**University of Management and Technology**

**Course Outline**

Course code: GIS-110

Course title: FUNDAMENTALS OF PROGRAMMING

|  |  |
| --- | --- |
| Program | BS Remote Sensing and GIS |
| Credit Hours | 3 |
| Duration | 15 |
| Prerequisites | None |
| Resource Person |  |
| Counseling Timing  (Room# ) |  |
| Contact |  |

**Chairman/Director signature………………………………….**

**Dean’s signature…………………………… Date………………………………………….**

**Learning Objective:**

The course is designed to familiarize students with the basic structured programming skills. It emphasizes upon problem analysis, algorithm designing, and program development and testing

**Learning Methodology:**

* Lecturing
* Practical Assignments
* Guest Speaker
* Case Studies

**Grade Evaluation Criteria**

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

**Marks Evaluation Marks in percentage**

Quizzes

Assignments

Mid Term 20

Attendance & Class Participation

Term Project

Presentations

Final exam 80

Total 100

**Recommended Text Books:**

**Recommended Books**

Bailey and Lundgaard, (1988) Program Design with Pseudo-code, Brooks/Cole Publishing.

**Reference Books:**

Lesley Anne Robertson, Simple Program Design: A step-by-step approach, 4/e, ISBN: 0-619-16046-2 © 2004

**Calendar of Course contents to be covered during semester**

Course code: GIS-110

Course title: FUNDAMENTALS OF PROGRAMMING

|  |  |  |
| --- | --- | --- |
| **Week** | **Course Contents** | **Reference Chapter(s)** |
| 1 | * Fundamental programming constructs, |  |
| 2 | * translation of solution (algorithms) to programs, |  |
| 3 | * data types, , |  |
| 4 | * control structures |  |
| 5 | * functions, arrays, pointers, |  |
| 6 | * Graphical programming link lists, and |  |
| 7 | * filing (sequential, Random) |  |
| 8 | * Testing of programs. |  |
| 9 | * Programme development with basic algorithms of searching & sorting, |  |

|  |  |  |
| --- | --- | --- |
| 10 | * Debugging of programming code.. |  |
| 11 | * coding, executing and debugging of simple programs, |  |
| 12 | * Implementation of Constructs: if, then, switch, etc., |  |
| 13 | * Implementation of loops: for, while, Implementations of simple functions and overloading functions, |  |
| 14 | * Implementations of Arrays (1D, 2D), pointers (dynamic memory allocation), link lists, |  |
| 15 | * sequential & random filing, data sorting, binary tree structures (bottom-up & top-down) |  |