

Policy on Bachelor of Technology Practicum

1. Practicum Objective

The objective of the practicum is to allow the student to apply his/her speciality knowledge in a real-life project, study or applied-research project under the supervision of a committee. The practicum should contain some elements, which are deemed to be innovative, experimental or exploratory in nature.

2. Practicum Description and Procedure

The practicums are normally taken after the student has taken (or is concurrently taking) the last specially course. The practicums can be structured as a single 18-credit project, two 9-credit projects or a single 9-credit project with an additional 9 credits of specialization courses (6 credits must be at the 8000 level)*. Each credit of a project should amount to about 45 hours of work.

Any B.Tech student wishing to undertake practicum work must first submit a practicum proposal to the Program Head. The proposal will be reviewed by a Practicum Review Committee to ensure that the project is suitable. If the proposal is not acceptable, the student will be asked to revise and resubmit. Upon approval, the committee will assign a Subject Expert to supervise the project. At that point, the student should officially enroll in COMP 8045/8046. The student will then work on the project and develop a detailed document in consultation with the Subject Expert. When the project and the document are completed, the student will then forward the final document to the Practicum Review Committee**. The Committee will schedule a meeting with the student for an interview and demonstration of the project. If there is no further revision, the student will have completed the practicum. If significant revisions are required, the student will have to resubmit the document and reconvene with the Committee.

3. Supervisory Committee Membership and Qualifications

In addition to the Practicum Review Committee and the Subject Expert, as described earlier, who will supervise the practicum, an Industry Sponsor, if available, should also be included in the supervisory committee. The description and qualification of the supervisory committee are as follows:

- B. Tech Practicum Review Committee which consists of the program head of the B.Tech program, a member of the BCIT Computer Systems Technology Curriculum Committee, and a

* Students who want to replace a practicum with 3 additional courses (two of which must be at the 8000 level) must obtain approval from the Program Head before proceeding.

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senior faculty member of the Computer Systems Technology department whose expertise is outside the domain of the practicum.

- An Industry Sponsor who will endorse or provide support to the practicum and may benefit from the result of the practicum. The practicum sponsor may be a person or an organization able to validate the value of the proposed practicum. This is usually the work manager or supervisor of the student, or even a client for whom the project is developed for. In case the student has no immediate manager, or supervisor, or external client, then a second member of the Practicum Review Committee or one designated by the committee can take upon this role.
- A Subject Expert in the area of the practicum, who can provide technical assistance, supervises the student and certifies the standard and quality of the work. This is usually a BCIT faculty who has teaching responsibility in the program. As a general rule, the subject expert should have a relevant advanced degree plus substantial related technical experience.

Members of the committee are subject to approval by BCIT.

4. Supervisory Committee Time Commitments

For each practicum credit, the subject expert will provide a minimum of 1/2 hour of supervision / advice. The BCIT B.Tech program head (if so required) will be able to provide one hour of initial guidance, and one hour of review/evaluation upon completion.

5. Practicum Proposal

It is the student's responsibility to choose the topic of the practicum and to enlist the appropriate members for the committee. The student is required to submit a proposal, which will:

- include a cover page stating your name, student number, and the practicum course number, e.g. COMP 8045 or COMP 8046 for 9 credits and COMP 8045 & 8046 for 18 credits.
- include a one page summary of the student's education, work experience, and area of specialization
- give a description of the practicum
- provide extensive background to the problem. An extended background of the problem, the nature and complexity of the problem to be solved should be included in the proposal. It is recommended that the same depth of information which would be included in the final report be included in the proposal.
- define the scope and the depth of the practicum
- include a rigorous test plan and document the results of the testing in the final report
- describe the methodology, approach, technologies to be used. Since the practicum should contain some elements, which are deemed to be innovative, experimental or exploratory in nature, it is strongly recommended new leading edge technologies, even experimental, be considered for the practicum. Even if these technologies are not required by your client, or practically feasible, research on these areas should be included as part of the proposal, and a chapter or two detailing how they can be used for this project should be included in the final report.
- provide details about estimated milestones in terms of time and effort - rough guidelines being 45 hours of effort for each practicum credit (details should include number of hours assigned to each task or milestone identified in the project)
- detail all deliverables
- explain how the practicum will further enhance students expertise in their chosen specialization

