



2010

**IT Skill Standards Center
IT Human Resources Development Headquarters
INFORMATION-TECHNOLOGY PROMOTION AGENCY (IPA), JAPAN**

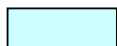
Ministry of Economy, Trade and Industry

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IT Architect Training Course Group *

	Inexperienced (aim at level 1)	Level 1 (aim at level 2)	Level 2 (aim at level 3)	Level 3 (aim at level 4)	Level 4 (aim at level 5)	Level 5 (aim at level 6)	Level 6 (aim at level 7)	Level 7
Technology				Latest Technology Trends			Community Activities	
Methodology				Solution Architecture Fundamentals		Solution Architecture - Advanced Level -		
				Architect Fundamentals				
				Architecture Methodology Fundamentals				
				Consulting Methodology Fundamentals	Architecture Methodology - Advanced Level -			
Project Management				Project Management Fundamentals				
Business/ Industry				Industry Application Trends				
Personal				Leadership Skills Required in IT Architect				
				Communication Skills Required in IT Architect				
				Negotiation Skills Required in IT Architect				



:Common to a job category



: Specific to each specialty field

*: This training map is common to specialty fields, "Application Architecture", "Integration Architecture", and "Infrastructure Architecture"

IT Architect (Application Architecture) Course List

Training Course Level		Training Course Group Name	Training Course Name	Method			Standard Duration		Page
				E-Learning	Lecture	Workshop	E-Learning (Total hours)	Class (Total days)	
Common to Job Category	Basic Course	Architect Fundamentals	IT Architect Overview	*	*		6	3	8
			Architecture Concept		*	*		5	12
		Architecture Methodology Fundamentals	Modeling Fundamentals	*		*	12	5	16
		Consulting Methodology Fundamentals	Consulting Methodology Fundamentals	*	*	*	12	2	19
		Project Management Fundamentals	Project Management Fundamentals	*			30		22
	Advanced Course	Architecture Methodology - Advanced Level -	Performance Engineering		*	*		3	25
			Reference and Reuse of Architecture Patterns		*	*		3	28
		Leadership Skills Required of IT Architect	Leadership Skills Required of IT Architect			*		3	31
		Communication Skills Required of IT Architect	Communication Skills Required of IT Architect			*		3	34
		Negotiation Skills Required of IT Architect	Negotiation Skills Required of IT Architect			*		3	37
	Special Course	Latest Technology Trends	Latest Technology Trends		*			1	40
		Industry Application Trends	Industry Application Trends	*	*		12	2	43
		Community Activities	Community Activities	-	-	-	-	-	46
Specific to Each Specialty Field <Selective Courses>	Basic Course	Solution Architecture Fundamentals	Application Architecture Fundamentals	*	*		18	2	49
	Advanced Course	Solution Architecture - Advanced Level -	Application Architecture - Advanced Level -		*	*		5	59

IT Architect (Integration Architecture) Course List

Training Course Level		Training Course Group Name	Training Course Name	Method			Standard Duration		Page
				E-Learning	Lecture	Workshop	E-Learning (Total hours)	Class (Total days)	
Common to Job Category	Basic Course	Architect Fundamentals	IT Architect Overview	*	*		6	3	8
			Architecture Concept		*	*		5	12
		Architecture Methodology Fundamentals	Modeling Fundamentals	*		*	12	5	16
		Consulting Methodology Fundamentals	Consulting Methodology Fundamentals	*	*	*	12	2	19
		Project Management Fundamentals	Project Management Fundamentals	*			30		22
	Advanced Course	Architecture Methodology - Advanced Level -	Performance Engineering		*	*		3	25
			Reference and Reuse of Architecture Patterns		*	*		3	28
		Leadership Skills Required of IT Architect	Leadership Skills Required of IT Architect			*		3	31
		Communication Skills Required of IT Architect	Communication Skills Required of IT Architect			*		3	34
		Negotiation Skills Required of IT Architect	Negotiation Skills Required of IT Architect			*		3	37
	Special Course	Latest Technology Trends	Technology Trends		*			1	40
		Industry Application Trends	Industry Application Trends	*	*		12	2	43
		Community Activities	Community Activities	-	-	-	-	-	46
Specific to Each Specialty Field <Selective Courses>	Basic Course	Solution Architecture Fundamentals	Integration Architecture Fundamentals	*	*		6	1	52
	Advanced Course	Solution Architecture - Advanced Level -	Integration Architecture - Advanced Level -		*	*		5	62

