

Program: Diploma
Semester: Sixth
Course: Principle of Management
Course Code: 7D.351

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Course Objective:

- Students will demonstrate their knowledge of business and management principles.
- Students will demonstrate critical-thinking and problem solving skills.
- Students will demonstrate effective written and oral communication
- Students will demonstrate an awareness of the global environment in which businesses operate
- Students will demonstrate an awareness of their own values
- Students will demonstrate the ability to recognize when change is needed, adapt to change as it occurs, and lead change
- Students will demonstrate an understanding of their personal interests, abilities, strengths, and weaknesses as the pertain to their chose career field

Unit I:

Overview of Business: Types of Business, Service, Manufacturing, Trade, Industrial sectors, Introduction to Engineering Industry, Process Industry, Textile Industry, Chemical Industry. Agro Industry, Globalization, Introduction, Advantages & disadvantages w.r.t India, Intellectual Property Rights I (I P R), Concept, Types of IPR.

Unit II:

Management Process: What is Management? Evolution, Various Definitions, concept of Management, Levels of Management, Administration and Management, Functions of Management: Planning, Organizing, Coordinating, Directing, Controlling, Decision Making.

Organizational Management: Organization, Definition, Steps in forming organization, Types of Organization, Line, Line & Staff, Authority & Responsibility, Span of Control (Management),

Unit III:

Human Resource Management: Personnel Management: Introduction, Definition & Function. Staffing: Introduction to HR, Introduction to HR Planning, Recruitment procedure. Personnel – Training & Development: Types of training- Induction- Skill enhancement. Safety Management: Causes of Accidents, Safety Procedures.

Unit IV:

Financial Management: Financial Management- Objectives & Functions, Capital Generation & Management, Types of capitals, Sources of finance.

Suggested Readings:

1. Essentials of Management, Harold Koontz & Weirich: (Tata McGraw Hill)
2. Principles & Practices of Management, L.M. Prasad ,S.Chand
3. Management, Stephen Robbins, INS Pub.

Program: Diploma
Semester: Sixth
Course: System Programming
Course Code: 3D.352

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Course Objective:

- Learning how to create programs that interact with sophisticated Run-Time Environments (RTE). The key notion of the course is that programs are always created relative to another program - which we call the RTE. RTEs have a regular structure: they provide services that the programs we create exploit.
- Gaining experience and exposure to good practices for mid-size programming.
- Systematic acquisition of good programming habits: documentation of code, code metrics verification, design patterns examples, unit testing, test driven development. CO4 Create database applications using C#
- Be familiar with different approaches of concurrent programming.
- Be familiar to handle signals and exceptions within a process and to control processes.
- Be familiar with basic UNIX OS concepts such as: process, program, process groups, signals, running programs, process control, address space, user and kernel modes, system calls, and context switching

Unit I:

Features of System Programming: What is System Software, Components of System Software: Assemblers, Loaders, Macros, Compilers, Evolution of System Software, Foundations of system Programming. **Assemblers:** General design procedure, Design of the assembler-Statement of the problem, Data Structure

Unit II:

Macro Language and Macro Processors: Macro Instructions, Features of a Macro facility-Macro Instruction Arguments; Conditional macro expansion ;Macro call within Macros ;Macro Instruction defining Macros. Implementation-Implementation of restricted faculty: Two Pass Algorithm, A Single Pass Algorithm, Implementation of macro calls within Macros.

Unit III:

Loaders: Loaders Schemes- "Compile and go" loaders, General Loader Schemes, Absolute Loaders, Subroutine linkages; Relocating loaders, direct linking loaders, other loaders scheme: Binders, Linking loaders Overlays, Dynamic Binders. Design of Absolute loaders. Design of Direct Linking Loaders: Specification Problem, Specification of data structures; Format of database; Algorithm.

