### A. Course Identification and General Information

1. **Course title and code:** Computer Organization and Assembly Language (CSC 210)

2. **Credit hours** 3-2-0-4

3. **Program(s) in which the course is offered.**
   *(If general elective available in many programs indicate this rather than list programs)*
   - Bachelor in Information Technology

4. **Name of faculty member responsible for the course**
   - Dr. Osama Ahmad Safarini

5. **Level/year at which this course is offered**  Level 4 / Year 2

6. **Pre-requisites for this course (if any)**
   - Computer Programming (1) – (CSC 101)

7. **Co-requisites for this course (if any)**
   - N/A

8. **Location if not on main campus** ------------

9. **Mode of Instruction (mark all that apply)**

   - **Traditional classroom**
     - Yes
     - What percentage? 70%

   - **Blended (traditional and online)**
     - Yes
     - What percentage? 30%

   - **e-learning**
     - No
     - What percentage? 0%

   - **Correspondence**
     - No
     - What percentage? 0%

   - **Other**
     - No
     - What percentage? 0%

**Comments:** NA
B. Objectives

1. What is the main purpose for this course?
   - Understand the organization of the computer.
   - Identify the role and representation of data in the computer.
   - Identify the role of each component and distinguish its effect on the computer performance.
   - Integrate the major PC components; explain the purpose of each one, and how they collaborate to execute computer instructions.
   - Understand and analyze the nature of a computer instruction-set and addressing mode and explore the interaction between the CPU-memory and I/O peripheral devices.
   - Develop a simple application using assembly language.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

   By the department community as:
   - The course contents will be periodically reviewed by the instructors and the Undergraduate Committee to include new structural materials and test methods, as and when necessary.

   By the instructor and students with:
   - Internet Searching
   - Class workshops
   - Projects development
   - Technical reports and papers preparation

C. Course Description (Note: General description in the form to be used for the Bulletin or handbook should be attached)

<table>
<thead>
<tr>
<th>1. Topics to be Covered</th>
<th>No. of Weeks</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Computer Organization</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Data Representation</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>A Top-level View of Computer Function and interconnect</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>A Top-level View of Computer Function and interconnect (Continue)</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Memory Organization</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Secondary Storage</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Input/Output</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Assembly Language</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Instruction-Set characteristics</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Addressing Modes</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>
2. Course components (total contact hours and credits per semester):

<table>
<thead>
<tr>
<th>Component</th>
<th>Lecture</th>
<th>Tutorial</th>
<th>Laboratory</th>
<th>Practical</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact Hours</td>
<td>45 hours</td>
<td>0</td>
<td>30 hours</td>
<td>0</td>
<td>0</td>
<td>75</td>
</tr>
<tr>
<td>Credit</td>
<td>45 hours</td>
<td>0</td>
<td>15 hours</td>
<td>0</td>
<td>0</td>
<td>60</td>
</tr>
</tbody>
</table>

3. Additional private study/learning hours expected for students per week:

4 hours

4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

<table>
<thead>
<tr>
<th>NQF Learning Domains And Course Learning Outcomes</th>
<th>Course Teaching Strategies</th>
<th>Course Assessment Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Knowledge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 describe Computer Organization</td>
<td>Lectures</td>
<td>Class work</td>
</tr>
<tr>
<td>1.2 recognize Microprocessor operation</td>
<td>Laboratory training</td>
<td>home works</td>
</tr>
<tr>
<td>1.3 describe Memory and Memory models</td>
<td>Emulation</td>
<td>assignments</td>
</tr>
<tr>
<td>1.4 define External storage</td>
<td></td>
<td>Quizzes</td>
</tr>
<tr>
<td>1.5 recognize Input/output</td>
<td></td>
<td>Midterm Exams</td>
</tr>
<tr>
<td>1.6 describe Assembly language structure</td>
<td></td>
<td>Final Exam</td>
</tr>
<tr>
<td>1.7 state Addressing Modes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.8 recall BIOS and DOS software interrupts</td>
<td>Laboratory training</td>
<td>Laboratory test</td>
</tr>
<tr>
<td>1.9 recognize Assembly language programming</td>
<td>Emulation</td>
<td>Home works</td>
</tr>
<tr>
<td>2.0 Cognitive Skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Write an Assembly mini project</td>
<td>Laboratory training</td>
<td></td>
</tr>
<tr>
<td>2.2 develop the specification of a specific computer system</td>
<td>Emulation</td>
<td></td>
</tr>
<tr>
<td>3.0 Interpersonal Skills &amp; Responsibility</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 3.1 Work in a Team
- Lab

