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| BUBT THEORY COURSE OUTLINE **Bangladesh University of Business and Technology (BUBT)**  **Faculty of Engineering& Applied Sciences (FEAS)**  **Department of Computer Science and Engineering (CSE)** | | | | | | | |
|  |  | | | | | | |
| 1 | Program | | | B.Sc. Engg. in CSE | | | |
| **2** | **Course Code** | | | CSE 407 | | | |
| **3** | **Course Title** | | | Project Management and Professional Ethics | | | |
| **4** | **Course Type** | | | Core Course | | | |
| **5** | **Academic Session** | | | Summer 2021 | | | |
| **6** | **Credit Hour** | | | 2.0 | | | |
| **7** | **Intake** | | | 39 | | | |
| **8** | **Section** | | | 1 | | | |
| **9** | **Pre-requisites** | | | None | | | |
| **10** | **Campus** | | | Permanent Campus | | | |
| **11** | **Course Teacher** | | | |  |  |  | | --- | --- | --- | | **Name:** Nourin Khandaker | **Designation**: Lecturer | | | **Specialization**: Machine Learning, Computer Vision, Deep Learning, Internet of Things. | | | | **Room No. 303/B1** | **Email:** nourin\_khandaker@bubt.edu.bd | **Cell No**. 01521255145 | | | | |
| **12** | **Class Schedule** | | | |  |  |  | | --- | --- | --- | | **Class Day** | **Class Hours** | **Class Room** | | Sunday | 02:50 PM – 04.20 PM | 218 (B-2) | | Tuesday | 08:30 AM – 10:00 AM | 313(B-1) | | | | |
| **13** | **Counselling Schedule** | | | |  |  |  | | --- | --- | --- | | **Class Day** | **Class Hours** | **Class Room** | | Sunday | 11:30 AM – 01.00 PM | 310(B-1) | | Monday | 10:00 AM – 11.30 AM | 310(B-1) | | | | |
| **14** | **Course Objectives** | | | The objective of Project Management is to provide information for decision making on planning, initiating, organizing, and controlling the operations of the subsystems of the firm and to provide a synergistic organization in the process. This course enables the students to gain the knowledge of managing a digital organization.  The prime objective is to increase students’ ability to deal effectively with moral complexity in engineering practice. Alternatively, the Professional Ethics emphasis on the act of morally desirable ways towards moral commitment and responsible conduct. | | | |
| **15** | **Course Synopsis** | | | **Project Management:** Introduction of Project Management, Functional business processes, Systems for Business Intelligence, Collaboration, Applications of social business, Business benefit of Collaboration and social business, Information Systems Organization and Strategy, Feature and Environment of Organizations, Organizational and Behavioral impact, Challenges of Big data, Enhance Decision Making, Managing Global System.  **Professional** **Ethics**: Foundation of professional Ethics, Engineering ethics for engineers and engineering student, Basic ethical concepts, basic theory of professional ethics, professional codes of ethics, moral reasoning and establishing engineers as social experimenters. GlobalIssues, PersonalandOrganizationalEthics,Different case studies for resolving various ethical dilemmas and making proper decision. Model for thinking about Ethical, Social and Political issues, key technological trend for Ethical issues, Ethical Analysis, Candidate Ethical Principles. | | | |
| **16** | **Text Book** | | | 1. Software Project Management by Bob Hughes and Mike Cotterell, 5th Edition  2. System Analysis and Design by Kendall & Kendall, 9th edition  3. Ethics in Engineering by Mike W. Martin & Roland Schinzinger (latest edition);  4. A Text Book on Professional Ethics and Human Values - RS Naagarazzan | | | |
| **17** | **Reference Book** | | | 1. *Information Systems Management in Practice* - B. C. Mc Nurlin and R. H. Jr. Sprague  2. *Managing and Using Information Systems: A Strategic Approach* - Keri E. Pearlson and Carol S. Saunders  3. Management Information System- James O’Brien  4. BUSINESS & SOCIETY Ethics and Stakeholder Management-Archie B. Carroll, Ann K. Buchholtz, Seventh Edition | | | |
| **18** | **Course Outcomes (COs)** | | | Upon completing this course students will be able to:  **CO1**: **Understand** Project Management and Professional Ethics concept that are internationally recognized.  **CO2: Identify** ethical problems, dilemmas, and areas of responsibility in engineering practice, both in the development, design, implementation, and use of technical products and processes in professional role.  **CO3**: **Analyze** and synthesizes Project Management and Professional Ethics from a wide variety of sources in a planned and timely manner.  **CO4:** A**pply** effective, creative and innovative ethical solutions both independently and cooperatively to current and future problems of Project Management and Professional Ethics. | | | |
