Concentration in Technology Innovation
(rev 2025-05-01)

The Technology Innovation concentration instills an entrepreneurial mindset in BU's engineering students, preparing them to recognize and exploit opportunities for technical innovations that can lead to viable commercial products and profitable businesses. These students epitomize the Societal Engineer, dedicated to using creative problem-solving skills and global awareness to solve some of society's most pressing challenges. They benefit greatly from the concentration's focus on understanding the innovation and entrepreneurial process from start to finish.

The three-course, 12-credit concentration is open to all undergraduate engineering students. The concentration is noted on students' official transcripts and will prepare students to work more effectively as engineers in any field and organization and provides a launching pad for advancement into future management and leadership positions.

It is recommended that students interested in pursuing a Concentration in Technology Innovation declare their concentration as early as possible in their degree program to facilitate course planning, but in no case later than the start of student's senior year. Note that the gateway course, SI 480, must be taken prior to doing an experience. Course requirements are found below, in addition to details regarding the required experiential component.

Concentration requirements:
1. A sequence of three courses (12 credits) consisting of two required courses (8 credits) listed below and one course (4 credits) chosen from the list of additional courses.
   Required courses: (2)
   - QST SI 480 – Business of Technology Innovation- 4 credit (offered both semesters, but recommended that it be taken in junior year or earlier)
   - And one of:
     - QST SI 482 – Strategy for Technology Based Firms - 4 credit (pre-requisite: QST SI 480)
     - HUB XC 433 D1 – The Art and Science of Technology Consulting – 4 credits**
   Additional Courses: *(Choose one course – 4 credits)*
   - QST SI 482 – Strategy for Technology Based Firms - 4 credit (pre-requisite: QST SI 480)
   - HUB XC 433 D1 – The Art and Science of Technology Consulting – 4 credits**
   - ENG BE 428 – Device and Diagnostic Design – 4 credits
   - ENG BE 468 – Clinical Applications of Biomedical Design -- 4 credits
   - ENG BE 478 – Engineering Approaches for Refugee Health-- 4 credits
   - ENG ME 518 – Product Quality – 4 credits
   Additional Courses Outside of Engineering (these TIC electives are General Electives that do not satisfy a Technical/ Advanced/Professional Elective):
   - CAS IR 593* – Grassroots Finance in Africa and the Developing World – 4 credits
   - QST SI 344* – Entrepreneurship – 4 credits
   - QST SI 445* – Managing the Growing Enterprise – 4 credits
   - QST SI 448* – Dilemmas in Scaling New Ventures – 4 credits
   - QST SI 451* – Organizing for Design & Innovation – 4 credits
   - QST SI 453* – Strategies for Environmental Sustainability – 4 credits
   - QST SI 464* - Intellectual Property Strategies – 4 credits (pre-requisite: QST SI 422 or QST SI 480)
   - QST SI 471* – International Entrepreneurship – 4 credits
   - QST SI 475* --Global Management Experience – 4 credits
   - HUB XC 433* -- Other nonspecific Cross College Challenge (XCC) Projects – 4 credits

   *Courses that do not satisfy a Technical/Advanced/Professional Elective
   **Can be used as a required course or as an experiential component but not both

Note: *Students should check availability of courses each semester; not all courses are offered every semester.*

2. **Experiential Component Requirement:** Completion of a well-defined experiential component in the technology innovation area. A laboratory research, industrial internship, senior design project, or directed study can satisfy this requirement. This requirement must be approved by the Concentration Coordinator and the Experiential Component Approval form must be submitted to the Undergraduate Records Office. After its completion, a report of the experiential component must also be submitted for approval (see "experiential component requirements," below.) **Note 1:** *The Experiential Component requires completion of SI 480 and approval **prior** to doing the experience.* **Note 2:** *it is permissible (but not preferred) for senior design students to complete SI480 in the fall semester and then perform the experience in the spring semester. Students electing this sequence must meet the same deadlines as indicated below for senior design experiences.*

Experiential Component

The experiential component is required for the TIC that is intended to exercise and apply learnings from TIC curriculum and is ideally performed after completing the 3-course sequence specified above. However, this is not always possible. Minimally, students must complete SI 480 to be eligible to undertake an approved experience. Options for experiences include senior design, internships, experiential courses, approved active participation in entrepreneurial efforts, and others by approval. Details on each follow.