IT Architect (Infrastructure Architecture) Course List

Training Course Level		Training Course Group Name	Training Course Name	Method			Standard Duration		Page
				E-Learning	Lecture	Workshop	E-Learning (Total hours)	Class (Total days)	
Common to Job Category	Basic Course	Architect Fundamentals	IT Architect Overview	*	*		6	3	8
			Architecture Concept		*	*		5	12
		Architecture Methodology Fundamentals	Modeling Fundamentals	*		*	12	5	16
		Consulting Methodology Fundamentals	Consulting Methodology Fundamentals	*	*	*	12	2	19
		Project Management Fundamentals	Project Management Fundamentals	*			30		22
	Advanced Course	Architecture Methodology - Advanced Level -	Performance Engineering		*	*		3	25
			Reference and Reuse of Architecture Patterns		*	*		3	28
		Leadership Skills Required of IT Architect	Leadership Skills Required of IT Architect			*		3	31
		Communication Skills Required of IT Architect	Communication Skills Required of IT Architect			*		3	34
		Negotiation Skills Required of IT Architect	Negotiation Skills Required of IT Architect			*		3	37
	Special Course	Latest Technology Trends	Latest Technology Trends		*			1	40
		Industry Application Trends	Industry Application Trends	*	*		12	2	43
		Community Activities	Community Activities	-	-	-	-	-	46
Specific to Each Specialty Field <Selective Courses>	Basic Course	Solution Architecture Fundamentals	Infrastructure Architecture Fundamentals	*	*		18	2	55
	Advanced Course	Solution Architecture - Advanced Level -	Infrastructure Architecture - Advanced Level -		*	*		5	65

IT Architect

Training Course Description

<Common to IT Architect>

Architect Fundamentals (1 course)

- IT Architect Overview
- Architecture Concept

<div>Course Name</div> <div>Content</div>	IT Architect Overview
Training Course Level	<input type="checkbox"/> Introductory Course <input checked="" type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is one of the courses in Architect Fundamentals course group.</p> <p>Attendees understand an overview of the job category IT Architect and skills required of IT Architect. The attendees also acquire fundamental knowledge important for design and development of IT architecture.</p> <ul style="list-style-type: none"> ○The attendees learn a concept of architecture, an overview of the job category IT Architect, requirements and constraints important for selection and usage of architecture, characteristics of architecture functions, characteristics of system infrastructure, requirements which affect quality of architecture, and reuse. ○Via e-learning type methods in the first half, the attendees learn overviews of job contents of and important skills for the job category IT Architect, and fundamental knowledge of design and development of architecture in lectures in the second half.
Attendee	Those who have participated in projects as leaders or members of technical teams and who aspire to lead system architecture in projects (those who aim to acquire the knowledge of IT Architect level 4 or 5)
Precondition	Possess fundamental knowledge of IT and system development and have participated in projects as members of technical teams.
Training Method	E-learning, Lecture
Duration	[First Half] Standard term: 6 hours (e-learning 6 hours/day x 1 day) [Second Half] Standard term: 3 days (classroom)
Learning Goal	Can design solution architecture which utilize knowledge of architecture design, architecture design techniques, architecture standardization, architecture reuse, and the latest architecture technology as a person responsible for or a leader of a technical team based on understanding of basic job contents, basic design, and basic framework of the job category IT Architect.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design

Skill Items	Knowledge Items
Standardization and Reuse	<ul style="list-style-type: none"> -Definition of Development Standards -Definition of IT Standards based on Basic Principles -Reuse of Existing Assets -Understanding and Application of Reuse Techniques -Development and Application of Reusable Assets Understanding of Reusable Asset Management Process
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends, Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards

Skill Items	Knowledge Items
Software Engineering	<p>-Security and Privacy Security Measures (Secret Preservation, Measures for Prevention of Falsification, Intrusion Prevention, Computer Virus, Integrity Measures, Availability Measures, Safety Measures, Social Engineering), Privacy Protection, Risk Management, Guidelines and Relevant Regulations</p> <p>-Testing Techniques Test Case Design, Specification Determination, Test Environment Set-up, Management, Test Data Preparation, Test Tool Utilization</p> <p>Programming Techniques Utilization and Practice of Various Programming Language Techniques</p> <p>-Utilization of Development Support Tools Development Environment, Various Application Development Tools, Configuration Management Tools, Debugger, Simulator, etc.</p> <p>-Development Methods Development Methods Selection, Utilization and Practice of Development Technique, Waterfall Model, RAD (Rapid Application Development) Model, Spiral Model, Application Package Specific Development Techniques</p> <p>-Reuse Methods Utilization of Software Components, Deliverables Utilization of Advanced Project, Utilization and Practice of Reuse Methods, Architectural Pattern, Design Pattern, Framework, etc.</p> <p>-Object-Oriented Development Object-Oriented Basic Concept, UML, Object-Oriented Development Process, Analysis, Design and Implementation, Main Object-Oriented Techniques</p> <p>-Implementation and Inspection of Security Systems Selection and Installation of Security Products and Tools, Security System Development, Security Technology, Implementation</p> <p>-External Design System Function Design, Data Model Design, Creation of External Specification</p> <p>-Design Methods Object-Oriented Design, Structural Design, Data Oriented Design</p> <p>-Internal Design Function Design, Interface Design, Internal Data Design, Identification and Role-definition of Subcomponents, Relationship definition among Subcomponents, Creation of Internal Specification</p>