| **Mapping of COs to POs** | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | CO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | | CO1 | √ |  |  |  |  |  |  |  |  |  |  |  | | CO2 | √ |  |  |  |  |  |  |  |  |  |  |  | | CO3 |  |  |  |  |  |  |  |  |  |  | √ |  | | CO4 |  |  |  |  |  |  |  | √ |  |  |  |  | | | | |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **CO No.** | **PO No.** | **Bloom’s**  **Domain / Level** | **Delivery Methods / Activities** | **Assessment Tools** | | CO1 | PO1 | Cognitive / Understanding | Class Lecture | Midterm | | CO2 | PO1 | Cognitive / Understanding | Class Lecture | Midterm and Final | | CO3 | PO11 | Cognitive /Analyzing | Class Lecture | Midterm and Final | | CO4 | PO8 | Cognitive/ Applying | Class Lecture | Final | | | | | | | |
| **19** | **Teaching Strategy** | Maximum topics will be covered from the textbook. For the rest of the topics, reference books will be followed. Some class notes will be uploaded on the web. White board will be used for most of the time. Multimedia projector and a PC will be used for the convenience of the students. Students must participate in classroom discussions for case studies and problems solving. | | | | | |
| **20** | **Assessment and Marks Distribution:** | |  |  |  | | --- | --- | --- | | Class Participation | **:** | 10% | | Assignment | **:** | 10% | | Class Test | **:** | 10% | | Midterm Examination | **:** | 30% | | Final Examination | **:** | 40% | | | | | | |
| **21** | **Lecture Plan (Weekly Schedule)** | | | | | | |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Week** | **Lecture #** | **Selected Topics** | **Chapter #** | **COs** | **Assessment** | | 1 | 1 | **Foundation of Software Project Management:** Software Crisis, Challenges of Software Engineering, Well-Engineered Software Project Management, Software Engineering VS Project Management, Portfolio / Program / Project**.** |  | CO1 | **Mid Term Exam**  **30** | | 2 | **Foundations of ENGINEERING ETHICS FOR ENGINEERS & ENGG. STUDENTS**: Washington Accord (WA) & International Engineering Alliance (IEA) – Graduate Attributes and Professional Competency. |  | CO1 | | 2 | 3 | Basic ethical concepts, basic theory of professional ethics, professional codes of ethics, moral reasoning and establishing engineers as social experimenters. |  | CO2 | | 4 | Software Project Management (SPM), SPM Tasks, Effective Project Management, Software Projects vs other Type of Projects, activates covered by SPM | **CT-1** | CO2 | | 3 | 5 | Framework of Software Project Management, Reasons for Failure Software Project, Success Factor. |  | CO3 | | 6 | Ethical issues and commitment to safety and engineer’s responsibility upholding paramount health, safety and welfare of the public in the performance of professional duties applying |  | CO3 | | 4 | 7 | Ethical issues and commitment to safety and engineer’s responsibility upholding paramount health, safety and welfare of the public in the performance of professional duties applying |  | CO3 | | 8 | Projects are initiated and selected, define a business problem, and determine the feasibility of a proposed project. |  | CO3 | | 5 | 9 | Evaluate hardware and software and the way it supports human interactions with technology. |  | CO3 | | 10 | Managing safe system of work and ethical responsibility for  engineering design, construction, erection, installation, execution, supervision and Quality Assurance & Quality Control | **CT-2** | CO3 | | 6 | 11 | Managing safe system of work and ethical responsibility for  engineering design, construction, erection, installation, execution, supervision and Quality Assurance & Quality Control |  | CO3 | | 12 | Forecast and analyze tangible and intangible costs and benefits of software project. |  | CO3 | | 7 | 13 | Case study |  | CO2 | | 14 | Reviewing Class for Engineering Ethic |  | CO2 | | **8** | **Midterm Examination** | | | | | | 9 | 15 | Workplace Risk & Liabilities of Engineers: Assessing & reducing risk and mitigation of risk and becoming a responsible engineer in combating risk and ensuring safety. |  | CO3 | Final Exam  40 | | 16 | Workplace Responsibilities & Rights, Rights of Engineers. |  | CO3 | | 10 | 17 | Manage a project by preparing a budget, creating a work breakdown structure, scheduling activities, and controlling the schedule and costs. | **CT-3** | CO3 | | 18 | Manage a project by preparing a budget, creating a work