Important Dates
- Concentration declaration
  - May 1 Junior year to ensure that you receive TIC notifications
- Experience – senior design
  - October 15: experiential proposal due (ECE, BME, ME)
  - April 1: draft PPT report due
  - April 15: final PPT, video recording, and all supporting approval paperwork due
- Experience – summer internships
  - May 30: experiential proposal due. Proposal must be approved prior to starting internship
  - Sept 1: draft PPT report due
  - Sept 15: final PPT, video recording, and all supporting paperwork report due
- Other – semester-based experiences
  - Within 2 weeks of semester start: proposal due.
  - Within 2 weeks of completion of effort and before Dec 1/April 1: draft PPT due
  - Within 4 weeks of completion of effort and before Dec 15/April 15: final PPT and video due and all supporting paperwork due
- All submissions are electronic to engrec@bu.edu.

For International Students

International students can use CPT in approved internships for the experience under the TIC. The process for approval is:
1. Declare concentration and submit to engrec@bu.edu
2. Complete courses required prior to experience (varies by concentration)
3. Identify experiential opportunity (e.g., research, senior project, internship)
4. Write and submit experiential proposal
5. Submit proposal for approval to engrec@bu.edu
6. When proposal is approved, follow the process for international students for using CPT in an approved internship

Experiential Component Requirements

Requirements common for all experiences
For projects involving multiple TIC students, each student should enumerate their unique contributions to the overall proposal. Each enumerated task requires an identified primary contributor and any secondary contributors. **Students must submit proposals as a package, calling out the responsibilities of each collaborator in a collaboration plan associated with each submission. Each student will be expected to produce a final PPT deck focused on their unique contributions.** Some overlap is expected, but not to exceed 25% of the individual contribution.

Reporting Requirements (all)
1. All documents must be shared via BU google drive made accessible to the TIC coordinator
2. Documents include:
    a. Background materials supporting efforts (documents, reports, spreadsheets, data, etc.)
    b. A mandatory draft TIC PPT deck encompassing results of each element from for review by the TIC coordinator
    c. A final mandatory revised TIC PPT deck updated based on feedback
    d. A mandatory video recording of the PPT
    e. All final paperwork for ENG TIC approval
3. PPT (or equivalent) deck requirements:
    a. Presentation deck of a minimum of 10 slides and a maximum of 20 slides **from each contributor**
    b. Presentations ***should not be a reiteration of a technical project***, but should focus on concentration specific activities
    c. Citations or credit lines for each item appropriated from other sources (images, spreadsheets, trade documents etc.)
    d. Video recording of length 5—10 minutes **from each contributor**
    e. Note: the slide deck can serve as the written summary of the TIC experience

TIC Experience and Confidentiality Issues
Applies to internships, lab research experiences, startups, or any situation where the work may require participating in a nondisclosure agreement.
1. Students should, at the outset, be clear with their employers that the job experience will be used to satisfy the experiential requirement.
2. Experiences involving confidentiality agreements or IP agreements are not exempt from the TIC Experiential reporting requirements.
3. Students should plan for and prepare reports (summary and presentation deck) to provide sufficient detail to be evaluated with respect to proposal details
4. In these cases, the materials delivered to the TIC Coordinator can be 'sanitized' to prevent disclosure of confidential details; however, the reporting must include sufficient detail to demonstrate innovation and entrepreneurial activities undertaken during the experience.

Proposal Format and Content -- Templates
See provided templates with examples for
- Senior design projects
- Internships and research lab projects
- Multiple collaborator effort breakdown