### 3.2 Develop and evaluate ideas and share it with others.
- Lab
- Lab test

### 4.0 Communication, Information Technology, Numerical

#### 4.1 demonstrate Lab Training sessions
- In-Lab discussion
- Workshops in Lab
- Lab Quizzes
- Practical Evaluation

### 5.0 Psychomotor

#### 5.1 Responds effectively to unexpected experiences.
- Lab sessions
- Lab test

#### 5.2 Modifies instruction to meet the needs of the learners.
- In-Lab discussion
- Lab Quizzes

#### 5.3 Perform a task with a machine that it was not originally intended to do.

#### 5.4 Develop a new and comprehensive training programming

### 5. Schedule of Assessment Tasks for Students During the Semester

<table>
<thead>
<tr>
<th>Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)</th>
<th>Week Due</th>
<th>Proportion of Total Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Home works</td>
<td>4,7,12</td>
<td>10%</td>
</tr>
<tr>
<td>2 Lab works and test</td>
<td>Weekly, 14</td>
<td>10%</td>
</tr>
<tr>
<td>3 Quizzes</td>
<td>3,8,14</td>
<td>10%</td>
</tr>
<tr>
<td>4 Mid-Terms</td>
<td>6,12</td>
<td>15%+15%</td>
</tr>
<tr>
<td>5 Final Exam</td>
<td>16</td>
<td>40%</td>
</tr>
</tbody>
</table>

### D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

   6 office hours per week

### E. Learning Resources
1. List Required Textbooks

2. List Essential References Materials (Journals, Reports, etc.)

3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)
   N/A

4. List Electronic Materials (eg. Web Sites, Social Media, Blackboard, etc.)
   - [http://members.ee.net/brey](http://members.ee.net/brey)

5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
   - Operating System (MS Windows & Linux)
   - Assembler Software "MASM32"
   - Intel x86 Emulator "emu8086"

F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)

1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
   Lecture room of each section to accommodate 25 students

2. Computing resources (AV, data show, Smart Board, software, etc.)
   - Projectors, data show, smart board, etc.
   - Computer for each student in the Lab.

3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)
   N/A
G Course Evaluation and Improvement Processes

1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching

   Student course evaluation at the conclusion of the course

2. Other Strategies for Evaluation of Teaching by the Program/Department Instructor

   - Faculty assessment of the course and effectiveness of teaching delivery.
   - Periodic self-assessment of the program.

3. Processes for Improvement of Teaching

   - Undergraduate Committee will review deficiencies based on the student evaluation, faculty input, course file, and program assessment.
   - Feedback from employers and alumni surveys and graduating students’ input are used to identify any deficiencies in students’ ability in applying knowledge of properties and the use of structural materials.
   - Organize workshop on effective teaching methods to enable instructors to improve their teaching skill.
   - Teaching method will focus on students’ learning and on course learning outcomes.

4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)

   - Undergraduate Committee will review samples of student work in this course to check on the standard of grades and achievements.
   - A faculty member from a reputable university will evaluate the course material and the students’ work to compare the standard of grades and achievements with those at his university.

5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

   Self-assessment and external assessment will be carried out. The feedback received from these assessments will be used to plan for further improvement in the course syllabus, teaching method, and delivery of course materials.

Faculty or Teaching Staff: Dr. Osama Ahmad Safarini
Signature: _______________________________     Date Report Completed: ____________________