- the proposal must be approved by the Industry Sponsor before the student submits it to B.Tech Practicum Review Committee, if applicable

The proposal will be evaluated according to:

- a) feasibility of proposal within the time and cost constraints
- b) value to employer, client or other parties
- c) use of appropriate software development methodologies
- d) novelty or innovation
- e) appropriate level of rigor and research methodologies
- f) specificity of deliverables
- g) clarity of written proposal

[The specific evaluation criteria are outlined in 'Criteria for Approval of Practicum Proposal'.]

6. Practicum Evaluation

The practicum will be evaluated according to:

- a) contribution to employer, client or others
- b) adherence to time and cost budgets
- c) adherence to deliverables in initial proposal
- d) clarity of written communication in final report

[The specific evaluation criteria are outlined in 'Criteria for Approval of Practicum Completion']

The committee will use the following grading system:

S (Satisfactory)

An "S" grade means that the practicum meets the expected standard and the student will be awarded the appropriate credits towards the B. Tech requirements.

CIP (Course in Progress)

A "CIP" grade means that the practicum is generally acceptable, though the student is required to complete the appropriate revision in order to remove the deficiencies identified. In such a case, the student may be asked to register in more credits to make up for the deficiencies. The number of credits required is to be determined by the committee. In addition, a time limit may be imposed on the student to complete the revision required.

U (Unsatisfactory)

A "U" grade means that the practicum does not meet the standard expected by the committee or BCIT. In such a case, the student will have to re-register in the practicum course. Furthermore, additional course or other remedial work may be required before re-registration in the practicum course is allowed.

An oral examination may be required at the discretion of the committee.

7. Additional Terms and Conditions of the Practicum:

- a) The student must have met all the prerequisites and requirements currently in effect. In particular, the student must have completed the technical core courses [Comp7036 (Applied Research Methods), Comp7081 (Technical Issues in Software Development) and Comp 8081 (Management Issues in Software Development)] as well as the specialty courses. Subject to the approval of the Program Head, the student may be allowed to undertake the Practicum when the student is concurrently enrolled in the last specialty course.
- b) The student is charged with a tuition based on the number of credits to be earned from the Practicum (subject to the fee-cap policy, if any).
- c) The student may register in the Practicum any time within three (3) months after the Practicum approval has been approved by the Program Head. However, the student will be deemed to be registered in the semester in which the date of actual completed registration occurs within that semester. The exact semester in which the student is deemed to be registered, is to be solely determined by BCIT as per its calendar and general practice.
- d) The student is normally expected to complete a 9 credit practicum within 12 months after s/he has been approved to register for the project course(s), and 24 months for an 18 credit practicum. Extension may be granted by the Program Head in extenuating circumstances. Nevertheless, the student must abide by the BCIT-wide policy on time limit. Currently, the student has a maximum of seven (7) years to complete the entire degree program at BCIT.
- e) The student's Practicum report is opened to the view of the public, serving as sample project reports for future students and external reviewers. If the student does not wish for his/her report to be made open for public viewing, s/he will be required to submit a formal letter / documentation from his/her sponsor.
- f) A recommendation letter from the sponsor that speaks to the value of the B.Tech program and the major project should be included in the final report submission, if applicable.

8. Summary of Application Process

- a) Prepare a proposal to the above guidelines.
- b) Submit the proposal (electronic copy preferred) to the Program Head. The Program Head will convene a meeting with the B.Tech Practicum Review Committee to review the proposal after receipt of the fully completed proposal.
- c) Upon approval of the proposal, a subject expert will be assigned.
- d) Register for COMP 8045/8046.
- e) Submit a hardcopy and electronic copy of the project report to the Program Head or Program Assistant on or before the Project Due Date, along with a letter from your sponsor, if applicable.**

** Hardcopy reports are expected to be submitted bound (Glue binding, Channel binding, Cerlox binding, Perfect binding, Wire binding, etc.) or in a binder.