Course Name	Architecture Concept
Content	
Training Course Level	<input type="checkbox"/> Introductory Course <input checked="" type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is one of the courses in Architect Fundamentals course group, and helps attendees understand considerations on architecture design and technological risks.</p> <p>The attendees also acquire practical knowledge for reduction of complexity in architecture design.</p> <p>○The attendees learn factors that affect architecture, understand how the factors relate one another, how to compare and review different architecture development approaches, select one of the approaches, decide what architecture deliverables are necessary for architecture projects are, and set roles of the deliverables in the projects.</p>
Attendee	Those who have participated in projects as leaders or members of technical teams and who aspire to lead system architecture in projects (those who aim to acquire the knowledge of IT Architect level 4 or 5)
Precondition	Have completed IT Architect Overview course, or possess equivalent knowledge.
Training Method	Lecture, Workshop
Duration	Standard term: 5 days (classroom)
Learning Goal	Can design solution architecture which utilize knowledge of architecture design, architecture design techniques, architecture standardization, architecture reuse, and the latest architecture technology as a person responsible for or a leader of a technical team based on understanding of basic job contents, basic design, and framework of job category IT Architect.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design

Skill Items	Knowledge Items
Standardization and Reuse	<ul style="list-style-type: none"> -Definition of Development Standards -Definition of IT Standards based on Basic Principles -Reuse of Existing Assets -Understanding and Application of Reuse Techniques -Development and Application of Reusable Assets -Understanding of Reusable Asset Management Process
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends, Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards

Architecture Methodology Fundamentals (1 course)

- Modeling Fundamentals

<div>Course Name</div> <div>Content</div>	Modeling Fundamentals
Training Course Level	<input type="checkbox"/> Introductory Course <input checked="" type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>Attendees acquire knowledge important for systematic organization of business processes by utilizing process models, and development of component models, and development of infrastructure models for infrastructure design.</p> <ul style="list-style-type: none"> ○The attendees learn a concept, purposes, and usage of process models, creation of process models, roles and components of component models, relations of functional requirements with operational requirements, a concept of components in partitioning of application functions, problems in development of component models, components of data models, and a concept of infrastructure models. ○Via e-learning type methods in the first half, the attendees acquire fundamental knowledge of application modeling and infrastructure modeling to clarify functional requirements and operational requirements based on business requirements and to organize and analyze the functional requirements and operational requirements. In workshops in the second half, the attendees perform exercises by utilizing process models and component models in how to design applications that achieve business requirements and how to design system infrastructure that achieves operational requirements.
Attendee	Those who have participated in projects as leaders or members of technical teams and who aspire to lead system architecture in projects (those who aim to acquire the knowledge of IT Architect level 4 or 5)
Precondition	Have completed Architect Fundamentals course group, or possess equivalent knowledge.
Training Method	E-learning, Workshop
Duration	[First Half] Standard term: 12 hours (e-learning 6 hours/day x 2 days) [Second Half] Standard term: 5 days (classroom)
Learning Goal	Can develop a solution model relevant to an application and infrastructure as a person responsible for or a leader of a technical team in a project in which several architects participate.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design

Consulting Methodology Fundamentals (1 course)

