

Re: Albany MS and PhD in ECE

BJ

Bartow, Jonathan

Today, 6:27 AM

Hawkins, Ann <Ann.Hawkins@suny.edu>; Saulnier, Gary J; Murray, An +1 more

Reply all |

NYSED_ECE_response_...

133 KB

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Phish Alert

Ann:

Attached please find answers from our faculty to the three NYSED questions. Please forward this response back to Ryan deOlde at NYSED. Thanks.

Jon

From: Hawkins, Ann <Ann.Hawkins@suny.edu>

Sent: Monday, June 18, 2018 2:22 PM

To: Bartow, Jonathan

Subject: Fwd: Albany MS and PhD in ECE

Questions from SED...

Sent from my iPhone

Begin forwarded message:

From: Ryan deOlde <Ryan.deOlde@nysed.gov>

Date: June 18, 2018 at 11:29:48 AM EDT

To: "Hawkins, Ann" <Ann.Hawkins@suny.edu>

Subject: Albany MS and PhD in ECE

Ann –

The Engineering Board discussed the proposal for these two programs at its meeting on Friday. There were only a few points that need to be addressed.

1 – What are the quality standards that will be used to determine if a student as successfully completed their doctoral thesis?

2 – The proposals mention that students without an undergraduate degree in engineering may be accepted into the programs. The Board noted that while this is not uncommon, it typically occurs where institutions offer an undergraduate degree in the same field as the graduate programs and students without a bachelors degree in engineering are required to take undergraduate engineering “bridge” courses to prepare them for the study of engineering at the graduate level. The Board has suggested Albany only admit students with an undergraduate engineering degree until Albany’s BS in ECE is running and able to provide “bridge” courses to the students that may need them.

3 – There was a question about the accuracy of the charts on pages 13 and 15 of the PhD proposal. The chart on page 13 indicates in 2015-16 Stony Brook graduated 72 PhD students in its electrical and electronics engineering program, while the chart on page 15 indicates that the Stony Brook program has an enrollment of 64. It appears either the number of graduates is too high or the enrollment figures on page 15 are too low.

Please let me know if you have any questions.

Ryan

Ryan deOlde

Associate in Professional Education

Division of Professional Education
Professional Education Program Review
89 Washington Avenue
Education Bldg, 2nd Fl, West Wing
Albany NY 12234-1000

Office Phone: 518-474-3817 ext 360

Office Fax: 518-473-0114

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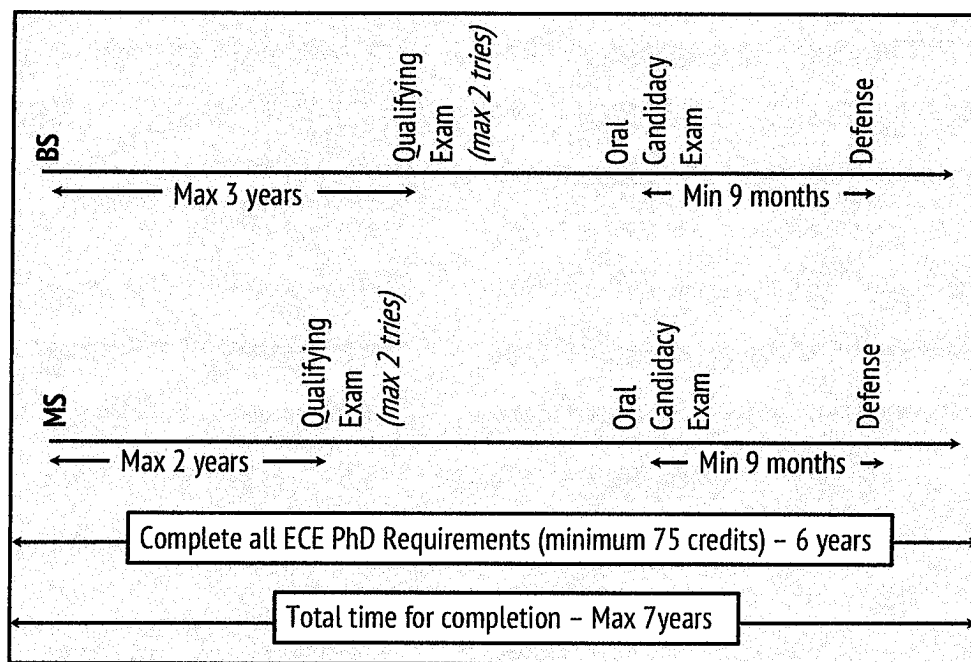
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The sections below respond to the 3 questions/comments raised by NYSED.

1. **Question/Comment:** What are the quality standards that will be used to determine if a student as successfully completed their doctoral thesis?

Reply: Quality standards for the Ph.D. program will be implemented through the conventional approach of having students take a qualifying exam, a candidacy exam and defend their thesis as well as annual performance reviews and a minimum GPA requirement. Our students' performance will be reviewed constantly using multiple metrics during their course of their study. The chart below presents a timeline of the milestones that the students must meet as part of their doctoral program. The timeline considers students who start with a bachelor's degree as well as those who start with a master's degree.



In monitoring and evaluating our students' progress, we will use the following criteria:

- a) **GPA Requirement:** PhD students will be required to maintain an average of 3.5 GPA during their course of study. This GPA is higher than University requirement for all graduate students of 3.0.
- b) **Annual Review:** The performance of all PhD students will be reviewed annually by their Thesis Advisor and the Graduate Program Coordinator. Students will be required to submit annual review forms indicating their achievements, including papers published and submitted, courses taken, and their plan for the following year. The annual review form will include the Thesis Advisor's review of the student's research performance. The advisor will also discuss student performance directly with the student. The completed form will be reviewed by the Graduate Program Coordinator which will track overall student progress and may make recommendations for action to the Department Chair in cases where a student is not making adequate progress.