Unit IV:

Compilers: Statement of a problem-Recognizing basic elements; Recognizing Syntactic units and Interpreting meaning; Intermediate from: Arithmetic statements, Non-Arithmetic statement, Non- executable statements; Storage Allocation;

Suggested Readings:

1. L. L. Beck – System Software – An Introduction to Systems Programming, 3rd Edn., Pearson Education, New Delhi, 2004
2. J.J. Donovan – System Programming, McGraw Hill, New Delhi, 1993.
3. D.M. Dhamdhere – System Programming and Operating Systems, 2nd Edn., Tata McGraw Hill , New Delhi, 2000

Program: Diploma

Semester: Sixth

Course: System Programming Lab

Course Code: 3DP.352

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List of Program:

1. Create a menu driven interface for
 - a) Displaying contents of a file page wise
 - b) Counting vowels, characters, and lines in a file.
 - c) Copying a file
2. Write a program to check balance parenthesis of a given program. Also generate the error report.
3. Write a program to create symbol table for a given assembly language program.
4. Write a program to create symbol table for a given high-level language program.
5. Implementation of single pass assembler on a limited set of instructions.
6. Exploring various features of debug command.
7. Write a program to implement an absolute loader

Program: Diploma
Semester: Sixth
Course: Python Programming
Course Code: 3D.355

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Course objectives:

1. Describe the core syntax and semantics of Python programming language.
2. Discover the need for working with the strings and functions.
3. Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.
4. Indicate the use of regular expressions and built-in functions to navigate the file system.
5. Infer the Object-oriented Programming concepts in Python.

Module I

Parts of Python Programming Language, Identifiers, Keywords, Statements and Expressions, Variables, Operators, Precedence and Associativity, Data Types, Indentation, Comments, Reading Input, Print Output, Type Conversions, The type() Function and Is Operator, Dynamic and Strongly Typed Language, **Control Flow Statements**, The if Decision Control Flow Statement, The if...else Decision Control Flow Statement, The if...elif...else Decision Control Statement, Nested if Statement, The while Loop, The for Loop, The continue and break Statements, Catching Exceptions Using try and except Statement, **Functions**, Built-In Functions, Commonly Used Modules, Function Definition and Calling the Function, The return Statement and void Function, Scope and Lifetime of Variables, Default Parameters, Keyword Arguments, *args and **kwargs, Command Line Arguments.

Module II

Strings, Creating and Storing Strings, Basic String Operations, Accessing Characters in String by Index Number, String Slicing and Joining, String Methods, Formatting Strings, **Lists**, Creating Lists, Basic List Operations, Indexing and Slicing in Lists, Built-In Functions Used on Lists, List Methods, **The del Statement**.

Module III

Dictionaries, Creating Dictionary, Accessing and Modifying key:value Pairs in Dictionaries, Built-In Functions Used on Dictionaries, Dictionary Methods, The del Statement, **Tuples and Sets**, Creating Tuples, Basic Tuple Operations, Indexing and Slicing in Tuples, Built-In Functions Used on Tuples, Relation between Tuples and Lists, Relation between Tuples and Dictionaries, Tuple Methods, Using zip() Function, Sets, Set Methods, Traversing of Sets, Frozenset.

Module IV

Files, Types of Files, Creating and Reading Text Data, File Methods to Read and Write Data, Reading and Writing Binary Files, The Pickle Module, Reading and Writing CSV Files, Python os and os.path Modules, **Regular Expression Operations**, Using Special Characters, Regular Expression Methods, Named Groups in Python Regular Expressions, Regular Expression with glob Module.

Module V

Object-Oriented Programming, Classes and Objects, Creating Classes in Python, Creating Objects in Python, The Constructor Method, Classes with Multiple Objects, Class Attributes versus Data Attributes, Encapsulation, Inheritance, The Polymorphism

Course Outcomes

1. Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements
2. Express proficiency in the handling of strings and functions.
3. Determine the methods to create and manipulate Python programs by utilizing the data structures like lists, dictionaries, tuples and sets.
4. Identify the commonly used operations involving file systems and regular expressions.
5. Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python.

