**COURSE INFORMATION**

1. Course Number : IT6/L
2. Course Name : Fundamentals of Database
3. Course Description : This course is a continuation of Information Management course. It is aligned to Microsoft Technology Associate (MTA 98-368) which covers object-oriented data/database modeling, Advanced SQL, database management system (DBMS), transaction management, database optimization, and database administration. It also includes additional basic topics on data warehousing, client-server architecture, MSSQL Server, and SQLITE. The expected output of the course is the ability to design and create a database application as solution to the newly identified problems of a process.
4. Pre-requisite : CCE104/L
5. Co-requisite : None
6. Credit : 3.0 units (2.0 units Lec / 1.0 unit Lab)
7. Class Schedule : 4 hours Lec / 6 hours Lab per week
8. **Program Educational Objectives (PEO) of BSIT:**

*Two to five years after graduation, the University of Mindanao Information Technology graduates will:*

1. Establish expertise in a specific field of Information Technology and demonstrate professionalism, integrity, innovation, and excellence in any assigned and chosen role;
2. Serve as an agent for change and development of the community peers and the organization through ethical leadership and influence; and
3. Pursue advanced learning through graduate studies, professional improvement and opportunities.
4. **Student Outcomes (SO) of BSIT and their links to PEO**

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| Upon graduation, the BSIT students are expected to: | | **PEO** | | |
| **1** | **2** | **3** |
| **SO a\*** | Able to apply knowledge of computing fundamentals, technical concepts and practices, best practices and standards in the application of core information technologies, mathematics, science, and domain knowledge appropriate for the information technology practice to the abstraction and conceptualization of solution models from defined problems and requirements. | S |  |  |
| **SO b\*** | Identify, formulate, research literature, and analyze user needs and taking them into account to solve complex information technology problems, reaching substantiated conclusions using fundamental principles of mathematics, computing fundamentals, technical concepts and practices in the core information technologies, and relevant domain disciplines. | S | M | M |
| **SO c.1 \*** | Design and evaluate possible solutions for complex computing problems and design and evaluate systems, components or processes that meet specified user needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations. | S | M |  |
| **SO c.2 \*** | An ability to assist in the creation of an effective project plan to implement solution that includes selection, creation evaluation, and administration of IT Systems. | S | S | M |
| **SO c.3 \*** | An ability to effectively integrate IT-based solutions into the user environment. | S | M | M |
| **SO c.4 \*** | An ability to administer delivered information system assuring its appropriateness to the user’s environment. | S | M | M |
| **SO d \*** | Create, select, adapt and apply appropriate techniques, resources and modern computing tools to complex computing activities with an understanding of the limitations. | S | M |  |
| **SO e \*** | Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings. |  | S | M |
| **SO f \*** | Communicate effectively with the computing community and with society at large (in local and international scenes) about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions. | M | S |  |
| **SO g** | Understand and assess societal, health, safety, legal and cultural issues within local and global context, and the consequential responsibilities relevant to professional computing practices. | S | S | M |
| **SO h \*** | Understand and commit to professional ethics, responsibilities, and norms of professional computing practice applying the core values set by the university. | S | S |  |
| **SO I \*** | Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional. | S |  | S |

*Note: \** SO being addressed in this course

Legend: S – Strongly Aligned / M – Moderately Aligned

1. **Course Outcomes (CO) of BSIT and their links to SO**

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| Upon completion of the course, the BSIT students are expected to: | a | b | c | | | | d | e | f | g | h | i |
| c.1 | c.2 | c.3 | c.4 |
| Design a database architecture that fits for an application with effective data management and efficiency considerations. | E | E | E | E | E | E | E | E | E |  | E | E |
| Apply appropriate Query statements to ensure transaction integrity and optimization. | E | E | E | E | E | E | E | E | E |  | E | E |
| Plan a role for database administration need for database environment and requirements. | E | E | E | E | E | E | E | E | E |  | E | E |

Legend: I = Upon attainment of this CO, students will have been ***introduced*** to the SO.

E = Upon attainment of this CO, students will have ***enabled*** themselves to attain the SO.

D = Upon attainment of this CO, students will have ***demonstrated*** partly or fully the SO.

**Vision:** The University of Mindanao envisions to be a leading globally engaged university creating sustainable impact in society.

**Mission:** The University of Mindanao seeks to provide a dynamic learning environment through the highest standard of instruction, research, extension, and production in a private non-sectarian institution committed to democratizing access to education.