breakdown structure, scheduling activities, and controlling the schedule and costs. |  | CO3 | | 11 | 19 | Build and manage a project team |  | CO2 | | 20 | Improvement of communication skills through teamwork and presentation session. |  | CO3 | | 12 | 21 | Orientation of students for research and development through submitting mini- research paper on the Code of Ethics and Ethical Issues concerning Engineering  Professional Activities within 1500-2000 words. | **CT-4** | CO2 | | 22 | Professionally write and present an effective systems proposal, concentrating on both content and design |  | CO2 | | 13 | 23 | Different case studies for resolving various ethical dilemmas and making proper decision. |  | CO4 | | 24 | Case Study |  | CO4 | | 14 | 25 | Real world problem solving |  | CO4 | | 26 | Final Exam Review Class |  |  | | **15** | **Final Exam** | | | | | | | | | | | |
| **22** | **Overall CO Assessment Criteria** | | Assessment methods of COs are given below:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Assessment Area** | **CO** | | | | **Assessment Area Mark** | |  | **CO1** | **CO2** | **CO3** | **CO4** |  | | Class Participation |  |  |  |  |  | | Assignment/Presentation |  |  |  |  |  | | Class Test |  |  |  |  |  | | Midterm Exam | 10 | 10 | 10 |  | 30 | | Final Exam |  | 10 | 10 | 20 | 40 | | **Total Mark** | **10** | **20** | **20** | **20** | **70** | | | | | |
| **23** | **Rubrics** | | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **COs**  **(Bloom’s Level)** | **Excellent**  **(80%-100%)** | **Good**  **(70%-79%)** | **Satisfactory**  **(60%-69%)** | **Poor**  **(40%-59%)** | **Unsatisfactory**  **(0-39%)** | **Marks**  **(70)** | | CO1  (Understanding) | Answer is complete and sufficient detail provided to support issues related to the question. And also deals fully with the entire question. | Answer is brief with sufficient detail provided to support issues were introduced. And most of the basic details are included but some are missing. | Answer is brief with insufficient detail provided to support issues were introduced. | Answer is incomplete and excessive discussion of unrelated issues.  And serious gaps in the basic details. | None of the relevant details were included or didn’t answer. |  | | CO2  (Understanding) | Answer is complete and sufficient detail provided to support issues related to the question. And also deals fully with the entire question. | Answer is brief with sufficient detail provided to support issues were introduced. And most of the basic details are included but some are missing. | Answer is brief with insufficient detail provided to support issues were introduced. | Answer is incomplete and excessive discussion of unrelated issues.  And serious gaps in the basic details. | None of the relevant details were included or didn’t answer. |  | | CO3  (Applying) | The question is answered appropriately by applying the suggested method in the question. | The question is answered briefly by applying the suggested method in the question. | The question is answered correctly by applying the suggested method in the question but some steps are missing. | The question is answered incompletely by applying the suggested method in the question but some steps are correct. | No attempt to implement the suggested method. |  | | CO4  (Analyzing) | A clear, complete, and properly ordered chain of analyzing steps (i.e. proper explanation of the procedure) is followed to answer the question. | The chain of analyzing steps is complete and correctly ordered but lack of expected explanation. | One or more intermediate analyzing steps are missing or unclear, but the correctness of the analysis is not compromised. | One or more intermediate analyzing steps are missing or unclear to answer the question. | The stated chain of analysis does not lead to the stated question. |  | | | | | |
| **24** | **Grading Policy** | | The following chart will be followed for grading. This has been customized from the guideline provided by the School of Engineering and Computer Science.   |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | A+ | A | A- | B+ | B | B- | C+ | C | D | F | | ≥ 80 | 75-<80 | 70-<75 | 65-<70 | 60-<65 | 55-<60 | 50-<55 | 45-<50 | 40-<45 | <40 | | | | | |
| **25** | **Additional Course Policies** | | Assignments | | There will be at least two assignments. Average marks of the assignments will be counted. No late homework will be accepted.  ***Any kind of copy/manipulation in assignment will carry zero mark.***  Two or more copied assignments will carry zero mark in all assignments. **Zero tolerance will be shown in this regard.** Solutions to assignment problems will be provided through web and on hand. | | |
