

LEARNING UNIT IN SKILLS

SkillSet

Skill SubSkill LearningUnit

1.0 Information Technology Skills

1.1 Software Development

1.1.1 *Programming-principles, objects, algorithms, modules, testing*

- 3 Problem Solving, Small IS
- 13 IS Personal Level Systems
- 13.1 Procedural/event driven programming
- 13.11 Implementing simple algorithms
- 13.12 Implementing a simple database design
- 13.13 Implementing and event driven applications
- 13.14 IS Development with Prototyping
- 18 IS Development and Management
- 19 Personal, Cognitive Process
- 42 Information Measurements/Data/Events
- 43 Data: Characters, Records, Files, Multi-Media
- 44 ADTs, Classes, Objects
- 45 Problem Solving, Formal Problems and IS
- 46 Object Representation of a System
- 47 Problem Solving, Algorithm Development
- 48 Problem Solving, Top Down Implementation
- 49 Problem Solving, Object Implementation
- 50 Problem Solving, Modules/Cohesion/Coupling
- 51 Verification and Validation, A Systems View
- 52 Problem Solving, Environments and Tools
- 53 ADTs: Data and Files Structures
- 54 ADTs: Arrays, Lists, Trees, Records
- 55 ADTs: Indexed Files, Keys
- 56 Problem Solving, IS Applications, Sub-Structures
- 57 Problem Solving, Data and File Applications
- 58 Problem Solving, with Files and Database
- 59 Problem Solving, File/DB Editors/Reports
- 60 Problem Solving, Design, Test, Debug
- 61 Programming: Language Comparison
- 68 OS Environments and Resources
- 78 IS Continuous Improvement and IS
- 80 Interpersonal, Group Dynamics
- 81 IS Database Applications Development
- 82 Problem Solving, Complexity Metrics
- 83 IS Software Quality Metrics
- 84 Systems and Quality Metrics/Assessment
- 86 Interpersonal, Synergistic Solutions
- 87 Interpersonal, Agreements and Commitment
- 90 IS Database and IS Implementation
- 91 IS Database Application Structuring
- 92 IS Database Application Implementation
- 94 IS Development and Project Management
- 95 IS Database Conceptual/Logical Models
- 96 IS Functional Specifications
- 98 IS Development and Conversion
- 99 IS Requirements/Work-Flow Planning
- 100 IS Application with Programming Language
- 101 IS Implementation with Objects, Event Driven
- 104 IS Applications, Programming Environment
- 110 IS Applications, Production Systems
- 111 IS Requirements and Database

1.1.2 *Application Development-requirements, specs, developing*

- 3 Problem Solving, Small IS
- 13 IS Personal Level Systems
- 13.1 Procedural/event driven programming

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13.11 Implementing simple algorithms
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1.1.3 Algorithmic Design, Data, Object and File Structures

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45	Problem Solving, Formal Problems and IS
46	Object Representation of a System
47	Problem Solving, Algorithm Development
48	Problem Solving, Top Down Implementation
49	Problem Solving, Object Implementation
50	Problem Solving, Modules/Cohesion/Coupling
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1.1.4 Problem Solving-identify problems, systems concepts, creativity

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49	Problem Solving, Object Implementation
50	Problem Solving, Modules/Cohesion/Coupling
51	Verification and Validation, A Systems View

SkillSet**Skill****SubSkill****LearningUnit**

52	Problem Solving, Environments and Tools
53	ADTs: Data and Files Structures
54	ADTs: Arrays, Lists, Trees, Records
55	ADTs: Indexed Files, Keys
56	Problem Solving, IS Applications, Sub-Structures
57	Problem Solving, Data and File Applications
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1.1.5 Client Server Software Development

3	Problem Solving, Small IS
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51	Verification and Validation, A Systems View
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54	ADTs: Arrays, Lists, Trees, Records
55	ADTs: Indexed Files, Keys
56	Problem Solving, IS Applications, Sub-Structures
57	Problem Solving, Data and File Applications
58	Problem Solving, with Files and Database
59	Problem Solving, File/DB Editors/Reports

SkillSet**Skill****SubSkill****LearningUnit**

60	Problem Solving, Design, Test, Debug
61	Programming: Language Comparison
68	OS Environments and Resources
78	IS Continuous Improvement and IS
80	Interpersonal, Group Dynamics
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
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96	IS Functional Specifications
98	IS Development and Conversion
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
101	IS Implementation with Objects, Event Driven
104	IS Applications, Programming Environment
110	IS Applications, Production Systems
111	IS Requirements and Database

