “Howe School Doctoral Activity Report,” which is administered annually and is used to collect data relevant to the assessment of Ph.D. goals 2 and 3. Appendix C contains the template used to gather information for the assessment of this goal.

|  |  |
| --- | --- |
| **PhD - 3** | **Learning Goal, Objectives and Traits** |
| **GOAL [Lechler]** | 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 the first three years but at latest in their fourth year of studies.* |
| **Traits** |  |
| Trait 1: | Elapsed time to proposal defense |

# RESULTS OF AACSB LEARNING GOAL ASSESSMENTS

Each learning goal has a number of learning objectives and performance on each objective is measured using a rubric that in turn contains a number of desired “traits”. Students are scored individually on each trait.

The grading sheets for each student are used to develop a Summary Results Sheet for each learning goal objective. A selection of these Summaries is included below.

The first table in the Summary Results Sheet for a learning objective and trait gives the counts of students falling in each of the three categories:

- Does not meet expectations  
- Meets expectations  
- Exceeds expectations

A typical table for recording results is shown on the next page.

The right-hand column in the table is used to record the average score of the students on each trait. This table provides an indication of the relative performance of students on each trait.

The second table on each sheet provides the counts of students who fall in each of the above three categories for the overall learning objective.

The person undertaking the assessment provides explanatory comments and recommendations on the bottom of the Results Summary Sheet. The recommendations suggest content or pedagogy changes for the next time the course is given.

# APPENDIX A

**Howe School of Technology Management**

**TEMPLATE OF AACSB Ph.D. LEARNING GOAL 1 ASSESSMENT**

**PROGRAM: PhD Program**

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

**LEARNING OBJECTIVE #1: Our students will be effective communicators.**

**LEARNING OBJECTIVE # 2: Students will be able to deliver presentations effectively.**

**ASSESSMENT DATE: ASSESSOR:**

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Number of Students** | | |  |
| **Learning Goal Traits** | **Not Meet Expectat-ions** | **Meet Expectat-ions** | **Exceed Expectat-ions** | **Avg. Grade on Trait** |
| 1: Organization and logic |  |  |  |  |
| 2: Voice and body language |  |  |  |  |
| 3: Use of slides to enhance communication |  |  |  |  |
| 4: Ability to answer questions |  |  |  |  |
| 5: Content |  |  |  |  |
| **Average Grade (Maximum 10)** | | | |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **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.**

|  |  |
| --- | --- |
| official-logo-clear-bkg | Stevens Institute of Technology  Castle Point on Hudson  Hoboken, NJ 07030-5991 |

**Howe School Doctoral Activity Report**

|  |  |  |
| --- | --- | --- |
| Student Name: | Advisor Name: | |
| Student Identification No.: \_\_\_\_\_\_-\_\_\_\_-\_\_\_\_\_\_\_\_ | |
| Major/Concentration: | |

AREA OF DOCTORAL RESEARCH/ WORKING TITLE OF DISSERTATION:

Activity for: Fall Spring Summer 20 \_\_\_\_

Please list your learning and research activities of the current semester, include preparations for research papers and conferences, passed exams, meetings with the Dissertation Advisory Committee etc.:

|  |  |  |
| --- | --- | --- |
| Courses taken this period | | Grade |
|  | |  |
|  | |  |
|  | |  |
| Qualifying Exams: |  |  | | |  |
| Dissertation: | Proposal | Defense | | |
| Papers: | Working Papers | | | Conference | | | Proceedings | Journal |
| Research Plan for next semester: |  | | | | | | | |
| Overall Self-Evaluation  (Satisfied with progress) |  | | | | | | | |

Other comments:

Please list your learning and research objectives for the coming semester: include preparations for research papers and conferences, exams etc.:

Please attach your updated CV

STUDENT SIGNATURE DATE

|  |  |  |
| --- | --- | --- |
| Advisor Evaluation: | Satisfactory | Unsatisfactory |

ADVISOR SIGNATURE DATE

(OVER)

INSTRUCTIONS

TO THE STUDENT:

Please list in the activity report all learning and research activities.

1. Which courses have you finished?
2. Have you passed any exams?
3. Have you started to work on your dissertation topic? What have you accomplished?
4. Have you prepared a conference paper or a journal article? To which conference or journal have you submitted?
5. What are your learning and research objectives for the coming semester? Which courses do you plan to take? Do you plan to write a research paper? Do you plan to finish your dissertation proposal?
6. Have you met with members of your dissertation advisory committee?
7. If you have the status of “doctoral candidate” you need to fill out the DAR (Doctoral Activity Report) form. Please use your progress report as the basis for the DAR.
8. Please sign your report and discuss it with your advisor.

TO THE RESEARCH ADVISOR:

Please discuss the activity report with your advisee.

1. Please specify with the student the objectives for the next semester.
2. Please co-sign the report and give a final evaluation.
3. If your advisee has the status of doctoral candidate please sign the Doctoral Activity Report form.
4. Please submit the progress report and if applicable the DAR to the Howe School Ph.D. program director.
5. You will be invited to a review meeting with the Ph.D. program committee.

# APPENDIX C

**Howe School of Technology Management**

**TEMPLATE OF AACSB Ph.D LEARNING GOAL 2 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 #1: Students are able to write competitive research papers.**

**NO. OF STUDENTS ASSESSED:**

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

**COMMENTS:**

**REMEDIAL ACTIONS:**

# APPENDIX D

**Howe School of Technology Management**

**TEMPLATE OF AACSB LEARNING Ph.D3 GOAL 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 #1: Students will defend their dissertation proposal within the first three years.**

**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:**