Practicum Report Requirement

Upon completion of your practicum, a report of the work accomplished is required for submission as the final step in the completion of this component of the B.Tech Program in Computer System Technology. The objective of the report is to document the project you were engaged in and highlight the essential technical aspects in the development of the project. The report is not just a collection of source code, screen dumps, and design documents, but a comprehensive and cohesive document describing and explaining the issues behind the entire project. The information contained in the report should be divided into four main sections:

1. Introduction
2. Body
3. Conclusion
4. Appendix

Section 1 provides background on the nature of the project and the essential problems you are trying to solve, a brief description of the project itself, and the goals and objectives you are trying to accomplish through this practicum.

Section 2 details the project itself. This includes possibly a number of subsections:

- A Background of the project, company background, etc.
- B Project statement within the context of company operations
- C Possible alternative solutions to the project
- D Solution chosen for this project and the rationale behind
- E Details of the development
- F Implications of the implementation: performance, functionality, etc.
- G Research on the use of new technologies applicable to the project
- H Future enhancements

Under subsection E you should try to include a set of deliverables in the analysis / design / implementation of the project. If you adopt a traditional structured method in your development, you will include the following in this section:

1. Feasibility Assessment Report
2. Entity Relationship diagram / analysis
3. Context diagram
4. Data flow diagrams
5. Network diagrams
6. Installation manuals / user manuals

If you adopt an object-oriented method, you will include the following in this section:

1. Feasibility Assessment Report
2. Use Case diagrams / analysis
3. Sequence diagrams
4. Class diagrams
5. Object diagrams
6. Other UML diagrams

Each of these sections should be described and explained concisely in English, (i.e. not just the diagrams themselves), supplemented with selected sections of source code, screen dumps, etc. Extended source code (only if appropriate), related documents, etc. could be included in the appendix under Section IV.

Section 3 contains the concluding remarks of the project.

Section 1, 2, and 3 may range from around 50 to no more than 200 pages.

The practicum report will be evaluated by the practicum committee.

Students should have completed LIBS7001 Critical Reading and Writing before submitting their final report.

Students are required to submit a copy of the practicum report for filing to the Computer Systems Technology, Computing and Academic Studies. Confidential information from the practicum may be omitted for this submission.

DISCLAIMER: This document is undergoing continual review and modifications. The terms and conditions specified herein are subject to changes without notice. Students are advised to obtain the current version of this document at the time they wish to apply for enrolment in the Practicum courses. The onus is on the student to ensure total compliance of the rules and regulations of Practicum policy currently in force.

Criteria for Approval of Practicum Proposal

1. Has the student met the prerequisites of the practicum?
2. Is the proposal well defined in terms of goals, aims, scope and depth?
3. Is the proposal feasible within the estimated time and cost constraints?
4. Does the proposal related to the students that are innovative, experimental or exploratory in nature?
5. Is the proposal related to the students specially area?
6. Does the proposal contain elements that are innovative, experimental or exploratory in nature?
7. Does the proposal use appropriate software development methodologies or approaches?
8. Are the deliverables clearly defined?
9. Is the proposal clearly written in accordance with the specified guidelines?
10. Is the proposal relevant in contributing towards the student's stated learning objective?
11. Has the proposal been endorsed by the Industry Sponsor?

Criteria for Approval of Successful Completion of the Practicum

1. Was the practicum completed within the time allowed?
2. Does the practicum meet the stated goals, aims, scope and depth as originally indicated in the proposal?
3. Is the practicum completed within the time and effort estimates?
4. Are all the deliverables, as initially stated in the proposal, in fact delivered?
5. Does the quality of the final report meet BCIT and industry expectations?
6. Has the practicum been thoroughly evaluated, critiqued, verified, approved and accepted as complete by the subject expert?
 - goals
 - aims
 - scope
 - depth
 - quality
 - methodology
 - deliverables
7. Has the practicum been verified, approved and accepted as complete by the practicum sponsor?
8. Are there any testimonials by peers and other industry sources in support of the quality of the practicum?