1.2 Web Development**1.2.1 Web page Development-HTML, page editors, tools**

13	IS Personal Level Systems
13.15	IS Technology Evolution
18	IS Development and Management
19	Personal, Cognitive Process
24	Systems, Work-Flow, Organizational Systems
52	Problem Solving, Environments and Tools
56	Problem Solving, IS Applications, Sub-Structures
58	Problem Solving, with Files and Database
59	Problem Solving, File/DB Editors/Reports
61	Programming: Language Comparison
68	OS Environments and Resources
78	IS Continuous Improvement and IS
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
86	Interpersonal, Synergistic Solutions
90	IS Database and IS Implementation
91	IS Database Application Structuring
92	IS Database Application Implementation
93	IS Application Development/Code Generation
94	IS Development and Project Management
95	IS Database Conceptual/Logical Models
96	IS Functional Specifications
98	IS Development and Conversion
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
101	IS Implementation with Objects, Event Driven
104	IS Applications, Programming Environment
110	IS Applications, Production Systems
111	IS Requirements and Database

1.2.2 Web programming-thin client, asp, ODBC, CGI, E-commerce

13	IS Personal Level Systems
13.15	IS Technology Evolution
18	IS Development and Management
19	Personal, Cognitive Process

SkillSet**Skill****SubSkill****LearningUnit**

24	Systems, Work-Flow, Organizational Systems
52	Problem Solving, Environments and Tools
56	Problem Solving, IS Applications, Sub-Structures
58	Problem Solving, with Files and Database
59	Problem Solving, File/DB Editors/Reports
61	Programming: Language Comparison
68	OS Environments and Resources
78	IS Continuous Improvement and IS
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
86	Interpersonal, Synergistic Solutions
90	IS Database and IS Implementation
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93	IS Application Development/Code Generation
94	IS Development and Project Management
95	IS Database Conceptual/Logical Models
96	IS Functional Specifications
98	IS Development and Conversion
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
101	IS Implementation with Objects, Event Driven
104	IS Applications, Programming Environment
110	IS Applications, Production Systems
111	IS Requirements and Database

1.3 Database**1.3.1 Modeling and design, construction, schema tools, DB Systems**

13	IS Personal Level Systems
13.12	Implementing a simple database design
15	Information Use Strategies
24	Systems, Work-Flow, Organizational Systems
28	IS Development Standards
42	Information Measurements/Data/Events
43	Data: Characters, Records, Files, Multi-Media
55	ADTs: Indexed Files, Keys
58	Problem Solving, with Files and Database
81	IS Database Applications Development
88	IS Data Modeling
89	ADTs: Database Models and Functions
90	IS Database and IS Implementation
91	IS Database Application Structuring
92	IS Database Application Implementation
96	IS Functional Specifications
97	IS Conversion Planning
98	IS Development and Conversion
100	IS Application with Programming Language
101	IS Implementation with Objects, Event Driven
103	IS Development Testing
122	IS Policies and Standards
123	IS Management of IS Function
125	IS Implementation and Outsourcing

1.3.2 Triggers, Stored Procedures, Audit Controls: Design/Development

13	IS Personal Level Systems
13.12	Implementing a simple database design
15	Information Use Strategies
24	Systems, Work-Flow, Organizational Systems
28	IS Development Standards
42	Information Measurements/Data/Events
43	Data: Characters, Records, Files, Multi-Media
55	ADTs: Indexed Files, Keys

SkillSet**Skill****SubSkill****LearningUnit**

58 Problem Solving, with Files and Database
81 IS Database Applications Development
88 IS Data Modeling
89 ADTs: Database Models and Functions
90 IS Database and IS Implementation
91 IS Database Application Structuring
92 IS Database Application Implementation
96 IS Functional Specifications
97 IS Conversion Planning
98 IS Development and Conversion
100 IS Application with Programming Language
101 IS Implementation with Objects, Event Driven
103 IS Development Testing
122 IS Policies and Standards
123 IS Management of IS Function
125 IS Implementation and Outsourcing

1.3.3 Administration: security, safety, backup, repairs, replicating

13 IS Personal Level Systems
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103 IS Development Testing
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123 IS Management of IS Function
125 IS Implementation and Outsourcing

1.4 Systems Integration**1.4.1 Computer Systems Hardware**

2 Knowledge Work Software
7 IT Hardware and Software
29 IS Implementation, Outsourcing
32 Telecom, Devices, Media, Systems
33 Telecom, Organizational Support By
34 Telecom, Economics, Design Issues
35 Telecom, Standards, Standard Organizations
36 Telecom, Central/Distributed Systems
37 Telecom, Architectures, Topologies, Protocols
38 Telecom, Hardware and Software
39 Telecom, Services, Reliability, Security...
40 Telecom, Installation, Implementation
41 Telecom, LAN, Installation, Configuration
62 Telecom, Systems View HW/SW
63 IT Peripheral Devices
64 IT Hardware Architectures
65 IT Systems Software Components, Interactions

