



Program Assessment Report (PAR)

Electrical Engineering (EE) Doctoral Degree

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ACADEMIC YEAR COVERED BY THIS REPORT: 2020-2021

I. PROGRAM LEARNING OUTCOMES

The Doctorate of Philosophy is the highest degree awarded by Wright State University. This pinnacle academic credential signifies a mastery of a body of skills and knowledge in preparation for a career as an independent and productive scholar. Doctoral training involves working closely with faculty on significant technological challenges of importance and mutual interest. Program Educational Objectives or goals 1. Graduates of the Ph.D. in E.E. degree shall have the ability to conduct novel research in the field of electrical engineering and generate archival conference and journal publications.

Assessment Team Members • Graduate Studies Committee, Department of Electrical Engineering Alignment of program goals to course outcomes Program Goal Course Number Course Outcome Independent Research production ability EE 8990 Novel research contributions

II. PROCEDURES USED FOR ASSESSMENT

A. Direct Assessment

Assessment Schedule Program Goal Data Collection Term Review Term Annually
Annually Course outcomes to assignment Course Number Course Outcome Assignment
Title EE 8990 Novel research contributions Submission of at least 1 journal
paper manuscript Collection of student artifacts Term Class Collection Method
Annually EE 8990 Survey of faculty with Ph.D. student graduates

B. Scoring of Student Work

Each of the following student work is evaluated by their dissertation committee with a pass/fail outcome. • Candidacy Exam Each Ph.D.-EE student is required to

pass a Qualifying exam to become a Ph.D. candidate. The Qualifying (or Candidacy) exam consists of written exam and oral presentation. • Research Proposal As a Ph.D. candidate, each student is required to independently prepare and defend a novel research plan to advance the state of the art in a particular Electrical Engineering field. Each EE Ph.D. candidate is required to submit annual Progress report that is reviewed and approved by the candidate's Ph.D. dissertation Committee. • Dissertation Defense Each student must demonstrate independent research capability by defending their Ph.D. dissertation. In addition, each student must present results in a conference and submit a journal paper based on the dissertation research.

C. Indirect Assessment

N/A

III. ASSESSMENT RESULTS/INFORMATION:

1) Scoring of Candidacy Exam, Research Proposal, and Dissertation Defense 2) Journal publications

1) PhD students progress through their Candidacy Exam, Research Proposal, and Dissertation Defense. Each item is pass/fail, thus ensuring that 100% of graduating students meet the PhD learning objective of having the ability to conduct independent research. This includes the requirement of submitting at least one journal publication. Students are progressing satisfactorily, with 17 out of 21 having passed their Candidacy Exam, and 4 out of 21 having passed their Research Proposal. Learning outcome is achieved. No concern is raised. 2) Submission of one journal publication is required for degree completion, thus all students meet the program goal of independent research production ability. However, research output is much higher than this minimum requirement. For academic year 2020-2021, nine journal papers were produced. Details included in Section V (Supporting Documents). Learning outcome is achieved. No concern is raised.

Submission of at least 1 journal paper manuscript

IV. ACTIONS TO IMPROVE STUDENT LEARNING

Individual dissertation committees evaluate, discuss, and suggest changes to individual students to help ensure learning objectives are met for each student. Further, aggregate program assessment information is shared with members of the Graduate Studies Committee to identify any potential issues. The committee is

currently engaged in improving and implementing new indirect measures such as an exit survey of Ph.D. students. Finally, we received university feedback from the previous year's report in November 2021. While this did not leave time for the committee to respond in the current 2020-2021 report, one of the charges of the EE Graduate Studies Committee in 2021-2022 will be to update our assessment procedure to incorporate the advice provided.

V. SUPPORTING DOCUMENTS

Additional documentation, when provided, is stored in the internal Academic Program Assessment of Student Learning SharePoint site.