**Values:** Excellence, Honesty and Integrity, Innovation, and Teamwork.

**Core Competency:** “Quality affordable open education”

**Educational Philosophy:** Transformative education through polishing diamonds in the rough.

**SO a** Apply knowledge of computing fundamentals, technical concepts and practices, best practices and standards in the application of core information technologies, mathematics, science and domain knowledge appropriate for the information technology practice to the abstraction and conceptualization of solution models from defined problems and requirements

**SO b** Identify, formulate, research literature and analyze user needs and taking them into account to solve complex information technology problems, reaching substantiated conclusions using fundamental principles of mathematics, computing fundamentals, technical concepts and practices in the core information technologies, and relevant domain disciplines.

**SO c .1** Design and evaluate possible solutions for complex computing problems, and design and evaluate systems, components or processes that meet specified user needs with appropriate consideration for public health and safety, culture and societal and environmental considerations.

**SO c.2** Assist in the creation of an effective project plan to implement solution that includes selection, creation evaluation and administration of IT Systems.

**SO c.3** Integrate IT-based solutions into the user environment.

**SO c.4** Administer delivered information system assuring its appropriateness to the use’s environment.

**SO d** Create, select, adapt and apply appropriate techniques, resources and modern computing tools to complex computing activities, with an understanding of the limitations.

**SO e** Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

**SO f** Communication effectively with the computing community and with society at large in local and international scene about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.

**SO g** Understand and assess societal, health, safety, legal and cultural issues within local and global context, and the consequential responsibilities relevant to professional computing practices.

**SO h** Understand and commit to professional ethics, responsibilities, and norms of professional computing practice applying the core values set by the university.

**SO i** Recognize the need, and have the ability to engage in independent learning for continual development as a computing professional.

1. Establish expertise in a specific field of Information Technology and demonstrate professionalism, integrity, innovation and excellence in any assigned and chosen role;

2. Serve as an agent for change and development of the community peers and the organization through ethical leadership and influence; and

3. Pursue advanced learning through graduate studies, professional improvement and opportunities.

**Program Educational Objectives (PEO)**

**Student Outcomes (SO)**

1. Design a database architecture that fits for an application with effective data management and efficiency considerations.

2. Apply appropriate Query statements to ensure transaction integrity and optimization.

3. Plan a role for database administration need for database environment and requirements.

**Course Outcomes (CO)**

**University Vision, Mission, Values, Competencies, and Philosophy**

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| **CO** | **Assessment Task** | | **Assessment Schedule** | **Coverage** |
| **Theory-based** | **Practice-based** |
| CO1 - Design a database architecture that fits for an application with effective data management and efficiency considerations  CO2 - Apply appropriate Query statements to ensure transaction integrity and optimization. | Multiple Choice Questions  (50pts) | Laboratory Exam  (Writing SQL in CLI)  (100pts) | First Lecture Exam and Laboratory Exam | Week 1  to  Week 3 |
| CO1 - Design a database architecture that fits for an application with effective data management and efficiency considerations  CO2 - Apply appropriate Query statements to ensure transaction integrity and optimization. | Multiple Choice Questions  (50pts) | Laboratory Exam  (DBMS CRUD)  (100pts) | Second Lecture Exam and Laboratory Exam | Week 4  to  Week 5 |
| CO1 - Design a database architecture that fits for an application with effective data management and efficiency considerations  CO2 - Apply appropriate Query statements to ensure transaction integrity and optimization.  CO3 - Plan a role for database administration need for database environment and requirements. | Multiple Choice Questions  (100pts) | Laboratory Exam  (MTA Exam Result)  (100pts) | Third Lecture Exam and Laboratory Exam | Week 1  to  Week 7 |
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| CO1 - Design a database architecture that fits for an application with effective data management and efficiency considerations  CO2 - Apply appropriate Query statements to ensure transaction integrity and optimization.  CO3 - Plan a role for database administration need for database environment and requirements. | Final Project/Program Presentation (100pts) |  | Final Exam | Week 1  to  Week 9 |
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1. **CO and Assessment Task Alignment**

***\*Final assessment will be a PROJECT PRESENTATION/DEFENSE with Technical Documentation (Compilation of Deliverables), Software Solution, and Student’s Skill Individual Assessment.***