- Consulting Modeling Fundamentals

Content \ Course Name	Consulting Methodology Fundamentals
Training Course Level	<input type="checkbox"/> Introductory Course <input checked="" type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>Attendees understand fundamental consulting methodology, consulting processes, and techniques utilized in the consulting processes. The attendees also learn how to utilize the consulting related knowledge and techniques above.</p> <p>○ In the first half, the attendees learn the following via e-learning type methods: a flow of entire consulting processes using consulting techniques, techniques for data collection, data organization, and data analysis, problem extraction, problem analysis techniques, review of problem solving plans, how to formulate the problem solving plans, problem solving processes, how to prepare logical and effective reports, presentation, and negotiation in problem solving processes. In the second half, the attendees learn how to apply consulting processes utilizing consulting methodologies, and review example cases of provision of architecture solutions in workshops.</p>
Attendee	Those who have participated in projects as members of technical teams and who aspire to lead activities for system architecture in projects (those who aim to acquire the knowledge of IT Architect level 4)
Precondition	Possess fundamental knowledge of IT and system development and have participated in projects as members of technical teams.
Training Method	E-learning, Lecture, Workshop
Duration	<p>[First Half] Standard term: 12 hours (e-learning 6 hours/day x 2 days)</p> <p>[Second Half] Standard term: 2 days (classroom)</p>
Learning Goal	Can make a proposal of an architecture relevant solution and design the solution as a leader of a technical team of architecture design and architecture development by utilizing consulting techniques.

Skill Items	Knowledge Items
Utilization of Consulting Techniques	<p>-Selection and Utilization of Consulting Techniques Comparison and Analysis and Selection and Usage of Consulting Techniques, Definition and Practice of Process, Definition and Creation of Deliverables</p> <p>-Understanding and Utilization of Analysis Tools and Models Business Life Cycle Models (Introduction Stage, Growth Stage, Maturity Stage, Decline Stage), Product Portfolio Management (PPM) Model, Experience Curve, 3C Analysis, SWOT Analysis, 7S Models, Michael Porter's Five Forces Model, Value Chain Analysis</p>
Management and Utilization of Knowledge	<p>-Management and Utilization of Knowledge Databases Creation of Knowledge (Added Value, Structuring, Sharing), Knowledge Utilization, Maintenance and Management of Knowledge, Understanding of Effects and Improvement, Business Model Patents</p>
Consulting Implementation	<p>-Utilization of Consulting Techniques Hypothesis Generation, Data Collection, Interview, Session Management, Data Analysis, Verification, Implementation of Communication and Negotiation, Report Creation</p> <p>Customer Relationship Establishment and Maintenance of Customer Relationship</p>
Project Management	<p>Project Integration Management Develop Project Charter, Develop Preliminary Project Scope Statement, Develop Project Management Plan, Direct and Manage Project Execution, Monitor and Control Project Work, Integrated Change</p>

Project Management Fundamentals (1 course)

- Project Management Fundamentals

Content \ Course Name	Project Management Fundamentals
Training Course Level	<input type="checkbox"/> Introductory Course <input checked="" type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architecture <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>Attendees acquire fundamental knowledge of project management.</p> <p>○The attendees learn, based on “PMBOK”, a general concept of project management that covers all aspect of basic project management knowledge (e.g., project definitions, organization, plan formulation, schedule planning, project implementation, project management, and project completion) and that is not biased by characteristics of industries or fields.</p>
Attendee	Those who have participated in projects as members of technical teams and who aspire to lead activities for system architecture in projects (those who aim to acquire the knowledge of IT Architect level 4)
Precondition	Possess fundamental knowledge of information system development and have participated in projects.
Training Method	E-learning
Duration	Standard term: 30 hours (e-learning 6 hours/day x 5 days)
Learning Goal	Can complete a project as a leader of a technical team of architecture design and architecture development by utilizing fundamental knowledge of project management.

Skill Items	Knowledge Items
Project Management	<p>Project Integration Management Develop Project Charter, Develop Preliminary Project Scope Statement, Develop Project Management Plan, Direct and Manage Project Execution, Monitor and Control Project Work, Integrated Change</p> <p>-Project Scope Management Scope Planning, Scope Definition, Create WBS, Scope Verification, Scope Control</p> <p>-Project Time Management Activity Definition, Activity Sequencing, Activity Resource Estimating, Activity Duration Estimating, Schedule Development, Schedule Control</p> <p>-Project Cost Management Cost Estimating, Cost Budgeting, Cost Control</p> <p>-Project Quality Management Quality Planning, Perform Quality Assurance, Perform Quality Control</p> <p>-Project Human Resource Management Human Resource Planning, Acquire Project Team, Develop Project Team, Manage Project Team</p> <p>-Project Communication Management Communications Planning, Information Distribution, Performance Reporting, Manage Stakeholders</p> <p>-Project Risk Management Risk Management Planning, Risk Identification, Qualitative Risk Analysis, Quantitative Risk Analysis, Risk Response Planning, Risk Monitoring and Control</p> <p>-Project Procurement Management Plan Purchases and Acquisitions, Plan Contracting, Request Seller Responses, Select Sellers, Contract Administration, Contract Closure</p>

Architecture Methodology - Advanced Level - (2 courses)

