Respond to all four questions, following the Degree Program Assessment Plan Form Instructions. Attach additional pages as needed.

1. What are your student learning goals for this degree program?

Master of Computer Science degree aims to provide students with a solid theoretical and practical foundation for careers in computer science and/or advanced graduate studies. On completing the degree, students will be able to
   a) Work in computer hardware and software industry as system analysts or engineers, or
   b) Work as IT specialists or system administrators in various institutions or
   c) Continue to study in computer science PhD programs.

2. What are your learning objectives or outcomes associated with each student learning goal?

There are five objectives or outcomes:
   d) Be able to understand, analyze, design and implement fundamental computer algorithms for variety of applications.
   e) Be able to understand, analyze, design and implement computer hardware in variety of computer systems
   f) Be able to understand, analyze, design and implement computer software of computer systems
   g) Be able to understand, analyze, design and implement operating systems and networking of distributed computer systems
   h) Be able to understand, analyze, and develop computer applications in various areas of database, simulation, data mining, machine learning, computer graphics,
artificial intelligence, computer security, image processing, and parallel processing.

3. Where will the objectives be addressed in your program? In which courses and through which activities will they be assessed? (Attach Curriculum Assessment Map.)

In our program, students have to take six core courses and another five or three elective courses for Project or Thesis options respectively. The six core courses are as follows:

- CPSC 7311 Software Engineering
- CPSC 7321 Operating Systems
- CPSC 7331 Computer Architecture
- CPSC 7341 Telecommunications and Networking
- CPSC 7385 Analysis of Algorithms
- CPSC 7190 Graduate Seminar

Except for the Graduate Seminar (CPSC 7190), which is a one-credit hour course on research methodology, all the core courses are designed to directly address the program objectives 2a, 2b, 2c and 2d described in Section 1. In particular, each of these objectives is addressed and supported by the core courses shown as follows:

- Objective 2a: CPSC 7385 Analysis of Algorithm, CPSC 7321 Operating System
- Objective 2b: CPSC 7331 Computer Architecture
- Objective 2c: CPSC 7311 Software Engineering
- Objective 2d: CPSC 7321 Operating Systems, CPSC 7341 Telecommunications and Networking

Objective 2e is addressed and supported by the variety of elective courses actively offered as follows:

- CPSC 5360 Computer Security
- CPSC 5366 Interactive Computer Graphics and Animation
- CPSC 5376 Applied Cryptography
- CSPC 5388 Smart Software Systems
- CPSC 7312 Parallel Processing
- CPSC 7351 Database Design
- CPSC 7361 Computer Graphics
- CPSC 7374 Image Processing
- CPSC 7375 Machine Learning
- CPSC 7382 Systems Analysis and Design
- CPSC 7383 Modeling and Simulation
- CPSC 7386 Compiler Design

In addition to the courses, all the objectives of 2a, 2b, 2c, 2d and 2e of the program also addressed by the Graduate Project (CPSC 7198) or Master Thesis (CPSC 8600) each student has to take and participate.
4. How will you assess each objective? (a) Methods; b) Design; c) Assessment cycle; d) Stakeholder involvement.)

a) **Methods:** The assessment methods of each objective are mainly (1) the exams of the supporting courses described in Section 2 and (2) the Graduate Project or Master Thesis each student has to take. The data that will be collected for assessment are:
   
   (1) Grades of the supporting courses
   (2) Exam form of the oral proposal of graduate project or thesis
   (3) Exam form of the final defense of graduate project or thesis
   (4) Conference or journal publications of the research result of graduate project or thesis

   The grades of the supporting courses are signed by the professors who are teaching the courses and responsible for the integrity of the grades. In most cases, the grade data are reliable and consistent. The oral proposal and defense are examined by the exam committee consisting of the major advisor and another two professors. The exam results of oral and defense in most cases are reliable and consistent. Our department is working on improving the consistency of grading and committee exams across all the faculty members in the department. The conference or journal publications are the most reliable data, if any, because both forms in Computer Science have to be peer-reviewed.

b) **Design:** The assessment data will be collected at the following times:

   (1) The GPA (Grade Point Average) of core course of the students who completes all the core courses described in Section 3.
   (2) The GPA (Grade Point Average) of elective course of the students who completed all elective courses. This usually is done when the students completed all of the course work requirement.
   (3) The GPA (Graduate Point Average) of all courses and the exam results of the project or thesis oral proposal and defense for the graduating students prior to leaving the program.
   (4) The conference or journal publications of the graduating students prior to or after leaving the program.

   All these data will be collected at the beginning of each semester when the grades and exam results of previous semesters are available. The data will be collected by the department secretary.

c) **Assessment Cycle:** The assessment cycle last three years accessing the five objectives of the program as follows:

   (1) Year One: Assess the algorithm and software objectives 2a and 2c.
   (2) Year Two: Assess the architecture and system objectives 2b and 2d.
   (3) Year Three: Access the application objective 2d.

   The assessment will take place in the first month of the Fall semester (September) and evaluate the following:

   a) Evaluate the performance of students
   b) Evaluate the supporting courses recommend possible improvement

   The project and thesis will be evaluated each year in the following aspects:

   a) Quality of the project and Thesis completed
   b) Quality of publications
c) Composition and validity of the project and thesis committees
d) **Stakeholder Involvement:** Department has advisory board meeting each semester. The advisory board consists of the representatives of IT sections of Companies or IT industries who will hire our graduates. We will ask them to evaluate of program and give us feedback and comments on our graduates they hire. We will seek their inputs on the design and the contents of our graduate courses that support the objectives of the program.
<table>
<thead>
<tr>
<th>Courses and Activities</th>
<th>How Outcomes are Addressed and Assessed</th>
<th>Outcome 2a Algorithm</th>
<th>Outcome 2b Hardware</th>
<th>Outcome 2c Software</th>
<th>Outcome 2d Systems</th>
<th>Outcome 2e Application</th>
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<td>CPSC 7311 Software Engineering</td>
<td>Emphasis: Exam</td>
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<td>Extensive Exams and Project</td>
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<td>CPSC 7341 Telecommunications and Networking</td>
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<td>CPSC 7385 Analysis of Algorithm</td>
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<td>CPSC 7398 Graduate Project</td>
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