

CIPS Body of Knowledge

a) Professionalism Issues in Information Systems Practice

In order to function effectively, professional Information Systems professionals need not only appropriate technical knowledge, skills and experience, but also a broad understanding of the context in which they will be expected to work.

Topics: Professional Institutions; Organizations and their Structure; Finance; Management Accounting; Legal Obligations and Intellectual Property; The Internet; Professional Codes of Conduct and their Limitations; Human Resources Management

b) Architecture

Computer hardware and digital communications required to understand the constraints that computer systems necessarily impose on the development of software applications. These constraints are explored at all levels from the interaction of the major system's components down to the individual logic gates from which the latter are constructed.

Topics: Data Representation; Digital Logic; Processor Organization; Memory Systems; Input/Output Interfacing; Communications; High Performance Architecture

c) Networks

Virtually every computer is connected, or has the potential to be connected, to other computers. When connected locally, they provide vital services such as printing, file servers, CPU servers and electronic mail. When connected over a wide area they support the exchange of information in many forms. Millions of people world wide have been exposed to the World Wide Web of computers and the information they provide. The explosion in the use of such intranets and the long established use of local area networks has made the study of computer networks and the underlying communication technology as important as the more traditional foundations of computer science such as computer architecture, operating systems and programming.

Topics: Digital Communication; Local Area Networks; Wide Area Networks; Inter Networks; Errors; Network Security

d) Databases

A database system is the central software of most data processing applications. A database management system supports the operation of database applications within an integrated, controlled and accessible framework.

Topics: An Introduction to the Features of a Relational Database Product; Database Management Systems; Data Analysis and Data Modeling; The Relational Model and Relational Languages; SQL; Distributed and Multi-User Database Systems

e) Object oriented programming

Object Technology has been in development for over forty years. It is now embedded in such diverse areas as requirements engineering, software architecture, analysis, design, programming, testing, deployment and maintenance. The most widely used modern programming languages C++, Java and VB.Net all embrace an object-oriented approach.

Topics: Foundations; Concepts; Design; Practice

f) Project management

Project management is the application of knowledge, skills, tools, and techniques to a broad range of activities in order to meet the requirements of a particular project.

Topics: Stages in a Project; Project Planning and Estimating; Human Factors; Progress Monitoring, Project Control and Reporting

g) Service management

Service Management is the component of Operations Support Systems responsible for service delivery, such as order management, inventory management, provisioning and activation, network topology management and maintenance, and stability/performance diagnostics of communication service providers and

their networks.

Topics: Information Systems; Management Information Systems; Systems and Management Concepts; Managerial Decision Making; Cultural Dimension of Information Systems Development; Principles of Professionalism; Acquisition of Software, Hardware, Media and Consumables; Installation and Site Planning, Security and External Threats; Applications and System Requirements

h) Software engineering

Software engineering is the profession concerned with creating and maintaining software applications by applying technologies and practices from computer science, project management, engineering, application domains, and other fields.

Topics: Software requirements; Software design and architecture; Software construction and maintenance; Software testing and quality assurance; Software engineering management and process; Applications of software engineering to various areas

i) Systems analysis

Systems Analysis is a central part of systems development. It comprises the process of turning a set of user requirements into a logical system specification and encompasses various activities to achieve this end. The traditional systems lifecycle has been challenged by alternative models, for example the spiral (iterative and incremental) lifecycle and rapid application development. There are a variety of systems development approaches including the structured approach, the object-oriented approach, soft systems methodology and agile or lightweight' approaches.

Topics: Analysis of Existing Systems and New Systems; Requirements Gathering and Specification; The Strengths and Weaknesses of Different Approaches; Analysis Techniques and Tools; Communication with Users; System Documentation

j) Systems design

Systems Design is a central part of systems development. It comprises the process of turning a set of user requirements into an implementable system and encompasses various activities to achieve this end. Alternative models are challenging the traditional systems development life cycle. Alongside this, two approaches to systems development are emerging: the traditional structured approach; and the object-oriented approach.

Topics: Systems Development Life Cycles Models; Systems Development Approaches; Structured Systems Design (Logical); Object Oriented Design (Logical); Physical Systems Design;

k) The Internet and the Web

The Internet, sometimes called simply "the Net," is a worldwide system of computer networks - a network of networks in which users at any one computer can, if they have permission, get information from any other computer. The Internet is a public, cooperative, and self-sustaining facility accessible to hundreds of millions of people worldwide. Physically, the Internet uses a portion of the total resources of the currently existing public telecommunication networks. Technically, what distinguishes the Internet is its use of a set of protocols.

Topics: Internet Services and Applications; Website Development; Hosting; Performance; Security; Privacy