**NEW YORK CITY COLLEGE OF TECHNOLOGY**

**THE CITY UNIVERSITY OF NEW YORK**

**DATE:** February 7, 2017

**TO:** Prof. Randall Hannum, College Curriculum Committee Chair

**FROM:** Curriculum subcommittee

Alexander Aptekar (Chair), Lubie Alatriste, William Roberts

**SUBJECT:** Final Report for Proposal 16-08 New Course - EMT 2410 C/C++ Programming for Embedded Systems (Previously part of Proposal 14-01)

**Proposal Overview:**

Course Title and Number**:**  **EMT 2410**, C/C++ Programming for Embedded Systems

Course Credits and Hours: 2 lecture hours, 2 lab hours and 3 credits

Pre/Co requisites: EMT 2370

Catalog Description: Introduction to the basics of C/C++ programming language with applications to embedded systems. Fundamentals of structured and object-oriented programming in C/C++ and their applications in hardware environments. Students develop projects that highlight the application of C/C++ language in an embedded system.

**Rationale:**

The EMT AAS and CET BTech programs in CET Department are accredited by ABET. During the ABET’s visit in 2008, the CET Department was suggested by ABET to implement a more streamlined four year path leading from EMT AAS to the BTech degree in CET. Although ABET did not repeat this streamline issue in its last visit in 2014, it does still exist and causes many of the students not to do well in their BTech studies. Offering this proposed course is the first and imperative step to remedy this problem and heal the gap from EMT AAS and CET BTech.

Knowledge on embedded systems programming is intensively needed by CET BTech courses, but is missed in the current EMT AAS curriculum. This course will provide a solid foundation in the topics related to embedded systems programming to the students in the EMT AAS program, and enables them to successfully continue on to the CET BTech program.

**Proposal Strengths:**

1. This course will provide student opportunity there C/C++ programming skills on hardware integrated systems.
2. The course strengthens the departments depth of programming knowledge and ABET accreditation.
3. The course provides for a more streamlined four year path leading from EMT AAS to the BTech degree in CET .
4. Students will now have the option of focusing on programming learning either embedded systems (EMT 2410) or standard output (CST 2403).

**Weaknesses:** None

**Concerns Addressed:** The subcommittee addressed the potential content overlap between the courses

EMT 2410 and CST 2403. CST department was invited to all subcommittee meetings. EMT department clarified how this course is an option and that both paths remain open to the students. The subcommittee requested EMT department to presented case studies of other universities that have a similar situation of both types of programming courses being offered. Several case studies were presented and are now part of the proposal documentation.

**Subcommittee Activities:** The subcommittee conducted interviews with proposer Prof. Li, Prof. Zia and Prof. Jang, chair of CET department and Kim Cardascia, Dean Kevin Hom, Associate Provost Pamela Brown, and Provost Bonne August.