- c) **Qualifying Exam:** Admitted students will be required to pass a qualifying exam to continue in the PhD program. For the exam, a student will work on a research project throughout one semester and document their work in short (5 – 6 pages) “conference quality paper”. Projects will be defined and supervised by individual faculty members. The student will make an oral presentation of their work to an area-specific examining committee consisting of three ECE tenure-track/tenured faculty members that is selected by the department. The committee will evaluate the student based on a) overall performance on the project, b) motivation and enthusiasm for graduate work, c) the quality of the written and oral presentations, and d) prospects for Ph.D. success. The committee’s recommendation will be discussed by the faculty as a whole which will make the final pass/fail decision. Students will be allowed to take the exam a maximum of two times.
- d) **Candidacy Exam:** Students will take this exam after passing their Qualifying Exam and having defined and made progress on their thesis research. The purpose of the Doctoral Candidacy Examination will be to determine the student's ability to formulate a plan to conduct research leading to a Ph.D. The examination will consist of an oral presentation of a specific research proposal and a comprehensive plan for work leading to a PhD dissertation to their Doctoral Thesis Committee. The Doctoral Thesis Committee will be nominated by the student and Thesis Advisor and approved by the GCC. The Doctoral Thesis Committee will consist of 3 tenure-track/tenured faculty members from the ECE Department and one external member. The external member can be a tenure-track/tenured faculty member from another department at UAlbany or someone from outside the university who holds a doctoral degree and is active in research that is related to the student’s thesis topic. Including an external member on the committee will enable the department to get outside feedback about our program that can be used to improve the quality of research done by our PhD students. If a student fails the Candidacy Exam, the Doctoral Thesis Committee may elect to re-examine the student at a later date or recommend to the Department Chair that the student not be allowed to continue in the doctoral program.
- e) **Thesis Defense:** The final dissertation with oral presentation examination will be the culminating evaluation of the PhD student, where they present their research contributions to the Doctoral Thesis Committee and the public. The defense will include an opportunity for the public to ask questions of the candidate and a private questioning session for the committee alone. The committee will evaluate the student’s research based on the originality of the work, significance of the contribution, ability to relate the thesis to existing work in the field, proficiency to analyze and present data and the overall quality of written and oral presentation. The feedback provided by the committee must be incorporated in the final Thesis submission.
2. **Question/Comment:** The proposals mention that students without an undergraduate degree in engineering may be accepted into the programs. The Board noted that while this is not uncommon, it typically occurs where institutions offer an undergraduate degree in the same field as the graduate programs and students without a bachelors degree in engineering are required to take undergraduate engineering “bridge” courses to prepare them for the study of

engineering at the graduate level. The Board has suggested Albany only admit students with an undergraduate engineering degree until Albany's BS in ECE is running and able to provide "bridge" courses to the students that may need them.

Reply: The background requirements for students who do not have a B.S. degree in Computer Engineering, Electrical Engineering, or Electrical and Computer Engineering have been set by the ECE Department Graduate Curriculum Committee as:

Required Courses

Calculus through Differential Equations
CEN 200 Programming for Engineers (or equivalent)
CEN 340 Digital Logic Design (or equivalent)
CEN 280 Introduction to Circuits (or equivalent)
CEN 350 Signals and Systems (or equivalent)

Additional courses based on the applicant's desired Concentration Area:

Area 1: Communications and Networking

MAT 370 Probability and Statistics for Engineering and the Sciences (or equivalent)
CEN 471 Communication Systems (or equivalent)

Area 2: Signal and Information Processing

MAT 370 Probability and Statistics for Engineering and the Sciences (or equivalent)
CEN 370 Digital Signal Processing (or equivalent)

Area 3: Electronic Circuits and Systems

CEN 380 Introduction to Digital Circuits (or equivalent)
CEN 310 Engineering Electromagnetics (or equivalent)

Area 4: Computer Engineering

CSI/CEN 210 Discrete Structures (or equivalent)
CSI/CEN 213 Data Structures (or equivalent)
CSI/CEN 333 Programming at the Hardware/Software Interface (or equivalent)

One of:

CSI/CEN 400 Operating Systems (or equivalent) if pursuing a software/algorithm focus

or

CSI/CEN 404 Computer Organization (or equivalent) if pursuing a hardware focus

All the courses listed, with the exception of CEN 310 Engineering Electromagnetics and CEN 471 Communication Systems, are currently part of our registered B.S. in Computer Engineering degree program. Starting with the 2018 – 2019 academic year, these two courses will be offered regularly as electives, CEN 310 Engineering Electromagnetics in the fall semester and CEN 471 Communication Systems in the spring semester. Consequently, the needed bridge courses will be available to students and it will not be necessary to delay conditional admittance of a qualified student until our B.S. ECE program is in place.

3. **Question/Comment:** There was a question about the accuracy of the charts on pages 13 and 15 of the PhD proposal. The chart on page 13 indicates in 2015-16 Stony Brook graduated 72 PhD students in its electrical and electronics engineering program, while the chart on page 15 indicates that the Stony Brook program has an enrollment of 64. It appears either the number of graduates is too high or the enrollment figures on page 15 are too low.

Reply: The table on page 13 is incorrect. The actual number of Ph.D. degrees conferred at Stony Brook is 14 rather than 72. We apologize for the error.