| Class Test | | There will be at least three class tests (CT). Best two of three or best three of four CTs will be counted. Both of regular and surprise CTs can be conducted. | | |
| Exams | | CT, Mid-term and final exam will be closed book, closed notes. Mobile phone is strictly prohibited in exam hall. Students are insisted to carry their own watch and synchronize time during exam hours. | | |
| Test Policy | | If a student is absent from class test anyway and made no report to the class teacher personally beforehand, his/her score for that test will be zero. No make-up for the class test will be allowed as 2 of 3 or 3 of 4 CTs are being considered. No make-up for Mid-exam will be entertained without physical presence and recommendation of the guardian along with written permission of the department. Make-up of Mid-exam may be much harder than the regular one. | | |
| **26** | **Additional Information** | | 1. Academic Calendar Fall 2020-21: http://www.bubt.edu.bd/academics/academic-calendar. 2. Academic Policies: http://www.bubt.edu.bd/academics/academic-rules-a-regulations. 3. Grading & Evaluation: <http://www.bubt.edu.bd/academics/academic-rules-a-regulations>. 4. Proctorial Rules: http://www.bubt.edu.bd/administrator/proctors-office. | | | | |
| **27** | **Bloom’s Taxonomy for Teaching-Learning** | | | | | | |
|  | Bloom's Taxonomy is a set of three hierarchical models used to classify educational learning objectives into levels of complexity and specificity. The three lists cover the learning objectives in Cognitive, Affective and Psychomotor domains. The Cognitive domain list has been the primary focus of most education and is frequently used to structure curriculum learning objectives, assessments and activities. The three domains and respective levels are illustrated below.   |  |  |  | | --- | --- | --- | | **Cognitive [C]** (Knowledge-based) | **Affective [A]** (Emotion-based) | **Psychomotor [P]** (Action-based) | | 1. Remembering | 1. Receiving | 1. Imitating | | 1. Understanding | 1. Responding | 1. Manipulating | | 1. Applying | 1. Valuing | 1. Précising | | 1. Analyzing | 1. Organizing | 1. Articulating | | 1. Evaluating | 1. Characterizing | 1. Naturalizing | | 1. Creating | --- --- --- | --- --- --- | | | | | | | |
| **28** | **Descriptions of Cognitive Domain (Anderson and Krathwohl’s Taxonomy 2001):**  The **cognitive domain** involves the development of our mental skills and the acquisition of knowledge. | | | | | | |
|  | |  |  |  |  | | --- | --- | --- | --- | | **Level** | **Category** | **Meaning** | **Keywords** | | C1 | Remembering | Recognizing or recalling knowledge from memory. Remembering is when memory is used to produce or  retrieve definitions, facts, or lists, or to recite previously learned information. | Define, describe, draw, find, identify, label, list, match, name, quote, recall, recite, tell, write | | C2 | Understanding | Constructing meaning from different types of functions be they written or graphic messages or activities like interpreting, exemplifying, classifying, summarizing, inferring, comparing, or explaining. | Classify, compare, exemplify, conclude, demonstrate, discuss, explain, identify, illustrate, interpret, paraphrase, predict, report | | C3 | Applying | Carrying out or using a procedure through executing, or implementing. Applying relates to or refers to situations where learned material is used through products like models, presentations, interviews or simulations. | Apply, change, choose, compute, dramatize, implement, interview, prepare, produce, role play, select, show, transfer, use | | C4 | Analyzing | Breaking materials or concepts into parts, determining how the parts relate to one another or how they interrelate, or how the parts relate to an overall structure or purpose. Mental actions included in this function are differentiating, organizing, and attributing, as well as being able to distinguish between the components or parts. When one is analyzing, he/she can illustrate this mental function by creating spreadsheets, surveys, charts, or diagrams, or graphic representations. | Analyze, characterize, classify, compare, contrast, debate, deconstruct, deduce, differentiate, discriminate, distinguish, examine, organize, outline, relate, research, separate, structure | | C5 | Evaluating | Making judgments based on criteria and standards through checking and critiquing. Critiques, recommendations, and reports are some of the products that can be created to demonstrate the processes of evaluation. | Appraise, argue, assess, choose, conclude, critique, decide, evaluate, judge, justify, predict, prioritize,  prove, rank, rate, select, Monitor | | C6 | Creating | Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Creating requires users to put parts together in a new way, or synthesize parts into something new and different creating a new form or product. This process is the most difficult mental function. | Construct, design, develop, generate, hypothesize, invent, plan, produce, compose, create, make, perform, plan, produce | | | | | | | |