**Assessment Task Details (Theory-based)**

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| **Assessment Schedule** | **Coverage** | **Assessment Task** | **Details** |
| First Exam | Week 1 to Week 3 | Multiple Choice Question (100%) | You are expected to demonstrate deep understanding on the areas undergoing rapid change due to improved managerial practices, database design tools and methodologies, and database technology. This includes ERD, EERD, normalization, and basic to advanced SQL statements. Through this, you are ready for more advanced query which will be tackled in the later part of this course. Though, some of the topics in this task were already included in the CCE104L (which is a perquisite of this course), you must need to build a great skill as it significantly required in the entire course and even in your career. Further, you must exhibit a good writing skill on advanced SQL statements like inner join, outer join; left and right join, complex and subqueries, application of correlated and non-correlated sub-queries to manipulate multiple tables in the database and transaction integrity. Above all, this task is expected you to have a good database design thinking and analysis through Normalization, ERD and EERD. |
| Second Exam | Week 4 to Week 5 | Multiple Choice Question (100%) | As a future database designer and developer, you must demonstrate a strong relevant skill not just on designing database and writing SQL scripts, but you must also be expected to have a great skill on database management system (DBMS). This task includes connecting your database server to any Programming language (e.g. Java, PHP, VB Net, others), invoking SQL to Create, Retrieve, Update, and Delete (CRUD) operations on your database via class or module-base programming. Through this, you should become a well-rounded individual who can do both jobs of back-end front-end programmer which is a good entry skill in the field of Software Engineering. Further, this include a kick-off start on database optimization which is creating basic routines in preparation of the next week’s topics. |
| Third Exam | Week 1 to Week 7 | Multiple Choice Question (100%) | In this assessment task, you are expected to demonstrate a comprehensive understanding of the principles, theories and key concepts on database management system. This task includes invoking SQL routines, Transactions, Triggers, and administering databases. This task is primarily designed for you to critically design a suitable Transaction (T-SQL), planning roles, and invoking routines for your database making it become more effective and efficient. Through this, your database analysis, code writing, and data management skills are strengthened in lieu of better design and optimized DBMS.  Further, the topics on this task and the previous tasks should suffice the requirements needed for you to pass the Microsoft Technology Associate (MTA) examination, which is an international certification examination through the partnership of the university and Certiport. Hence, this is crucial as it will prepare you to a great opportunity/chance of passing the said international certification. |
| Final  Exam | Week 1 to Week 8 | Final Project/Program Presentation (100pts) | * In this task, you are expected to provide Database application software that addresses identified predicaments and issues of a process in a company, office, or institution. You should design a normalized ERD, apply appropriate SQL statements, and choose preferred PL for your DBMS solution. The primary purpose of this task is for you to apply all your academic knowledge and skills about the course subject towards developing effective and efficient software solution which aims to address identified problems/issues of a process. * You will presume the role as a database designer and junior software engineer who is tasked to create a software solution out of a company’s predicaments being identified through data gathering. The said solution must design concrete (normalized) ERD, perform CRUD and transactional SQL operations using your preferred PL. You will need to get at least deliver 85% (CRUD for all tables and atleast 3 transactional processes) working system of your project. * You will defend your output to the set of panels including your Professor which includes technical document, presentation, ERD, DBMS solution, and question and answer. Afterwards, there will be an individual skill evaluation and assessment of your project through asking questions relating to the course and to your project. * The task must be given during the first week of the course. This includes the discussion of synopsis, milestones, deliverables, rubrics, and assessment for you to prepare well on your projects. The said deliverables are checked every after examination based on milestones. * You will be given 20 minutes to present your project,10 minutes for question and individual skill assessment. * You will be graded according to the following criteria (see rubric attached):  1. Technical Writing (30 points) 2. Software Solution (50 points) 3. Individual Skill Assessment (20 points) |

