**RTL COURSE SYLLABUS in CCC100 (Fundamentals of Computing)**

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| ***Course No./Title****:* | CCC 100 – Fundamentals of Computing |
| ***Course Credit****:* | 3 Units |
| ***Duration:*** | 15 weeks |
| ***Delivery Mode****:* | Asynchronous (remotely supervised) with a few synchronous sessions |
| ***Level:*** | Basic |
| ***Course Description****:* | Overview of the computing industry and computing profession; History of computation;  Application software; Number systems and data representation; Operating systems, networks,  the internet, database fundamentals; Logic formulation and programming; data structures, file  structures, software engineering, computing security and ethics. |
| ***Learning Culminating Outcome****:* | By the end of the course, the student is able to, explain and expound fundamental principles of computing, and analyze issues related to computing and its applications in the modern world. |
| ***Prerequisite****:* | None |
| ***Co-requisite****:* | None |
| ***Evaluation Criteria:*** | The course requires 60% of the total score to pass. |
| ***Course Developers/Instructors****:* | Julieto E. Perez  Department of Computer Science  [julieto.perez@g.msuiit.edu.ph](mailto:julieto.perez@g.msuiit.edu.ph)  Consultation hours: TF: 10:00-11:00pm  W: 1:00-3:00pm |

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| **Outcomes for HIGHER EDUCATION INSTITUTION:** | 1. To keep abreast of latest developments in the specific field of practice; 2. Effectively communicate using English and Filipino, orally and in writing; 3. Work effectively and independently in multi-disciplinary and multi-cultural teams; 4. Exemplify professional, social, ethical, and environmental responsibility; 5. Preserve and promote “Filipino historical and cultural heritage” (based on RA 7722); and 6. Advocate for peace in multi-cultural settings. |
| **Outcomes common to the (field):** | a. Analyze complex problems, and identify and define the computing requirements needed to design an appropriate solution.  b. Apply computing and other knowledge domains to address real-world problems.  c. Design and develop computing solutions using a system-level perspective.  d. Utilize modern computing tools.  e. Evaluate computing solutions in relation to their impact on society and environment |
| **Outcomes specific to the (Program):** | f. Ability to apply knowledge of computing, basic science, and mathematics appropriate to the discipline and the program educational objectives.  g. Ability to analyze a problem, identify and define the computing requirements appropriate to the problem’s solution.  h. An ability to design, implement, and evaluate a computer-based system, process, component,  or program to meet the desired needs  i. Ability to use technique, skills, and tools necessary to current computing practice.  j. An ability to apply design and development principles in the construction of software systems  of varying complexity, in accordance with applicable standards. |
| **Outcomes specific to universities:** | k. Generate new knowledge using research and development projects |

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| **Course Goals** | **OUTCOMES** | | | | | | | | | | | | | | | | | | |
| **Higher Education Institution** | | | | | | **Program Outcome (Common in the Discipline)** | | | | | | **Outcome Specific to Program** | | | | | | **Universities** |
| **A** | **B** | **C** | **D** | **E** | **F** | **a** | **b** | **c** | **d** | **e** |  | **f** | **g** | **h** | **i** | **j** |  | **k** |
| **LO1:** Explain fundamental principles, concepts, and evolution of computing systems as they relate  to different fields. | ✔ | ✔ |  |  |  |  | ✔ | ✔ |  | ✔ |  |  | ✔ | ✔ | ✔ | ✔ | ✔ |  |  |
| **LO2:** Expound on the recent developments in the different computing knowledge areas. | ✔ | ✔ |  |  |  |  | ✔ | ✔ |  | ✔ |  |  | ✔ | ✔ | ✔ | ✔ | ✔ |  |  |
| **LO3**: Analyze solutions employed by organizations to address different computing issues. | ✔ | ✔ |  |  |  |  | ✔ | ✔ |  | ✔ |  |  | ✔ | ✔ | ✔ | ✔ | ✔ |  |  |
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**Course Schedule of Course Requirements**

| **Week** | **Topic** | **Intended Learning Outcome** | **Teaching and Learning Activities** | **Learning Resources** | **Assessment Strategies/Tools** | **Evidence of Outcome** | **Due Date** |
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| 1 | Introduction to Computers: Appreciation of Computing in Different Fields | **LO1:** Explain fundamental principles, concepts, and evolution of computing systems as they relate  to different fields. | Lecture | Film Showing Film Review | Assignment: Reaction paper (essay) | Required Output 1**:** An essay explaining why computer literacy is vital to success  in today’s world |  |
| 2 | The Internet and the world wide web  Application Software | Lecture | PowerPoint presentation | Online Activity |  |  |
| 3 | Components of the System Unit, Input, Output, and  Storage | Lecture, Virtual Desktop Application (Training Mode) | PowerPoint presentation,  Virtual Desktop Application | Virtual Desktop Assembly (Test Mode) | Required Output 2**:** Discussion on the evolution of the internet |  |
| 4 | Operating Systems and Utility Programs | Lecture | PowerPoint presentation | Quiz | Research on the different types of application software used  in communications |  |
| 5 | Exam 1 |  |  |  |  |  |  |
| 6 | Communications and Networks | **LO2:** Expound on the recent developments in the different computing knowledge areas. | Lecture | PowerPoint presentation | Quiz |  |  |
| 7 | Database Management | Lecture | PowerPoint presentation | Quiz | Discussion of the functions common to most database management systems. |  |
| 8 | Computer Security and Safety, Ethics, and Privacy | Lecture | PowerPoint presentation | Essay |  |  |
| 9 | Information System Development | Lecture | PowerPoint presentation | Quiz |  |  |
| 10 | Enterprise Computing  Computer Careers and Certification | Lecture | PowerPoint presentation | Quiz | Evaluation report on IT solutions employed by an organization covering various IT issues. |  |
| 11 | Exam 2 |  |  |  |  |  |  |
| 12 | Programming languages and program development |  | Lecture, Program  Demo, Guided Programming | PowerPoint presentation  Demo program | Quiz, Programming Exercise | An application using the simple programming constructs |  |
| 13 | Fundamental Programming Constructs | **LO3**: Analyze solutions employed by organizations to address different computing issues. | Lecture, Program  Demo, Guided Programming | PowerPoint presentation  Demo program | Quiz, Programming Exercise |  |  |
| 14 | Algorithms and Problem Solving | Lecture, Program  Demo, Guided Programming | PowerPoint presentation  Demo program | Quiz, Programming Exercise |  |  |
| 15 | Exam 3 |  |  |  |  |  |  |
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**Reference:**

Cashman, S. & Vermaat, M. E. (2014). Discovering Computers. Cengage Learning

**Scoring Rubrics**

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This course involves computer programming activities as one of the sources of assessment. The rubrics is described below.

Computer Programming

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1. Specifications

a. (Exceptional) The program works and meets all of the specifications.

b. (Acceptable) The program works and produces correct results and displays them correctly. It also meets most of the other specifications.

c. (Amateur) The program produces correct results but does not display them correctly.

d. (Unsatisfactory) The program is producing incorrect results.

2. Readability

a. (Exceptional) The code is exceptionally well organized and very easy to follow.

b. (Acceptable) The code is fairly easy to read.

c. (Amateur) The code is readable only by someone who knows what it is supposed to be doing.

d. (Unsatisfactory) The code is poorly organized and very difficult to read.

3. Reusability

a. (Exceptional) The code could be reused as a whole or each routine could be used.

b. (Acceptable) Most of the code could be reused in other programs.

c. (Amateur) Some part of the code could be reused in other programs.

d. (Unsatisfactory) The code is not organized for reusability.

4. Documentation

a. (Exceptional) The documentation is well written and clearly explains what the code is accomplishing and how.

b. (Acceptable) The documentation consists of embedded comment and some simple header documentation that is somewhat useful in understanding the code.

c. (Amateur) The documentation is simply comments embedded in the code with some simple header comments separating routines.

d. (Unsatisfactory) The documentation is simply comments embedded in the code and does not help the reader understand the code.

5. Delivery

a. (Exceptional) The program was delivered on time.

b. (Acceptable) The program was delivered within a week of the due date.

c. (Amateur) The code was within 2 weeks of the due date.

d. (Unsatisfactory) The code was more than 2 weeks overdue.

6. Efficiency

a. (Exceptional) The code is extremely efficient without sacrificing readability and understanding.

b. (Acceptable) The code is fairly efficient without sacrificing readability and understanding.

c. (Amateur) The code is brute force and unnecessarily long.

d. (Unsatisfactory) The code is huge and appears to be patched together.

Criteria Weight

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Specifications 20%

Readability 20%

Reusability 20%

Documentation 10%

Delivery 10%

Efficiency 20%

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This course is also assessed through the embedded measurements described in the following section.

Grading System

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Exams

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There will be three exam, namely: prelim, midterm, and final, with respective total scores and schedules will be determined and agreed in the class.

Programming Activities

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Laboratory activities will be assessed with the programming rubrics.

Grading Scheme

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The rate will be determined based on the following scheme:

Measurement Weight

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Prelim Exam 20%

Midterm Exam 20%

Final Exam 25%

Quizzes 15%

Laboratory Activities 20%

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The student should be able to get the \*\*minimum rate of 60% to pass the course\*\*. The rate is mapped to the actual grade based on the following scale:

Rate Scale Grade

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95.64 -- 100+ 1.0

91.18 -- 95.63 1.25

86.73 -- 91.17 1.5

88.27 -- 86.72 1.75

77.82 -- 82.26 2.0

73.36 -- 77.81 2.25

68.91 -- 73.35 2.5

64.45 -- 68.90 2.75

60.00 -- 64.44 3.0

below -- 59.99 5.0

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**Prepared by: Recommending Approval: Approved by:**

**\_\_\_Julieto E. Perez\_\_\_\_\_\_ \_\_\_Prof. Emily S. Tabanao\_\_\_\_ \_\_\_Dr. Rabby Q. Lavilles\_\_**

Faculty Chairperson, Dept. of Computer Science Dean