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Skill	SubSkill	LearningUnit
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67	OS Functions	
68	OS Environments and Resources	
69	OS, Installation, Configuration for Multi-Media	
70	OS, Interoperability and Systems Integration	
71	OS, Installation, Configuration of Multi-User Systems	
98	IS Development and Conversion	
110	IS Applications, Production Systems	
116	IS Life Cycles and Projects	
122	IS Policies and Standards	
124	IS Management of Emerging Technologies	
125	IS Implementation and Outsourcing	

1.4.2 *Networking (Lan/Wan) and Telecommunications*

2	Knowledge Work Software	
7	IT Hardware and Software	
29	IS Implementation, Outsourcing	
32	Telecom, Devices, Media, Systems	
33	Telecom, Organizational Support By	
34	Telecom, Economics, Design Issues	
35	Telecom, Standards, Standard Organizations	
36	Telecom, Central/Distributed Systems	
37	Telecom, Architectures, Topologies, Protocols	
38	Telecom, Hardware and Software	
39	Telecom, Services, Reliability, Security...	
40	Telecom, Installation, Implementation	
41	Telecom, LAN, Installation, Configuration	
62	Telecom, Systems View HW/SW	
63	IT Peripheral Devices	
64	IT Hardware Architectures	
65	IT Systems Software Components, Interactions	
67	OS Functions	
68	OS Environments and Resources	
69	OS, Installation, Configuration for Multi-Media	
70	OS, Interoperability and Systems Integration	
71	OS, Installation, Configuration of Multi-User Systems	
98	IS Development and Conversion	
110	IS Applications, Production Systems	
116	IS Life Cycles and Projects	
122	IS Policies and Standards	
124	IS Management of Emerging Technologies	
125	IS Implementation and Outsourcing	

1.4.3 *Operating Systems Management-multi platforms/protocols, NT/Unix*

2	Knowledge Work Software	
7	IT Hardware and Software	
29	IS Implementation, Outsourcing	
32	Telecom, Devices, Media, Systems	
33	Telecom, Organizational Support By	
34	Telecom, Economics, Design Issues	
35	Telecom, Standards, Standard Organizations	
36	Telecom, Central/Distributed Systems	
37	Telecom, Architectures, Topologies, Protocols	
38	Telecom, Hardware and Software	
39	Telecom, Services, Reliability, Security...	
40	Telecom, Installation, Implementation	
41	Telecom, LAN, Installation, Configuration	
62	Telecom, Systems View HW/SW	
63	IT Peripheral Devices	
64	IT Hardware Architectures	
65	IT Systems Software Components, Interactions	
67	OS Functions	
68	OS Environments and Resources	

SkillSet**Skill****SubSkill****LearningUnit**

69	OS, Installation, Configuration for Multi-Media
70	OS, Interoperability and Systems Integration
71	OS, Installation, Configuration of Multi-User Systems
98	IS Development and Conversion
110	IS Applications, Production Systems
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

1.4.4 *Computer Systems Software-OS fundamentals, resource mgt concepts*

2	Knowledge Work Software
7	IT Hardware and Software
29	IS Implementation, Outsourcing
32	Telecom, Devices, Media, Systems
33	Telecom, Organizational Support By
34	Telecom, Economics, Design Issues
35	Telecom, Standards, Standard Organizations
36	Telecom, Central/Distributed Systems
37	Telecom, Architectures, Topologies, Protocols
38	Telecom, Hardware and Software
39	Telecom, Services, Reliability, Security...
40	Telecom, Installation, Implementation
41	Telecom, LAN, Installation, Configuration
62	Telecom, Systems View HW/SW
63	IT Peripheral Devices
64	IT Hardware Architectures
65	IT Systems Software Components, Interactions
67	OS Functions
68	OS Environments and Resources
69	OS, Installation, Configuration for Multi-Media
70	OS, Interoperability and Systems Integration
71	OS, Installation, Configuration of Multi-User Systems
98	IS Development and Conversion
110	IS Applications, Production Systems
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

1.4.5 *LAN/WAN Design and Management*

2	Knowledge Work Software
7	IT Hardware and Software
29	IS Implementation, Outsourcing
32	Telecom, Devices, Media, Systems
33	Telecom, Organizational Support By
34	Telecom, Economics, Design Issues
35	Telecom, Standards, Standard Organizations
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37	Telecom, Architectures, Topologies, Protocols
38	Telecom, Hardware and Software
39	Telecom, Services, Reliability, Security...
40	Telecom, Installation, Implementation
41	Telecom, LAN, Installation, Configuration
62	Telecom, Systems View HW/SW
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65	IT Systems Software Components, Interactions
67	OS Functions
68	OS Environments and Resources
69	OS, Installation, Configuration for Multi-Media
70	OS, Interoperability and Systems Integration