**Assessment Task Details (Practice/Performance-based)**

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| **Assessment Schedule** | **Coverage** | **Assessment Task** | **Details** |
| First Exam | Week 1 to Week 3 | Laboratory Exam  (Writing SQL in CLI)  (100pts) | * You are tasked to solve/provide the appropriate SQL statements using CLI or CMD based on an itemized query problem. For every correct item you get, you will incur points correspond to it. The purpose of this task is for you to apply your knowledge and script writing skills in accessing database records. * You are an applicant for database programmer role of a well-known company in the country. You should invoke an SQL statements based their specifications and problem scenario given. You will need to get 85% of the problem for you to be hired. * You will take a (correct) screenshots of your SQL in every item and submit it to prescribed folder section on your respective LMS once completed for the checking. * The problem scenario will be given on-the-spot with its files to be downloaded which includes database and word files. It must only be done during the Laboratory schedule and it should be written in the CLI or CMD. You should use the database provided, take the correct screenshot of the invoked SQL and paste it to the word file in every item that corresponds to it. Afterwards, upload the said database and word files in your respective LMS as per instruction. Further instructions are provided by the Teacher and is seen in the word files during the event. * You are required to upload the accomplished files (database and word) on/or before the due. * You will be graded according to the corresponding points of every itemized query. |
| Second Exam | Week 4 to Week 5 | Laboratory Exam  (DBMS CRUD)  (100pts) | * Given a sample database, you are tasked to perform the CRUD operations in a database based on specific table using your preferred Programming Language (PL). This must be done via a class or module-based programming. Each CRUD operation will be given a corresponding point. The purpose of this task is for you to apply your knowledge and code writing skills in managing your database components such as establishing database connections and invoking SQL statements using preferred PL. * You are working as a senior programmer in your company who is tasked to develop a Pet Information Management System. You should perform CRUD operation using your preferred PL. You will need to get at least 85% of the task for today. * You will test run your program for data validation and accuracy. You should present it to your professor using your designated PC for deliberation once you have accomplished all the required tasks. * The problem scenario will be given on-the-spot with its files to be downloaded which includes database and word files. It must only be done during the Laboratory schedule. You should only use the attached database and perform the CRUD operation based on the table assigned to you using your preferred PL. Further instructions are provided by the Teacher and is seen in the word file during the event. * You should call the attention of your teacher once you have accomplished all the tasks for the checking. Prepare for the question and answer. * You will be graded according to the corresponding points based on the operation you have completed on your task. |
| Third  Exam | Week 1 to Week 7 | Laboratory Exam  (MTA Exam Result)  (100pts) | * Primarily, this course is aligned to Microsoft Technology Associate (MTA 98:368) which is an international certification exam through a partnership with Certiport and the university. Hence, you are required to take the certification exam as a requirement of this task. The purpose of this task is for you to acquire international certification which is one of the requirements to qualify OJT or internship. Also, this is one of the university’s hope to make students to become globally competitive and more employable. * You will qualify as a database developer once you pass the MTA certification examination. This will give you edge to others who don’t pass or take such exam. * You will present your result to your Professor through the Proctor by taking a screenshot of your score though it will be saved to Certiport’s database. You can then print or save a digital copy of your certificate under your name for personal consumption. * The task shall only be conducted in the authorized computing laboratory within the school premise. You must be a bonafide student of the university and are currently enrolled in the course. The examination will have a time limit of 45 minutes only with random questions ranging from 39 to 45 items designed, prepared and given by the Certiport. Though we have an inhouse proctor, he/she doesn’t have access to the questions and has no influence as to what will come out in the examination. Further instructions are provided during the event of the examination by the Proctor. The exam is NOT for free but with a minimal cost to those who are enrolled in the university. * Your grade is based on your MTA examination score. |

