TO: The Honorable the Members of the Board of Regents

FROM: Sarah S. Benson

SUBJECT: New York Institute of Technology—Master Plan Amendment for a Doctor of Philosophy (PhD) degree program in Engineering

DATE: April 29, 2021

AUTHORIZATION(S):

SUMMARY

Issue for Decision (Consent)

Should the Board of Regents approve a master plan amendment for New York Institute of Technology (NYIT) to establish a proposed Engineering program leading to the Doctor of Philosophy (PhD) degree at its Old Westbury and New York City campuses?

Reason(s) for Consideration

Required by State statute.

Proposed Handling

The issue will come before the Full Board for action at its May 2021 meeting.

Procedural History

A Master Plan Amendment is necessary as this is the institution's first program at the doctoral level in the engineering disciplinary area.

Background Information

NYIT submitted a proposal to offer a PhD program in Engineering. The Institute currently offers master's level engineering programs and PhD programs in computer science and medical and biological sciences. The purpose of the proposed program is to educate highly talented students in multiple emerging engineering fields with concentrations in Bioengineering, Electrical and Computer Engineering, and Mechanical

Engineering. The program is designed to focus on innovation. The program will include several core fundamental theoretical courses, transformative research, and advanced topics that bridge the gap between high-technology research and its commercialization. The proposed PhD program was designed to be interdisciplinary in nature and include tracks in Bioengineering, Electrical and Computer Engineering, and Mechanical Engineering. This format will create a structure that can harness the potential of cross-disciplinary research.

The proposed program requires 66 credit hours (36 credits of coursework and 30 credits of research and dissertation) and exceeds the minimum hours of three years of full-time study necessary for doctoral programs when all required research and dissertation hours are included. The program will be part of NYIT's College of Engineering and Computing Sciences (CoECS). All students must satisfactorily complete a qualifying exam no later than at the end of the second year in order to remain in the program. By no later than the end of the third year, students will present a written proposal and oral presentation to the dissertation committee for approval. Once approved, the dissertation proposal will be forwarded to the program director for final approval. This leads to advancement to candidacy and eventually to the dissertation defense to the committee members. Following successful oral defense and approval of the written document, all committee members must sign the PhD dissertation approval form, which is forwarded to the program director for final approval.

The applicants must submit an application, Graduate Record Examination (GRE) scores, three letters of recommendation, transcripts of the applicant's previous degree(s), and a statement of purpose. For applicants whose native language is not English and who have been educated outside the U.S., an acceptable score on the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) is required. The Graduate Admission Committee will review all applications and decide whether to grant admission. The general requirement for admission into this PhD program is as follows: For students with a bachelor's degree in engineering, a minimum GPA of 3.2 from a regionally accredited university; For students with an master's degree in engineering, a minimum GPA of 3.5 from a regionally accredited university. A minimum GRE score of 300 is Required; and for international students, NYIT's requirement on acceptable TOEFL IBT score is 79, or 6.5 on IELTS. The admission requirements for transfer students are same as new students. Up to 6 credits from other accredited graduate program can be granted to students in this program for appropriate courses in which a minimum grade of B was earned.

NYIT plans to recruit 3 to 5 full-time students into this program during the initial two years, and 4 to 5 students during years 3-5. The enrollment after the initial five years will be proportional to faculty research grant volume. The plan is to start a modest enrollment to allow for significant resources to be available to the students enrolled in the PhD program. The anticipated geographic origin of students in the proposed program will be 26% from Nassau County, 13% from Suffolk County, 18% from the rest of New York State, 8% from the other states, and 35% from other countries. The anticipated racial/ethnic characteristics of full-time students in the proposed program will be 14% Black non-Hispanic, 23% Asian or Pacific Islander, 16% Hispanic, and 47% White non-Hispanic.

NYIT's CoECS hosts core laboratories which are directly associated with the proposed PhD program, which are available to all faculty and students. These include: Integrated Biomedical Systems (IMS) Laboratory, Networking and Innovation Laboratory Circuits, Systems and Networks (CNS) Laboratory, Bio-nanotechnology and Biomaterials (BNB) Laboratory, Microsensor Laboratory, Biomechanics Laboratory. There will be 15 faculty members who will be directly associated with the proposed PhD program. These faculty members have experience in sponsored research, graduate supervision, and quality research publications. The CoECS has full access to the NYIT's library resources including print titles and media, e-books, e-journals, Ebsco Engineering core collection, the online catalog (Bearcat), and Credo a similar electronic resource, consists of 100 reference resources including such titles as Manufacturing Engineering Handbook. Many of the NYIT's CoECS's laboratories are equipped with state-of-the-art software/hardware equipment to be used for the proposed PhD program students.

Staff members from the Department reviewed the application materials. In addition, as part of the review process, staff members participated in a virtual peer review site visit conducted in February 2021. Based upon the findings of the review, it is determined that the proposed program meets the standards of registration as set forth in the Regulations of the Commissioner of Education.

To determine potential impact on current programs and resources, a canvass of the institutions of New York City and Long Island, as well as of all institutions in the state offering engineering programs was conducted. No objections were received.

Related Regents Items

Not applicable.

Recommendation

VOTED: That the Board of Regents approve an amendment to the master plan of New York Institute of Technology to authorize the Institute to offer the PhD Engineering program. This amendment will be effective until May 2022, unless the Department registers the program prior to that date, in which case the master plan amendment shall be without term.

Timetable for Implementation

If the Board of Regents approves the master plan amendment, the Department will register the PhD program in Engineering at New York Institute of Technology.