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71	OS, Installation, Configuration of Multi-User Systems
98	IS Development and Conversion
110	IS Applications, Production Systems
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

1.4.6 Systems Configuration, Operation, Administration

2	Knowledge Work Software
7	IT Hardware and Software
29	IS Implementation, Outsourcing
32	Telecom, Devices, Media, Systems
33	Telecom, Organizational Support By
34	Telecom, Economics, Design Issues
35	Telecom, Standards, Standard Organizations
36	Telecom, Central/Distributed Systems
37	Telecom, Architectures, Topologies, Protocols
38	Telecom, Hardware and Software
39	Telecom, Services, Reliability, Security...
40	Telecom, Installation, Implementation
41	Telecom, LAN, Installation, Configuration
62	Telecom, Systems View HW/SW
63	IT Peripheral Devices
64	IT Hardware Architectures
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124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

2.0 Organizational and Professional Skills**2.2 Individual and Team Interpersonal Skill****2.2.1 Learning to learn**

10	Characteristics of an IS Professional
12	Ethics and the IS Professional
20	Personal, Goals and Decisions
31	IS Society and Ethics
79	Interpersonal, Consensus Development
85	IS Professional Code of Ethics
86	Interpersonal, Synergistic Solutions
94	IS Development and Project Management
99	IS Requirements/Work-Flow Planning
106	IS Development, Project Management
107	IS Development, Project Management
112	Personal, Proactivity, Principled Action
113	Interpersonal, Empathetic Listening
114	Interpersonal, Goals, Mission, Alignment
117	Personal, Presentation
118	Personal, Life-Long Learning
119	Ethics and Legal Issues
120	IS Management and IS Department Organization
121	Personal, Leadership and IS
123	IS Management of IS Function
124	IS Management of Emerging Technologies

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126 Personal, Time and Relationship Management

2.2.2 *Professionalism-self directed, leadership, time mgt*

10 Characteristics of an IS Professional

12 Ethics and the IS Professional

20 Personal, Goals and Decisions

31 IS Society and Ethics

79 Interpersonal, Consensus Development

85 IS Professional Code of Ethics

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117 Personal, Presentation

118 Personal, Life-Long Learning

119 Ethics and Legal Issues

120 IS Management and IS Department Organization

121 Personal, Leadership and IS

123 IS Management of IS Function

124 IS Management of Emerging Technologies

126 Personal, Time and Relationship Management

2.2.3 *Personal Skills-encouraging, listening, being organized*

10 Characteristics of an IS Professional

12 Ethics and the IS Professional

20 Personal, Goals and Decisions

31 IS Society and Ethics

79 Interpersonal, Consensus Development

85 IS Professional Code of Ethics

86 Interpersonal, Synergistic Solutions

94 IS Development and Project Management

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113 Interpersonal, Empathetic Listening

114 Interpersonal, Goals, Mission, Alignment

117 Personal, Presentation

118 Personal, Life-Long Learning

119 Ethics and Legal Issues

120 IS Management and IS Department Organization

121 Personal, Leadership and IS

123 IS Management of IS Function

124 IS Management of Emerging Technologies

126 Personal, Time and Relationship Management

2.2.4 *Professionalism-committing to and completing work*

10 Characteristics of an IS Professional

12 Ethics and the IS Professional

20 Personal, Goals and Decisions

31 IS Society and Ethics

79 Interpersonal, Consensus Development

85 IS Professional Code of Ethics

86 Interpersonal, Synergistic Solutions

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106 IS Development, Project Management

107 IS Development, Project Management

112 Personal, Proactivity, Principled Action

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113 Interpersonal, Empathetic Listening
 114 Interpersonal, Goals, Mission, Alignment
 117 Personal, Presentation
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 120 IS Management and IS Department Organization
 121 Personal, Leadership and IS
 123 IS Management of IS Function
 124 IS Management of Emerging Technologies
 126 Personal, Time and Relationship Management

2.2.5 *Teams-team building, vision/mission development, synergy*

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 114 Interpersonal, Goals, Mission, Alignment
 117 Personal, Presentation
 118 Personal, Life-Long Learning
 119 Ethics and Legal Issues
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 121 Personal, Leadership and IS
 123 IS Management of IS Function
 124 IS Management of Emerging Technologies
 126 Personal, Time and Relationship Management

2.2.6 *Communication-oral, written, multimedia, empathetic listening*

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 12 Ethics and the IS Professional
 20 Personal, Goals and Decisions
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 79 Interpersonal, Consensus Development
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 117 Personal, Presentation
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 124 IS Management of Emerging Technologies
 126 Personal, Time and Relationship Management