1. **Course Outline and Time Frame**

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| **TIME FRAME** | **TOPICS FOR FIRST EXAMINATION** | **TLA** | **Required Readings** |
| Week 1 to Week 3 | * Classroom orientation (University Policies; PEOs, SOs, Cos; Core values; and G-Factor)   ***DB\_TASK \_01: Submission of Deliverable 1***   * REVIEW * Basic Normalization Stages   + 1NF to 3NF   + Functional, Partial, Transitive Dependencies * Basic ERD   + Entity vs Attributes   + Mapping Relations * Enhanced ERD   + 4NF, BCNF, to 7NF   + Supertype and Subtype   + Generalization vs Specialization * Basic SQL   + DDL vs DML   + SQL Constraints     - PK, FK, Surrogate Keys, Enterprise Keys, Index Keys     - Other Constraints   + Querying and Filtering Data * SQL Functions   + MYSQL Functions vs Aggregate   + Date, String, other functions * ADVANCED SQL * Subqueries   + Complex vs Subqueries   + Correlated and non-correlated sub queries * SQL Sets   + Union   + Intersect   + Cartesian Product * SQL JOIN * Inner Join * Natural Join * Outer Join (Right / Left) * Equi-join * Self-Join * Cross Join * Joining Multiple Tables * SQL Views   + Views vs Nested Queries vs JOINS   ***DB\_TASK\_02: Submission of Deliverables 2-8*** | * Group Dynamics * Lecture * Oral Recitation * Laboratory Exercises | Coronel, Carlos. (2019). Database systems : design, implementation, and management, 13th Ed., Cengage Learning, IBC  Lemahieu, Wilfried. ( 2018 ). Principles of database management : the practical guide to storing, managing and analyzing big and small data. Cambridge University Press  Hogan, Rex. (2018). A practical guide to database design. CRC Press, Taylor & Francis Group  Starks, Joy L. (2019). Concepts of database management. Cengage  Learning  Silberschatz, Abraham. (2020). Database system concepts. McGraw-Hill Education  Flejoles, Rex P. (2018) Database theory and application. Arcler Press  Kshetri, Nir. (2017). Big data and cloud computing for development : lessons from key industries and economies in the Global South. Routledge |
| **TOPICS FOR SECOND EXAMINATION** | | | |
| Week 4 to Week 5 | * INTRO to DBMS * Database Connections (PL)   + Java, VB .Net, C#, Php   + Invoking CRUD (Create, Retrieve, Update, Delete) Statements to PL   + Invoking Complex, Subqueries, Joins and Views   + OOP : ***Class and Module-based coding***   ***DB\_TASK\_03: Submission of Deliverables 9-11***   * SQL Conditions and ExpRessions * IF and Multiple IFs * CASE structures * LOOP Structures   ***DB\_TASK\_04: Submission of Deliverable 12-13*** | * Group Dynamics * Lecture * Oral Recitation * Laboratory Exercises * Research Work | Coronel, Carlos. (2019). Database systems : design, implementation, and management, 13th Ed., Cengage Learning, IBC  Lemahieu, Wilfried. ( 2018 ). Principles of database management : the practical guide to storing, managing and analyzing big and small data. Cambridge University Press  Hogan, Rex. (2018). A practical guide to database design. CRC Press, Taylor & Francis Group  Starks, Joy L. (2019). Concepts of database management. Cengage  Learning  Silberschatz, Abraham. (2020). Database system concepts. McGraw-Hill Education  Flejoles, Rex P. (2018) Database theory and application. Arcler Press  Kshetri, Nir. (2017). Big data and cloud computing for development : lessons from key industries and economies in the Global South. Routledge |
| **TOPICS FOR THIRD EXAMINATION** | | | |
| Week 6  To  Week 7 | ***TCL – Transaction Control Language***   * SQL STORED ROUTINES * Purpose and Importance * IN, OUT, INOUT Parameters * Stored Functions * Stored Procedures * Invoking Stored Procedures to PL * Transaction Management (T-SQL) * Definition, Purpose and Importance * Creating Transactions * Concurrency Control * Recovering Transactions * Invoking T-SQL to PL   + COMMIT and ROLLBACK   ***DB\_TASK\_05: Submission of Deliverable 14-15***   * database optimization   + Database Performance Tuning   + SQL Performance Tuning   + Query processing     - Parsing, Execution and Fetching   + Indexes and query optimization * SQL Triggers * SQL Injections * **MTA Review and CERTIFICATION EXAM**   ***DB\_TASK\_06: Submission of Deliverable 16*** | * Group Dynamics * Lecture * Oral Recitation * Laboratory Exercises * Research Work | Coronel, Carlos. (2019). Database systems : design, implementation, and management, 13th Ed., Cengage Learning, IBC  Lemahieu, Wilfried. ( 2018 ). Principles of database management : the practical guide to storing, managing and analyzing big and small data. Cambridge University Press  Hogan, Rex. (2018). A practical guide to database design. CRC Press, Taylor & Francis Group  Starks, Joy L. (2019). Concepts of database management. Cengage  Learning  Silberschatz, Abraham. (2020). Database system concepts. McGraw-Hill Education  Flejoles, Rex P. (2018) Database theory and application. Arcler Press  Kshetri, Nir. (2017). Big data and cloud computing for development: lessons from key industries and economies in the Global South. Routledge |
| **TOPICS FOR THIRD EXAMINATION** | | | |
| Week 8  to  Week 9 | ***DCL – Data Control Language***   * Database Administrations   + Database and Table Locking   + Creating and Administering Roles   ***(Basic Concepts)***   * Data WareHOUSING * History Leading to Data Warehousing * Need for Data Warehousing * Data Warehouse Architectures * Data Warehouse, Data Mart, Data Mining * OLAP Processing * DSS and DSS Data Requirements * Client-Server Architectures   + Application Logic in C/S Architectures   + Application Partitioning   + Two-tier Database Server Architectures   + Characteristics of two-tier C/S Systems   + Middleware and APIs   + Three-tier Architectures   + Thin Clients   + Benefits of t 3-tier architectures * MSSQL Server * MSSQL Server Environment * MSSSQL Syntax form * When to use MSSQL * SQLITE * SQLite Server Environment * SQLite Syntax form * When to use SQLite * **Project Presentation**   ***DB\_TASK\_07: Submission of Deliverable 17*** | * Group dynamics * Oral presentation * Research article reading/discourse * Laboratory Exercises | Coronel, Carlos. (2019). Database systems : design, implementation, and management, 13th Ed., Cengage Learning, IBC  Lemahieu, Wilfried. ( 2018 ). Principles of database management : the practical guide to storing, managing and analyzing big and small data. Cambridge University Press  Hogan, Rex. (2018). A practical guide to database design. CRC Press, Taylor & Francis Group  Starks, Joy L. (2019). Concepts of database management. Cengage  Learning  Silberschatz, Abraham. (2020). Database system concepts. McGraw-Hill Education  Flejoles, Rex P. (2018) Database theory and application. Arcler Press  Kshetri, Nir. (2017). Big data and cloud computing for development : lessons from key industries and economies in the Global South. Routledge |