TEXT BOOK

1. Gowrishankar S, Veena A, “**Introduction to Python Programming**”, 1st Edition, CRC Press/Taylor & Francis, 2018. ISBN-13: 978-0815394372
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REFERENCE BOOKS / WEBLINKS:

1. Jake VanderPlas, “**Python Data Science Handbook: Essential Tools for Working with Data**”, 1st Edition, O'Reilly Media, 2016. ISBN-13: 978-1491912058
2. Aurelien Geron, **Hands-On Machine Learning with Scikit-Learn and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems**”, 1st Edition, O'Reilly Media, 2017. ISBN – 13: 978-1491962299.
3. Wesley J Chun, “**Core Python Applications Programming**”, 3rd Edition, Pearson Education India, 2015. ISBN-13: 978-9332555365
4. Miguel Grinberg, “**Flask Web Development: Developing Web Applications with Python**”, 2nd Edition, O'Reilly Media, 2018. ISBN-13: 978-1491991732.

Program: Diploma
Semester: Sixth
Course: Software Testing
Course Code: 3D.354

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Course Objective:

- Understand the fundamental concepts and theory of Software testing and Software Quality Management
- Implement process that ensures the Software is developed with good quality standards
- Apply quality management methods to effectively organize staff and lead a successful development of the Software product
- Finding defects which may get created by the programmer while developing the software.
- Understanding User Conceptual models and development of better specifications.
- Experience and/or awareness of testing problems, a simple testing report, and a simple Systems User Manual (SUM).
- To ensure that it satisfies the BRS that is Business Requirement Specification and SRS that is System Requirement Specifications.

Unit I:

Software Quality Assurance: Concept of Quality, QA and SQA, Quality factors, Software Quality Metrics, Process and Product Quality, Need for SQA. Software Reliability: Reliability Measures, Verification & Validation.

Concept of Testing: Software Testing Myths, Seven Testing Principle, Concept of Test Cases, Test Case Designing, 11-steps of testing process.

Unit II:

Testing through the software lifecycle: Software Development Model: V-model (Sequential Development Model), Iterative-incremental Development Models. Testing within a lifecycle model.

Levels of Testing: Unit Testing, Integration Testing, System Testing and Acceptance Testing: Alpha testing & Beta testing, Static vs. dynamic testing, Manual vs. Automatic testing.

Unit III:

Different types of Testing: Installation Testing, Usability testing, Regression testing, Performance Testing, Load Testing, Stress testing, Security testing

Static & Dynamic Testing: Static Testing Techniques, Review types: Informal Review, Technical or peer review, walkthrough, Inspection, static analysis; Review Meeting, Review Reporting & Record keeping, Review guidelines & Review checklist, Data flow analysis, Control flow analysis, Cyclometric Analysis, Dynamic testing – need & Advantages.

Unit IV:

Functional Testing (Black Box): Equivalence partitioning, BVA, Cause-Effect graphing, Syntax testing (Concept & Test case generation only). Structural Testing (White Box): Coverage testing, Statement coverage, Branch & decision coverage, Path coverage. Domain Testing, Nonfunctional testing techniques, Validation testing Activities, Black box vs. White Box Testing. Test Management: Test Organization and Independence, Task of the Test Leader and Tester, Test Planning and Estimation, Test Process Monitoring and Control.

Suggested Readings:

1. Software Engineering R. Pressmen – 6thEd
2. Software Engineering Sommerville
3. Introducing Software Testing Louise Tamres
4. Effective Methods for software Testing William Perry
5. Software Testing in Real World Edward Kit
6. Software Testing Techniques Boris Beizer
7. Software quality assurance: Principles and Practices by Nina Godbole, Narosa Publishing

Program: Diploma
Semester: Sixth
Course: Software Testing Lab
Course Code: 3DP.354

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List of Program:

1. WAP in C to print the table of two up to 20.
2. WAP in C to print the following:
1
1 2
1 2 3
1 2 3 4
3. WAP in C to display "You are a good person" five times using for loop.
4. WAP in C to display your name five times by using while loop.
5. WAP in C to produce a Fibonacci Series for an integer enter by the user.
6. WAP in C to display the factorial of an integer given by the user.
7. WAP in C to enter 7 numbers and store it into an array and then display the minimum number.
8. WAP in C to store your weekly expenditure of any week and display minimum and maximum expenditure for the week. And also display the average expenditure per day.