2.2.7 *Ethics-theory/concepts, setting an ethical example*

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 12 Ethics and the IS Professional
 20 Personal, Goals and Decisions

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31	IS Society and Ethics
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107	IS Development, Project Management
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113	Interpersonal, Empathetic Listening
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117	Personal, Presentation
118	Personal, Life-Long Learning
119	Ethics and Legal Issues
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121	Personal, Leadership and IS
123	IS Management of IS Function
124	IS Management of Emerging Technologies
126	Personal, Time and Relationship Management

2.1 Business Fundamentals**2.1.1 Learning Business Process and Enviroment**

13	IS Personal Level Systems
13.15	IS Technology Evolution
13.16	Implementing a personal is application
23	Systems, Role of Management, Users, Designers
27	IS Types
29	IS Implementation, Outsourcing
56	Problem Solving, IS Applications, Sub-Structures
79	Interpersonal, Consensus Development
95	IS Database Conceptual/Logical Models
96	IS Functional Specifications
100	IS Application with Programming Language
105	IS Development, Project Planning
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
123	IS Management of IS Function
125	IS Implementation and Outsourcing

2.1.2 Accounting, Distribution, Finance, HR, Marketing, Production

13	IS Personal Level Systems
13.15	IS Technology Evolution
13.16	Implementing a personal is application
23	Systems, Role of Management, Users, Designers
27	IS Types
29	IS Implementation, Outsourcing
56	Problem Solving, IS Applications, Sub-Structures
79	Interpersonal, Consensus Development
95	IS Database Conceptual/Logical Models
96	IS Functional Specifications
100	IS Application with Programming Language
105	IS Development, Project Planning
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
123	IS Management of IS Function
125	IS Implementation and Outsourcing

2.1.3 Business Problems and Appropriate Technical Solutions

13	IS Personal Level Systems
13.15	IS Technology Evolution
13.16	Implementing a personal is application

SkillSet**Skill****SubSkill****LearningUnit**

23	Systems, Role of Management, Users, Designers
27	IS Types
29	IS Implementation, Outsourcing
56	Problem Solving, IS Applications, Sub-Structures
79	Interpersonal, Consensus Development
95	IS Database Conceptual/Logical Models
96	IS Functional Specifications
100	IS Application with Programming Language
105	IS Development, Project Planning
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
123	IS Management of IS Function
125	IS Implementation and Outsourcing

3.0 Strategic Organizational Systems Development with IS**3.1 Organizational Systems Development****3.1.1 Strategic Utilization of Information Technology**

1	Systems and IT Concepts
2	Knowledge Work Software
4	IT and Society
5	Systems and Quality
6	Information and Quality
8	IT Systems Specification
9	IT and Attaining Objectives
13	IS Personal Level Systems
13.1	Procedural/event driven programming
13.15	IS Technology Evolution
16	IS Theory
17	IS as a Strategic Component
18	IS Development and Management
21	Decision Making, Simon Model
22	Systems and Quality, and IS
23	Systems, Role of Management, Users, Designers
24	Systems, Work-Flow, Organizational Systems
25	Models, Organizational Relationship to IS
26	IS Planning
27	IS Types
28	IS Development Standards
29	IS Implementation, Outsourcing
30	Personal, Performance Evaluation
31	IS Society and Ethics
45	Problem Solving, Formal Problems and IS
46	Object Representation of a System
72	IS Analysis and Design Tasks
74	IS Requirements and Specifications
75	IS Design and Implementation
76	IS Rapid Prototyping
77	IS Development Risks/Feasibility
78	IS Continuous Improvement and IS
80	Interpersonal, Group Dynamics
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
85	IS Professional Code of Ethics
87	Interpersonal, Agreements and Commitment
95	IS Database Conceptual/Logical Models
97	IS Conversion Planning
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
105	IS Development, Project Planning
106	IS Development, Project Management

SkillSet**Skill****SubSkill****LearningUnit**

110	IS Applications, Production Systems
111	IS Requirements and Database
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

3.1.2 IS Planning

1	Systems and IT Concepts
2	Knowledge Work Software
4	IT and Society
5	Systems and Quality
6	Information and Quality
8	IT Systems Specification
9	IT and Attaining Objectives
13	IS Personal Level Systems
13.1	Procedural/event driven programming
13.15	IS Technology Evolution
16	IS Theory
17	IS as a Strategic Component
18	IS Development and Management
21	Decision Making, Simon Model
22	Systems and Quality, and IS
23	Systems, Role of Management, Users, Designers
24	Systems, Work-Flow, Organizational Systems
25	Models, Organizational Relationship to IS
26	IS Planning
27	IS Types
28	IS Development Standards
29	IS Implementation, Outsourcing
30	Personal, Performance Evaluation
31	IS Society and Ethics
45	Problem Solving, Formal Problems and IS
46	Object Representation of a System
72	IS Analysis and Design Tasks
74	IS Requirements and Specifications
75	IS Design and Implementation
76	IS Rapid Prototyping
77	IS Development Risks/Feasibility
78	IS Continuous Improvement and IS
80	Interpersonal, Group Dynamics
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
85	IS Professional Code of Ethics
87	Interpersonal, Agreements and Commitment
95	IS Database Conceptual/Logical Models
97	IS Conversion Planning
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
105	IS Development, Project Planning
106	IS Development, Project Management
110	IS Applications, Production Systems
111	IS Requirements and Database
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