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| 1. **Textbook:**  * Coronel, Carlos. (2019). Database systems : design, implementation, and management, 13th Ed., Cengage Learning, IBC  1. **Suggested References:**  * Lemahieu, Wilfried. ( 2018 ). Principles of database management : the practical guide to storing, managing and analyzing big and small data. Cambridge University Press * Hogan, Rex. (2018). A practical guide to database design. CRC Press, Taylor & Francis Group * Starks, Joy L. (2019). Concepts of database management. Cengage Learning * Silberschatz, Abraham. (2020). Database system concepts. McGraw-Hill Education * Flejoles, Rex P. (2018) Database theory and application. Arcler Press * Kshetri, Nir. (2017). Big data and cloud computing for development : lessons from key industries and economies in the Global South. Routledge  1. **Course Evaluation**  |  |  |  |  | | --- | --- | --- | --- | | **Assessment methods** | | **Weights** | | | **LECTURE 30%** | | | | |  | **EXAMINATIONS** |  | 70% | |  | Exam 1 | 10% |  | |  | Exam 2 | 10% |  | |  | Exam 3 | 10% |  | |  | Exam 4 | 40% |  | |  | **CLASS PARTICIPATION** |  | 30% | |  | QAP – Quiz/Assignments/Participation | 10% |  | |  | RPR – Research/Projects/Requirements | 20% |  | |  | **TOTAL** |  | **100%** | | **LABORATORY** | **70 %** | | | |  | **EXAMINATIONS** |  | 70% | |  | Exam 1 | 15% |  | |  | Exam 2 | 15% |  | |  | Final Exam | 40% |  | |  | **LAB QUIZZES** |  | 10% | |  | **LAB EXERCISES/ASSIGN/FIELD WORK** |  | 20% | |  | **TOTAL** |  | **100%** | |

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| 1. **Policies and Guidelines** | |  |  | |  |  |
|  | * 1. Attendance is counted from the first regular class meeting.   2. A validated student identification card must always by worn be all students while attending classes.   3. Cheating is strictly prohibited. Any form of dishonesty shall be dealt with accordingly. Honesty is called for at all times.   4. Valid examination permits are necessary in taking the examinations as scheduled. CELLULAR PHONES or any ELECTRONIC GADGETS and PRESCRIBED PRC CALCULATORS are **NOT** allowed during EXAMINATIONS.   5. Base-15 grading policy should be observed. Students who obtained failing scores in major exams are recommended to attend the tutorial class. | | | | | |
| Prepared by:  **REBAN CLIFF A. FAJARDO, MIT**  Faculty  Reviewed by:  **REBAN CLIFF A. FAJARDO, MIT**  BSIT, Program Head | | | | References Reviewed by:  **BRIGIDA E. BACANI, MAED**  Head, LIC  Recommending Approval:  **RAMCIS N. VILCHEZ, DIT**  Dean, CCE | | |

Approved by:

**PEDRITO M. CASTILLO II, EdD**

VP, IPAC