| **29** | **Graduate Attributes (Program Outcomes) for B.Sc. in Engineering Program based on Washington Accord** | | | | | | |
|  | Program Outcomes (POs) are narrower statements that describe what students are expected to know and be able to do by the  Time of graduation. These relate to the knowledge skills and attitudes that students acquire while progressing through the program. The students of the B.Sc. in EEE program are expected to achieve the following graduate attributes or program outcomes at the time of graduation.  **PO1–Engineering knowledge (Cognitive):** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.  **PO2–Problem analysis (Cognitive):** Identify, formulate, research the literature and analyze complex engineering problems and reach substantiated conclusions using first principles of mathematics, the natural sciences and the engineering sciences.  **PO3–Design/development of solutions (Cognitive, Affective):** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety as well as cultural, societal and environmental concerns.  **PO4–Investigation (Cognitive, Psychomotor):** Conduct investigations of complex problems, considering design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.  **PO5–Modern tool usage (Psychomotor, Cognitive):** Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.  **PO6–The engineer and society (Affective):** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.  **PO7–Environment and sustainability (Affective, Cognitive):** Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of, and need for sustainable development.  **PO8–Ethics (Affective):** Apply ethical principles and commit to professional ethics, responsibilities and the norms of the engineering practice.  **PO9–Individual work and teamwork (Psychomotor, Affective):** Function effectively as an individual and as a member or leader of diverse teams as well as in multidisciplinary settings.  **PO10–Communication (Psychomotor, Affective)**: Communicate effectively about complex engineering activities with the engineering community and with society at large. Be able to comprehend and write effective reports, design documentation, make effective presentations and give and receive clear instructions.  **PO11–Project management and finance (Cognitive, Psychomotor):** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work as a member or a leader of a team to manage projects in multidisciplinary environments.  **PO12–Life-long learning (Affective, Psychomotor):** Recognize the need for and have the preparation and ability to engage in independent, life-long learning in the broadest context of technological change. | | | | | | |
| **30** | **Social & Moral Capital** | | | | | | |
|  | Our promises are based on the three cardinal principles:   1. What we do believe (b) What we do practice, and (c) What we will promote   However, students are advised to undertake the following commitments for moral development. | | | | | | |
| 1. To be punctual and attentive in class 2. To maintain inclusive learning environment 3. To ensure mutual respect 4. To be cooperative in group learning. 5. To be innovative and Creative 6. To follow dress code and wearing ID card 7. To be always proactive | | | | | 1. Try to follow and review day to day class 2. To avoid conspiracy 3. To prioritize honesty & faith 4. To be motivated for asking question and encourage feedback 5. To develop attitude for speaking in English 6. Do not ignore to carry out any assignments or commitments 7. To be clean and decent in all levels. | 1. To be sincere for class preparation 2. Do not forget to switch-off the cell phone in class 3. Do not forget to carry course pack and learning stuffs in class 4. To maintain loyalty and trust to the university 5. Must avoid unfair means and plagiarism in exam, reports and assignments 6. Must maintain eco-friendly environment in the campus. |

## Prepared by: Checked by: Approved by: