

**SCHOOL OF INFORMATION TECHNOLOGY**

General Luna Road, Baguio City

**UB VISION**

In pursuit of perfection, the University of Baguio is committed to provide balanced quality education by nurturing academic excellence, relevant social

skills and ethical values in a fun-learning environment.

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| **UB MISSION**    The University of Baguio educates individuals to be empowered professionals in a global community. | **SCHOOL MISSION**  The School of Information Technology is committed to create a dynamic learning environment conducive to the development of globally competitive IT professionals. |
| **INSTITUTIONAL OBJECTIVES**  The University of Baguio aims to produce a graduate who:   1. exemplifies a higher standard of learning; 2. manifests the mastery of relevant skills; 3. upholds a conduct that is rightful and just; 4. undertakes scientific and significant researches; 5. advocates sustainable programs for the community and the environment; and 6. leads and demonstrates exemplary performance in the field of specialization. | **SCHOOL OBJECTIVES**  The School of Information Technology aims to produce a graduate who:   1. applies and innovates methodologies in developing and managing computing solutions; 2. adapts to the fast-changing technologies in diverse environments; 3. exemplifies desirable behavior and attributes; 4. conducts relevant researches for the innovation of Information Technology products and services; 5. initiates and participates in community-based activities that contribute to sustainable development; and 6. utilizes leadership qualities for commendable performance in the field of endeavor. |
| **INSTITUTIONAL CORE VALUES**  **COMPETENCE + INTEGRITY = SERVICE**  COMPETENCE: University of Baguio is committed to nurturing excellent professionals.  INTEGRITY: University of Baguio is committed to cultivating a community with ethical values.  SERVICE: University of Baguio is dedicated to building a community that advocates sustainable programs for the society and the environment. | **PROGRAM OBJECTIVES**  The BSCS program aims to produce a graduate who:   1. implements competently the design of algorithmically complex software; 2. handles skillfully technological advancements as an algorithm specialist; 3. exemplifies suitable qualities and behavior; 4. performs researches beneficial for the advancement of networking products and processes; 5. leads in community-related activities aligned to the area of specialization; and 6. acts as the prime mover in Algorithm Engineering. |

1. **LEARNING OUTCOMES**

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| **Program Outcomes Common to all Types of Schools:**  The graduates have the ability to: | **PROGRAM OBJECTIVES** | | | | | |
| **P1** | **P2** | **P3** | **P4** | **P5** | **P6** |
| 1. Articulate and discuss the latest developments in the specific field of practice; |  |  |  |  |  | ✓ |
| 1. Effectively communicate orally and in writing using both English and Filipino; |  |  |  |  | ✓ |  |
| 1. Work effectively and independently in multi-disciplinary and multi-cultural teams; |  |  |  |  | ✓ |  |
| 1. Act in recognition in recognition of professional, social, and ethical responsibility; and |  |  | ✓ |  |  |  |
| 1. Preserve and promote “Filipino historical and cultural heritage”. |  |  |  |  | ✓ |  |
| **Program Outcomes Common to University:** |  |  |  |  |  |  |
| Graduates of universities participate in the generation of new knowledge or in research and development projects. |  |  |  | ✓ |  |  |
| **Program Outcomes Common to the Discipline:**  The graduates have the ability to: |  |  |  |  |  |  |
| 1. Analyze complex problems, and identify and define the computing requirements needed to design an appropriate solution; | ✓ |  |  |  |  |  |
| 1. Apply computing and other knowledge domains to address real-world problems; | ✓ |  |  |  |  |  |
| 1. Design and develop computing solutions using a system-level perspective; |  | ✓ |  |  |  |  |
| 1. Utilize modern computing tools. |  |  |  | ✓ |  |  |
| **Program Outcomes for Bachelor of Science in Computer Science:**  The graduates have the ability to: |  |  |  |  |  |  |
| 1. apply knowledge of computing fundamentals, knowledge of a computing specialization, and mathematics, science, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements; | ✓ |  |  |  |  |  |
| 1. identify, analyze, formulate, research literature, and solve complex computing problems and requirements reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines; | ✓ |  |  |  |  |  |
| 1. apply mathematical foundations, algorithmic principles and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices; |  | ✓ |  |  |  |  |
| 1. have knowledge and understanding of information security issues in relation to the design, development and use of information systems; |  | ✓ |  |  |  |  |
| 1. design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations; |  | ✓ |  |  |  |  |
| 1. create, select, adapt and apply appropriate techniques, resources and modern computing tools to complex computing activities, with an understanding of the limitations to accomplish a common goal; |  |  |  | ✓ |  |  |
| 1. function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings; |  |  |  |  | ✓ |  |
| 1. communicate effectively with the computing community and with society at large about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions; |  |  |  |  | ✓ |  |
| 1. recognize the legal, social, ethical and professional issues involved in the utilization of computer technology and be guided by the adoption of appropriate professional, ethical and legal practices; |  |  | ✓ |  |  |  |
| 1. recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional. |  |  | ✓ |  |  |  |

**II. Program Learning Outcomes (PLO)**

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| **PLO** | **Performance Indicators. The graduate should be able to** |
| 1. apply knowledge of computing fundamentals, knowledge of a computing specialization, and mathematics, science, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements; | 1. model and critique processes using math expressions, logic and statistics; 2. construct formal proofs; 3. produce simplified models for processes; 4. apply standardized solution formula and models to solve problems; 5. implement mathematical algorithms and can correctly code logical expressions; 6. characterize and interpret data and results and apply the conclusion to support algorithm development. |
| 1. identify, analyze, formulate, research literature, and solve complex computing problems and requirements reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines; | 1. engage in research to find multiple alternatives for solving a problem; 2. conduct feasibility studies; 3. decompose a problem into components; 4. modify a problem definition as new information arrives; 5. formulate solution strategies; 6. solicit requirements from users and flexibly integrate new information; 7. estimate behavior of possible solutions and seek information needed for the solution; 8. develop a comprehensive requirements specification document; 9. map problem components to appropriate language, platforms and hardware; 10. evaluate the space, time, and financial demands of the solution. |
| 1. apply mathematical foundations, algorithmic principles and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices; | 1. construct formal proofs; 2. produce simplified models for processes; 3. apply models to solve problems; 4. understand and reproduce mathematical definitions; 5. apply standardized solution formula; 6. translate a complex model into code; 7. create logically correct code through the use of mathematical algorithms; 8. analyze the code’s complexity and efficiency; 9. provide formal verification of the code’s correctness; 10. 10. considered design trade-off in designing and developing a computer-based system. |
| 1. have knowledge and understanding of information security issues in relation to the design, development and use of information systems; | 1. familiar with security basics and current trends in security and privacy; 2. establish and follow effective practices for developing secure code; 3. attend at least one seminar related to information security. |
| 1. design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations. | 1. construct standard design documents to support the approach to a project; 2. engage in research to find multiple alternatives to well-understood technologies and development methodologies and use them to produce solutions to a problem; 3. apply software engineering principles to produce multiple solutions to a problem using high level languages; 4. create a structured set of tests and use them to validate a system’s specifications and identify a system’s fault. |
| 1. create, select, adapt and apply appropriate techniques, resources and modern computing tools to complex computing activities, with an understanding of the limitations to accomplish a common goal; | 1. research and successfully identify applicable and appropriate tools; 2. use different hardware and software platforms for computing; 3. use the state-of-the-art techniques and tools in the computing field. |
| 1. function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings; | 1. recognize team dynamics and work in leadership and non-leadership roles; 2. delegate and accept responsibilities effectively; 3. assume a designated role in the group; 4. mutually respect diversity of team members strengths and weaknesses; 5. share and accept ideas; 6. mentor others; 7. contribute a fair share to the workload. |
| 1. communicate effectively with the computing community and with society at large about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions; | 1. articulate ideas for the assigned task; 2. use infographics to assess, interpret and explain information; 3. conform to the prescribed format and use correct grammar and spelling; 4. provide references to support the documents; 5. plan and deliver an oral presentation for the assigned task; 6. manage time, engage the audience, respond to questions appropriately and exude confidence; 7. critique the presentation and identify the strengths and weaknesses; 8. convey instructions clearly. |
| 1. recognize the legal, social, ethical and professional issues involved in the utilization of computer technology and be guided by the adoption of appropriate professional, ethical and legal practices; | 1. articulate understanding of multiple points-of-view pertaining to legal, social and ethical issues in the field of computing; 2. articulate appropriate elements of a code of ethics in reference to a specific situation; 3. apply laws, proper etiquette and proactive social behavior in IT practices. |

