



Program Assessment Report (PAR)

Electrical Engineering (EE) Doctoral Degree

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ACADEMIC YEAR COVERED BY THIS REPORT: 2021-2022

I. PROGRAM LEARNING OUTCOMES

EE PhD submission for 2021-2022 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: 1 Course Number: EE 8990 Course Outcome: Novel research contributions

II. PROCEDURES USED FOR ASSESSMENT

A. Direct Assessment

Assessment Schedule Program Goal: 1 Data Collection Term: Annually Review Term: Annually **Course outcomes to assignment** Course Number: EE 8990 Course Outcome: Novel Research Contributions Assignment Title: Submission of at least 1 journal paper manuscript **Collection of student artifacts** Term: Annually Course: EE 8990 Collection Method: Survey of faculty with PhD 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: Finally, 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:

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

Item 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 11 out of 21 having passed their Candidacy Exam, and 4 out of 21 having passed their Research Proposal. Learning objective is achieved. No concern is raised. Item 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 2021-2022, six journal papers were produced. Details included in Section V (Supporting Documents). Learning objective 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.

V. SUPPORTING DOCUMENTS

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