Program: Diploma
Semester: Sixth
Course: Human Values And Ethics
Course Code: 40D.451

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COURSE OBJECTIVE- *To develop students' sensibility with regard to issues of gender in contemporary India.*

- *To provide a critical perspective on the socialization of human beings.*
- *To introduce students to information about some key aspects of Indian culture and ethics.*
- *To expose the students to debates on the politics and economics of work.*
- *To help students reflect critically on gender violence.*
- *To expose students to more egalitarian interactions between men and women.*
- *Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.*

1. VALUE CRISIS IN CONTEMPORARY INDIAN SOCIETY

- 1.1 Value Crisis at the Individual Level
- 1.2 Societal Level
- 1.3 Intellectual Level
- 1.4 Cultural Level
- 1.5 Value – What are they?
- 1.6 The Indian Concept of Values.
- 1.7 Modern Approach to the Study of Values.
- 1.8 Aesthetic Sensibilities

2. MORAL AND ETHICAL HUMAN VALUES

- 2.1 Bases for Moral Judgment
- 2.2 Some Canons of Ethics.
- 2.3 Virtue Ethics.
- 2.4 Ethics of Duty.
- 2.5 Ethics of Responsibility
- 2.6 Factors to be considered in Making Ethical Judgments.
- 2.7 Different Meanings of Human Values
- 2.8 A New Approach to Human Value ,Freedom, Creativity Love &Wisdom

3. MORAL VALUES IN PROFESSION

- 3.1 What is a Profession?
- 3.2 Professional Ethos
- 3.3 Code of Professional Ethics

- 3.4 Practicing the Code
- 3.5 Corporate Social Responsibility
- 3.6 The Larger Domain of Human Values
- 3.7 Institutionalizing Ethics and Human Values

4. GENDER SENSITIZATION

- 4.1 Socialisation of women
- 4.2 Just Relationships, being together as equals
- 4.3 Declining sex ratio, demographic consequences
- 4.4 Women's work, its politics and economics, fact and fiction, unrecognized and unaccounted work
- 4.5 Domestic violence, eve teasing and harassment. Is home a safe place?

Recommended Texts:

- Dr. Rajan Mishra, Human Values: Laxmi Publications Pvt. Ltd.
- S. Dinesh Babu, Professional Ethics and Human Values; Laxmi Publications Pvt. Ltd.
- P.S. Rathore. Business Ethics And Communication; S.Chand Publishing
- Dr. K.Alex. Managerial Skills; S. Chand Publishing.
- Dr. M. Adithan, Study Skills For Professional Students For Higher Education , S.Chand Publishing
- Govindarajan M “Professional Ethics and Human Values.”
- R.R. Gaur and R. Sangal “ A Foundation Course in Human Values and Professional Ethics”

Websites:

- [www.tatamecgrawhill.com/digital Solutions/ monopoly](http://www.tatamecgrawhill.com/digital%20Solutions/monopoly)
- www.schandedutech.com
- www.laxmipublications.com

Program: Diploma
Semester: Sixth
Course: Industrial Project
Course Code: 3D.395

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Course Objective:

- Applied the knowledge gained in previous courses to a practical problem in various disciplines
- Demonstrated their ability to work independently and collaboratively
- Developed their abilities in problem solving and critical judgment
- Demonstrated their ability to effectively collect, analyze and organize scientific information
- Acquired written and verbal communication skills that allow them to communicate a convincing and reasoned scientific argument at a level and style appropriate to the audience.
- Contributed to group discussions on career preparedness and ethical and professional practice.