3.1.3 IT and Organizational Systems

1	Systems and IT Concepts
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SkillSet**Skill****SubSkill****LearningUnit**

2	Knowledge Work Software
4	IT and Society
5	Systems and Quality
6	Information and Quality
8	IT Systems Specification
9	IT and Attaining Objectives
13	IS Personal Level Systems
13.1	Procedural/event driven programming
13.15	IS Technology Evolution
16	IS Theory
17	IS as a Strategic Component
18	IS Development and Management
21	Decision Making, Simon Model
22	Systems and Quality, and IS
23	Systems, Role of Management, Users, Designers
24	Systems, Work-Flow, Organizational Systems
25	Models, Organizational Relationship to IS
26	IS Planning
27	IS Types
28	IS Development Standards
29	IS Implementation, Outsourcing
30	Personal, Performance Evaluation
31	IS Society and Ethics
45	Problem Solving, Formal Problems and IS
46	Object Representation of a System
72	IS Analysis and Design Tasks
74	IS Requirements and Specifications
75	IS Design and Implementation
76	IS Rapid Prototyping
77	IS Development Risks/Feasibility
78	IS Continuous Improvement and IS
80	Interpersonal, Group Dynamics
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
85	IS Professional Code of Ethics
87	Interpersonal, Agreements and Commitment
95	IS Database Conceptual/Logical Models
97	IS Conversion Planning
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
105	IS Development, Project Planning
106	IS Development, Project Management
110	IS Applications, Production Systems
111	IS Requirements and Database
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

3.1.4 Information Systems Analysis and Design

1	Systems and IT Concepts
2	Knowledge Work Software
4	IT and Society
5	Systems and Quality
6	Information and Quality
8	IT Systems Specification
9	IT and Attaining Objectives
13	IS Personal Level Systems
13.1	Procedural/event driven programming
13.15	IS Technology Evolution

SkillSet**Skill****SubSkill****LearningUnit**

16	IS Theory
17	IS as a Strategic Component
18	IS Development and Management
21	Decision Making, Simon Model
22	Systems and Quality, and IS
23	Systems, Role of Management, Users, Designers
24	Systems, Work-Flow, Organizational Systems
25	Models, Organizational Relationship to IS
26	IS Planning
27	IS Types
28	IS Development Standards
29	IS Implementation, Outsourcing
30	Personal, Performance Evaluation
31	IS Society and Ethics
45	Problem Solving, Formal Problems and IS
46	Object Representation of a System
72	IS Analysis and Design Tasks
74	IS Requirements and Specifications
75	IS Design and Implementation
76	IS Rapid Prototyping
77	IS Development Risks/Feasibility
78	IS Continuous Improvement and IS
80	Interpersonal, Group Dynamics
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
85	IS Professional Code of Ethics
87	Interpersonal, Agreements and Commitment
95	IS Database Conceptual/Logical Models
97	IS Conversion Planning
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
105	IS Development, Project Planning
106	IS Development, Project Management
110	IS Applications, Production Systems
111	IS Requirements and Database
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

3.1.5 *Decision Making*

1	Systems and IT Concepts
2	Knowledge Work Software
4	IT and Society
5	Systems and Quality
6	Information and Quality
8	IT Systems Specification
9	IT and Attaining Objectives
13	IS Personal Level Systems
13.1	Procedural/event driven programming
13.15	IS Technology Evolution
16	IS Theory
17	IS as a Strategic Component
18	IS Development and Management
21	Decision Making, Simon Model
22	Systems and Quality, and IS
23	Systems, Role of Management, Users, Designers
24	Systems, Work-Flow, Organizational Systems
25	Models, Organizational Relationship to IS
26	IS Planning

