BCT 2308
SOFTWARE DEVELOPMENT TOOLS AND ENVIRONMENTS

COURSE OUTLINE

Course Purpose

- To equip the learner with appropriate knowledge of Software Development tools and Environments.

Learning Outcomes

- By the end of this unit, the learner should be able to:
  - ❖ Discuss basic concepts of software development tools and environments
  - ❖ Describe the historical development of software development tools and environments
  - ❖ Analyze the roles of tools and environments in software development
  - ❖ Classify software tools and environments
  - ❖ Discuss the role of programming languages in the environments.

Course Description

- Definition and requirements for; Planning, implementation and project management. Tools for; strategic planning, implementation tools and project management tools. Security tools and techniques. Software development platforms; use of a programming language, a database. System and an operating system. Comparison of different environments in relationship to problem domain. Environments such as 3GL, 4GL and object oriented. Computer tools for analysis, presentation and design.

Chapter 1: Review of Software Development

- Definitions and Basic concepts.
- Software development and Software Engineering.
- Tools and Environments.
- Historical evolution of tools and Environments.

Chapter 2: Classification of Tools and Environments

- Interaction medium
- Level of formality
- Dependency on life cycle phase
- Degree of standardization

Chapter 3: Representative Tools

- Compilers
- Linkers
- Editors
- Interpreters
- Code generators

Chapter 4: Role of Programming Languages

- Procedural Vs Nonprocedural languages
- Features of programming in the small
- Programming languages and modularity
- Programming languages and handling of Anomalies
- Programming languages and concurrency
- Programming languages and verification

Chapter 5: Samples of Tools and Environments

- Teamwork
- The Unix environment
- Language centered environments
- Portable Common Tool Environment (PCTE)

Chapter 6: CASE Tools

- Classification of CASE Tools.
- CASE life cycle.
- Objective of CASE Tools.
- Advantages of CASE Tools.
- Disadvantages of CASE Tools.

Chapter 7: Ideal Scenario for the Future

- Integration.
- Modularization.
- User Friendliness.
- Incrementality.
- Phases of development.

Course Assessment

ASSESSMENT ITEM	PERCENTAGE
CATS, Assignments, Practicals	30%
Written Examination	70%
TOTAL	100%

Reference Books

- Fundamentals of Software Engineering by Carlo Ghazzi, Medhi Jazayeri and Dino Mandrioli
- Software engineering by Ian Sommerville
- Software engineering by Roger Pressman.
- Software Engineering & Testing: An Introduction By B. B. Agarwal, S. P. Tayal & M. Gupta