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| 1. recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional. | 1. use libraries, online repositories and web tools for effectively and efficiently identifying pertinent information; 2. apply learnings from conferences, seminars, trainings and other avenues for professional development; 3. analyzes new content by decomposing, comparing and contrasting, recognizing patterns, and interpreting information and draw reasonable generalizations; 4. articulate how new information relates to prior knowledge; 5. apply new knowledge and skills to solve computing problems 6. demonstrate ability to reflect on their learning process. |
| ***Course Description:***  This course teaches students to design user interfaces based on the capabilities of computer technology and the needs of human factors. The course covers human capabilities, design principles, prototyping techniques, evaluation techniques, and the implementation of graphical user interfaces. Deliverables include short programming assignments and a semester-long individual/group project. Students design a user interface for a system and implement a prototype from a list of informal requirements. Students design a user interface by a design process based on current human–computer interaction principles. | |

1. **: LEARNING PLAN**

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| **COURSE COVERAGE – FIRST GRADING (LECTURE)** | | | | | | | |
| WEEK NO | COURSE LEARNING OUTCOMES | COURSE CONTENT | DURATION | TEACHING-LEARNING ACTIVITIES (TLA) | ASSESSMENT TASKS (AT) | RESOURCES | PRC TOS |
| 1 | 1. critically evaluate interactive products and construct new implementation based on the understanding of human-computer interaction.   PLO2-PI1  PLO6-PI1 | Introduction, HCI principles, and guidelines | 3 hours | Lecture-discussion  Critiquing  Assigned Reading  Peer feedback | Quiz  LO1-LO8  Free writing  Assignment  LO1-LO8  Recitation  LO1-LO8  Reflective Learning statements, buzz sessions  LO1-LO8  Small group activities  LO3  workshop  LO6  Self-check/Self-Assessment  LO1-LO6 | Handouts  Laptop  LCD projector  Self-Assessment Sheets  Design thinking kit  Task sheets | Not Applicable |
| 1. explain how interaction design relates to human-computer interaction and other fields and apply good its principles to own designs.   PLO6:PI1 |
| 2-4 | 1. explain through presentation/discussion the application of the main principles of a user-centered approach in hci.   PLO6:PI1, PLO7:PI1-PI5,  PLO8:PI5-PI7 | Design Process:  Iteraction design basics  HCI in the software process  Design rules  Implementation support  Universal Design | 4 hours |  |
| 1. present and discuss a simple lifecycle model of interaction design;   PLO8:PI5-PI7 |  |
| 1. Identify the steps and perform activities conducted in the interaction design process.   PLO2-PI1  PLO6-PI1,PI2, PI3 |  |
| 5 | LO6. Describe what a conceptual model is and use interface metaphors as part of a conceptual model PLO6:PI3, PLO7:PI5,  PLO8:PI5-PI7,  PLO7:PI1-PI5  PLO9-PI2 | Conceptualizing Interaction:  Models,  Interface Metaphors, Interaction types | 3 hours |  |
| 6 | First Grading Examinations (lec) | | 2 hours |  | | | |
|  |  | Subtotal | 12 hours |

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| **COURSE COVERAGE – FIRST GRADING (LABORATORY)** | | | | | | | |
| WEEK NO | COURSE LEARNING OUTCOMES | COURSE CONTENT | DURATION | TEACHING-LEARNING ACTIVITIES (TLA) | ASSESSMENT TASKS (AT) | RESOURCES | PRC TOS |
| 1 | LO1. familiarize and use correct HTML syntax, and appropriate HTML elements and attributes based on W3C standards through the use of appropriate HTML document editors/tools;  PLO1:PI1  PLO6:PI1-PI3 | Webpage development with HTML:  Development environment  Basic Tags  Formatting Tags  Lists | 1 hour | Lecture-discussion  Demonstration  Critiquing | LO1-LO33  Quiz  Free writing  LO1-LO33  Assignment  Recitation  LO1-LO33  Reflective Learning statements, buzz sessions  LO1-LO33  Small group activities  workshop  Self-check/Self-Assessment | Handouts  Laptop  LCD projector  Self-check Sheets  Task sheets |  |
| LO2. validate HTML documents through online validation tools that checks the markup validity of Web documents in HTML.  PLO6:PI1-PI3 | 2 hours |  |
| 2-5 | LO3. efficiently construct linked HTML documents with standard html formatting tags, form controls, correct and/or appropriate media type and content to HTML documents while observing applicable copyright laws and permissible use of downloaded media;  PLO1:PI3-PI4  PLO3-PI10  PLO6:PI1-PI3  PLO9-PI3 | Tables  Media  Links  Forms | 12 hours |  |
| 6 | First Grading Examination (lab) | | 3 hours |  | | | |
|  |  | Subtotal | 18 hours |