SkillSet**Skill****SubSkill****LearningUnit**

27	IS Types
28	IS Development Standards
29	IS Implementation, Outsourcing
30	Personal, Performance Evaluation
31	IS Society and Ethics
45	Problem Solving, Formal Problems and IS
46	Object Representation of a System
72	IS Analysis and Design Tasks
74	IS Requirements and Specifications
75	IS Design and Implementation
76	IS Rapid Prototyping
77	IS Development Risks/Feasibility
78	IS Continuous Improvement and IS
80	Interpersonal, Group Dynamics
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
85	IS Professional Code of Ethics
87	Interpersonal, Agreements and Commitment
95	IS Database Conceptual/Logical Models
97	IS Conversion Planning
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
105	IS Development, Project Planning
106	IS Development, Project Management
110	IS Applications, Production Systems
111	IS Requirements and Database
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

3.1.6 *Systems Concepts, Use of IT, Customer Service*

1	Systems and IT Concepts
2	Knowledge Work Software
4	IT and Society
5	Systems and Quality
6	Information and Quality
8	IT Systems Specification
9	IT and Attaining Objectives
13	IS Personal Level Systems
13.1	Procedural/event driven programming
13.15	IS Technology Evolution
16	IS Theory
17	IS as a Strategic Component
18	IS Development and Management
21	Decision Making, Simon Model
22	Systems and Quality, and IS
23	Systems, Role of Management, Users, Designers
24	Systems, Work-Flow, Organizational Systems
25	Models, Organizational Relationship to IS
26	IS Planning
27	IS Types
28	IS Development Standards
29	IS Implementation, Outsourcing
30	Personal, Performance Evaluation
31	IS Society and Ethics
45	Problem Solving, Formal Problems and IS
46	Object Representation of a System
72	IS Analysis and Design Tasks
74	IS Requirements and Specifications

SkillSet**Skill****SubSkill****LearningUnit**

75	IS Design and Implementation
76	IS Rapid Prototyping
77	IS Development Risks/Feasibility
78	IS Continuous Improvement and IS
80	Interpersonal, Group Dynamics
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
85	IS Professional Code of Ethics
87	Interpersonal, Agreements and Commitment
95	IS Database Conceptual/Logical Models
97	IS Conversion Planning
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
105	IS Development, Project Planning
106	IS Development, Project Management
110	IS Applications, Production Systems
111	IS Requirements and Database
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

3.1.7 Systems Theory and Quality Concepts

1	Systems and IT Concepts
2	Knowledge Work Software
4	IT and Society
5	Systems and Quality
6	Information and Quality
8	IT Systems Specification
9	IT and Attaining Objectives
13	IS Personal Level Systems
13.1	Procedural/event driven programming
13.15	IS Technology Evolution
16	IS Theory
17	IS as a Strategic Component
18	IS Development and Management
21	Decision Making, Simon Model
22	Systems and Quality, and IS
23	Systems, Role of Management, Users, Designers
24	Systems, Work-Flow, Organizational Systems
25	Models, Organizational Relationship to IS
26	IS Planning
27	IS Types
28	IS Development Standards
29	IS Implementation, Outsourcing
30	Personal, Performance Evaluation
31	IS Society and Ethics
45	Problem Solving, Formal Problems and IS
46	Object Representation of a System
72	IS Analysis and Design Tasks
74	IS Requirements and Specifications
75	IS Design and Implementation
76	IS Rapid Prototyping
77	IS Development Risks/Feasibility
78	IS Continuous Improvement and IS
80	Interpersonal, Group Dynamics
81	IS Database Applications Development
82	Problem Solving, Complexity Metrics
85	IS Professional Code of Ethics
87	Interpersonal, Agreements and Commitment

SkillSet**Skill****SubSkill****LearningUnit**

95	IS Database Conceptual/Logical Models
97	IS Conversion Planning
99	IS Requirements/Work-Flow Planning
100	IS Application with Programming Language
105	IS Development, Project Planning
106	IS Development, Project Management
110	IS Applications, Production Systems
111	IS Requirements and Database
115	IS Responsibility to Sell Designs to Management
116	IS Life Cycles and Projects
122	IS Policies and Standards
124	IS Management of Emerging Technologies
125	IS Implementation and Outsourcing

3.2 Project Management**3.2.1 Team Leading, Project Goal Setting**

30	Personal, Performance Evaluation
72	IS Analysis and Design Tasks
79	Interpersonal, Consensus Development
80	Interpersonal, Group Dynamics
82	Problem Solving, Complexity Metrics
83	IS Software Quality Metrics
84	Systems and Quality Metrics/Assessment
86	Interpersonal, Synergistic Solutions
87	Interpersonal, Agreements and Commitment
94	IS Development and Project Management
96	IS Functional Specifications
98	IS Development and Conversion
105	IS Development, Project Planning
106	IS Development, Project Management
107	IS Development, Project Management
108	IS Development, Project Management Tools
109	IS Development, Project Close Down
110	IS Applications, Production Systems
112	Personal, Proactivity, Principled Action
113	Interpersonal, Empathetic Listening
114	Interpersonal, Goals, Mission, Alignment
116	IS Life Cycles and Projects
117	Personal, Presentation
120	IS Management and IS Department Organization
121	Personal, Leadership and IS
126	Personal, Time and Relationship Management
127	Quality and Performance Management

3.2.2 Monitor and Direct Resources and Activities

30	Personal, Performance Evaluation
72	IS Analysis and Design Tasks
79	Interpersonal, Consensus Development
80	Interpersonal, Group Dynamics
82	Problem Solving, Complexity Metrics
83	IS Software Quality Metrics
84	Systems and Quality Metrics/Assessment
86	Interpersonal, Synergistic Solutions
87	Interpersonal, Agreements and Commitment
94	IS Development and Project Management
96	IS Functional Specifications
98	IS Development and Conversion
105	IS Development, Project Planning
106	IS Development, Project Management
107	IS Development, Project Management
108	IS Development, Project Management Tools
109	IS Development, Project Close Down

SkillSet

Skill	SubSkill	LearningUnit
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110	IS Applications, Production Systems
112	Personal, Proactivity, Principled Action
113	Interpersonal, Empathetic Listening
114	Interpersonal, Goals, Mission, Alignment
116	IS Life Cycles and Projects
117	Personal, Presentation
120	IS Management and IS Department Organization
121	Personal, Leadership and IS
126	Personal, Time and Relationship Management
127	Quality and Performance Management

3.2.3 *Coordinate Life Cycle Scheduling and Planning*

30	Personal, Performance Evaluation
72	IS Analysis and Design Tasks
79	Interpersonal, Consensus Development
80	Interpersonal, Group Dynamics
82	Problem Solving, Complexity Metrics
83	IS Software Quality Metrics
84	Systems and Quality Metrics/Assessment
86	Interpersonal, Synergistic Solutions
87	Interpersonal, Agreements and Commitment
94	IS Development and Project Management
96	IS Functional Specifications
98	IS Development and Conversion
105	IS Development, Project Planning
106	IS Development, Project Management
107	IS Development, Project Management
108	IS Development, Project Management Tools
109	IS Development, Project Close Down
110	IS Applications, Production Systems
112	Personal, Proactivity, Principled Action
113	Interpersonal, Empathetic Listening
114	Interpersonal, Goals, Mission, Alignment
116	IS Life Cycles and Projects
117	Personal, Presentation
120	IS Management and IS Department Organization
121	Personal, Leadership and IS
126	Personal, Time and Relationship Management
127	Quality and Performance Management

3.2.4 *Apply concepts of continuous improvement*

30	Personal, Performance Evaluation
72	IS Analysis and Design Tasks
79	Interpersonal, Consensus Development
80	Interpersonal, Group Dynamics
82	Problem Solving, Complexity Metrics
83	IS Software Quality Metrics
84	Systems and Quality Metrics/Assessment
86	Interpersonal, Synergistic Solutions
87	Interpersonal, Agreements and Commitment
94	IS Development and Project Management
96	IS Functional Specifications
98	IS Development and Conversion
105	IS Development, Project Planning
106	IS Development, Project Management
107	IS Development, Project Management
108	IS Development, Project Management Tools
109	IS Development, Project Close Down
110	IS Applications, Production Systems
112	Personal, Proactivity, Principled Action
113	Interpersonal, Empathetic Listening
114	Interpersonal, Goals, Mission, Alignment

SkillSet**Skill****SubSkill****LearningUnit**

116 IS Life Cycles and Projects
117 Personal, Presentation
120 IS Management and IS Department Organization
121 Personal, Leadership and IS
126 Personal, Time and Relationship Management
127 Quality and Performance Management

3.2.5 *Project Scheduling and Tracking*

30 Personal, Performance Evaluation
72 IS Analysis and Design Tasks
79 Interpersonal, Consensus Development
80 Interpersonal, Group Dynamics
82 Problem Solving, Complexity Metrics
83 IS Software Quality Metrics
84 Systems and Quality Metrics/Assessment
86 Interpersonal, Synergistic Solutions
87 Interpersonal, Agreements and Commitment
94 IS Development and Project Management
96 IS Functional Specifications
98 IS Development and Conversion
105 IS Development, Project Planning
106 IS Development, Project Management
107 IS Development, Project Management
108 IS Development, Project Management Tools
109 IS Development, Project Close Down
110 IS Applications, Production Systems
112 Personal, Proactivity, Principled Action
113 Interpersonal, Empathetic Listening
114 Interpersonal, Goals, Mission, Alignment
116 IS Life Cycles and Projects
117 Personal, Presentation
120 IS Management and IS Department Organization
121 Personal, Leadership and IS
126 Personal, Time and Relationship Management
127 Quality and Performance Management