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| **COURSE COVERAGE – MIDTERMS (LECTURE)** | | | | | | | | |
| WEEK NO | COURSE LEARNING OUTCOMES | COURSE CONTENT | DURATION | TEACHING-LEARNING ACTIVITIES (TLA) | ASSESSMENT TASKS (AT) | RESOURCES | | PRC TOS |
| 7 | 1. explain through presentation/discussion what cognition is and it’s relevance in interaction design   PLO6:PI1, PLO7:P5,  PLO8:PI5-PI7 | Cognition and Perception | 2 hours |  | LO1-LO33  Quiz  Free writing  LO1-LO33  Assignment  Recitation  LO1-LO33  Reflective Learning statements, buzz sessions  LO1-LO33  Small group activities  workshop  Self-check/Self-Assessment | Handouts  Laptop  LCD projector  Self-check Sheets  Task sheets | |  |
| 1. explain through infographics how memory can be enhanced through technology aids   PLO6:PI1, PLO7:P5,  PLO8:PI2-PI7 |  |
| 1. discuss what and how attention affects people’s ability to multitask.   PLO6:PI1, PLO7:P5,  PLO8:PI5-PI7 |  |
| 8 | 1. explain through multimedia (i.e. video, interactive presentation, etc.) what is meant by social interaction and it’s importance in interaction design   PLO6:PI1, PLO7:P5,  PLO8:PI5-PI7 | Social Interaction:  Introduction  Types of Social Interaction  Social interaction in UI design | 2 hours |  |
| 1. discuss how social mechanisms used by people in communicating and collaborating   PLO6:PI1, PLO7:P5,  PLO8:PI5-PI7 |  |
| 9-10 | 1. explain how our emotions relate to behavior and user experience.   PLO6:PI1  PLO8:PI7 | Designing Experience:  Emotional Interaction | 3 hours |  |
| 1. describe how technologies can be designed to change people's attitudes and behavior.   PLO8:PI7 |  |
| 10-11 | 1. describe UX design and it’s relationship and role related to the design discipline   PLO8:PI5-PI7 | UX Design | 3 hours |  |
| 1. identify the analytical and technical aspect of UX design   PLO8:PI5-PI7 |  |
| 1. describe how the individual features of the design impact user experience.   PLO8:PI5-PI7 |  |  | |
| 12 | Midterm Examination (lec) | | 2 hours |  | | | | |
|  |  | Subtotal | 12 hours |

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| **COURSE COVERAGE – MIDTERM (LABORATORY)** | | | | | | | |
| WEEK NO | COURSE LEARNING OUTCOMES | COURSE CONTENT | DURATION | TEACHING-LEARNING ACTIVITIES (TLA) | ASSESSMENT TASKS (AT) | RESOURCES | PRC TOS |
| 7 | LO4. discuss the importance of CSS to HTML in the context of the World Wide Web and HCI; | Introduction to CSS  CSS properties and attributes  CSS implementation | 6 hour | Lecture-discussion  Demonstration  Critiquing | LO4-7  Styled Web pages | Handouts  Laptop  LCD projector  Self-check Sheets  Task sheets |  |
| LO5 identify the basic CSS syntax used to implement design principles in front-end web development.  PLO6:PI1-PI3 |  |
| LO6 customize the appearance of web pages to suit user needs by implement flexibility in design and providing an intuitive and pleasing experience for everyone;  PLO6:PI1-PI3 |  |
| 8-11 | LO7 build a website that is styled based on established standards of design in the aspects of human-computer interaction, ux/ui design methods design and processes.  PLO1:PI3-PI4  PLO8:PI5-PI7  PLO6:PI1-PI3 | Responsive Web page design | 3 hours |  |
| 12 | Midterm Examination (lab) | | 3 hours |  | | | |
|  |  | Subtotal | 18 hours |

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| **COURSE COVERAGE – FINALS (LECTURE)** | | | | | | | |
| WEEK NO | COURSE LEARNING OUTCOMES | COURSE CONTENT | DURATION | TEACHING-LEARNING ACTIVITIES (TLA) | ASSESSMENT TASKS (AT) | RESOURCES | PRC TOS |
| 13-14 | 1. explain the rationale and rules for an effective interface design methodology in order to establish a criteria for evaluating the quality of user interfaces. | Introduction to User Interfaces  Natural UI | 4 hours | Lecture-discussion  Critiquing  Assigned Reading  Peer feedback | LO1-LO33  Quiz  Free writing  LO1-LO33  Assignment  Recitation  LO1-LO33  Reflective Learning statements, buzz sessions  LO1-LO33  Small group activities  workshop  Self-check/Self-Assessment | Handouts  Laptop  LCD projector  Self-check Sheets  Task sheets |  |
| 15-17 | 1. explain how to design user interfaces that anticipate what users might need to do and ensuring that the interface has elements that are easy to access, understand, and use to facilitate those actions.   PLO8:PI5-PI7 | Interface Basics | 6 hours |  |
| 1. describe how to bring together concepts from interaction design, visual design, and information architecture to create an interface with elements that are consistent and predictable in their choices and their layout.   PLO8:PI5-PI7 |  |
| 18 | Midterm Examination (lec) | | 2 hours |  | | | |
|  |  | Subtotal | 12 hours |  |  |  |  |

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| **COURSE COVERAGE – FINALS (LABORATORY)** | | | | | | | |
| WEEK NO | COURSE LEARNING OUTCOMES | COURSE CONTENT | DURATION | TEACHING-LEARNING ACTIVITIES (TLA) | ASSESSMENT TASKS (AT) | RESOURCES | PRC TOS |
| 13 | LO8 Discuss the use and importance of JavaScript in frontend webpage development.  PLO2 | Introduction to JavaScript | 1 hours | Lecture-discussion  Demonstration  Critiquing | LO8-LO9  Styled and dynamic Web pages  LO10  Individual project (Published website) | Handouts  Laptop  LCD projector  Self-Assessment Sheets  Task sheets | Not Applicable |
| 13 | LO9 Create simple JavaScript functions and implement them in webpages.  PLO2- PI4, PI5, PI6  PLO6-PI1,PI2, PI3 | JavaScript Functions | 8 hours |  |
| 14-17 | LO10 Plan, design, develop, and publish a simple web site that is usable and attractive on all devices.  PLO2- PI4, PI5, PI6  PLO6-PI1,PI2, PI3 | Plan, design, develop, and publish front-end web site with the core front-end development technologies (HTML, CSS, and JavaScript | 6 hours |  |
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| 18 | Final Project Presentation (lab) | | 3 hours |  | | | |
|  |  | Subtotal | 15 hours |

**IV. REFERENCES**

**Available in the library:**

**Other references of the teacher (not in the library):**

**V. ABOUT THE TEACHER/COURSE**

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| **Instructor’s Information** | **(to be given during the class orientation)** |
| **Instructor’s consultation time** | **(to be given during the class orientation)** |
| **Classroom policies and instructions** | **(to be given during the class orientation)** |
| **Grading system** | **(to be given during the class orientation; refer to Student Handbook)** |
| **Major requirement/s** | **\*\*this is/are the requirement/s that is/are to be submitted towards the end of the term hence, should be given during the first week of classes, or those that are to be submitted every grading period** |

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|  | **NAME** | **POSITION** | **SIGNATURE** | **DATE** |
| Preparer | Erna-kristi N. Martinez | Faculty, SIT |  | July 2018 |
| Noted | Elsa Ong-ongawan | Head, AMS Section-Library |  | July 2018 |
| Reviewed and Recommending Approval | Hydi D. Toyeng | Program Chair-BSCS |  | July 2018 |
| Approved | Engr. Elisabeth D. Calub | Dean, School of Information Technology |  | July 2018 |