- Performance Engineering
- Reference and Reuse of Architecture Patterns

Content \ Course Name	Performance Engineering
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input checked="" type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is one of the courses in Architecture Methodology - Advanced Level - course group.</p> <p>Attendees acquire practical knowledge of how to resolve complex problems that IT architects face in system development projects that demand for difficult performance requirements.</p> <p>○The attendees learn performance assessment, review of modeling techniques, influence of various operations on accomplishment of performance objectives, arrangement of the various operations, techniques to deal with technologically complex systems, modeling of systems that utilize simulation, effective usage of technology search that supports modeling for performance.</p>
Attendee	Those who possess fundamental knowledge of design, development, and modeling of architecture and who have designed and developed system architecture by utilizing the fundamental knowledge (those who aim to acquire the knowledge of IT Architect level 5 or 6)
Precondition	Have completed Modeling Fundamentals course, or possess equivalent knowledge.
Training Method	Lecture, Workshop
Duration	Standard term: 3 days (classroom)
Learning Goal	Can understand implementation of architecture that improves performance, and design architecture that achieves performance requirements as a person responsible for a technical team in a project.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends, Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards

Skill Items	Knowledge Items
Application Architecture Design	<p>-Design of Functional Architecture User Interface, Application Framework, Logic Data Framework</p> <p>-Assessment for Feasibility of Functional Architecture Assessment of Application Development Techniques, Assessment of Application Development Tools, Assessment of Application Test Strategies and Plans, Assessment of Operation Transfer Strategies and Plans</p>
Design of Integration Architecture	<p>-Integrated Architecture Design User Interface Integrated Design, Access Integrated Design, Application Integrated Design, Process Integrated Design, Data Integrated Design</p> <p>-Assessment for Feasibility of Integrated Architecture Promotion of Reuse and Standardization, Assessment of Application Development Techniques, Assessment of Application Development Tools, Assessment of Application Test Strategies and Plans, Assessment of Operation Transfer Strategies and Plans, Assessment of System Infrastructure Design Techniques, Assessment of System Infrastructure Design Tools, Assessment of System Infrastructure Test Strategies and Plans, Assessment of System Infrastructure Migration Strategies and Plans</p>
Design of Infrastructure Architecture	<p>-Infrastructure Architecture Design Design of System Management and Operation, Security Design, Network Design, Platform Design (OS, Middleware, etc.), Performance Design, Availability Design, Design for Physical Data Structure, etc.</p> <p>Assessment for Feasibility of Infrastructure Architecture Assessment of System Infrastructure Design Techniques, Assessment of System Infrastructure Design Tools, Assessment of System Infrastructure Test Strategies and Plans, Assessment of System Infrastructure Migration Strategies and Plans</p>

Content \ Course Name	Reference and Reuse of Architecture Patterns
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input checked="" type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is one of the courses in Architecture Methodology - Advanced Level - course group.</p> <p>Attendees acquire practical knowledge of how to apply architecture patterns developed in the past to new projects and how to create deliverables (architecture patterns) with a view to reuse of the deliverables.</p> <p>○The attendees learn a concept of architecture design patterns, positive effects (e.g., improvement of productivity and reduction of risks of solutions) by reuse of the architecture design patterns, major architecture design patterns (e.g., reference architecture, architecture patterns, analysis patterns, and design patterns), examples of architecture, and effective methods of architecture design based on the major design patterns.</p>
Attendee	Those who possess fundamental knowledge of design, development, and modeling of architecture and who have designed and developed system architecture by utilizing the fundamental knowledge (those who aim to acquire the knowledge of IT Architect level 5 or 6)
Precondition	Have completed Architecture Concept course and Modeling Fundamentals course group, or possess equivalent knowledge.
Training Method	Lecture, Workshop
Duration	Standard term: 3 days (classroom)
Learning Goal	Can design architecture utilizing knowledge of technology and methodologies as a person responsible for a technical team in a project based on understanding of how to refer and reuse architecture patterns.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards

Leadership Skills Required of IT Architect (1 course)

- Leadership Skills Required of IT Architect

Course Name	Leadership Skills Required of IT Architect
Content	
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input checked="" type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>Attendees acquire practical skills of the following that are required of IT Architect and success factors of any projects: object setting, team building, communication with people within and outside teams, creation of project action item, promotion of the project action item, management of the project action items, and skills for motivating team members.</p> <p>○The attendees learn, in workshops including role-play, the following items required to promote medium-sized, large-sized, or complex projects: leadership, self motivation, motivating team members through team building, interpersonal skills, discord management, and consensus building.</p>
Attendee	Those who have participated in projects and who have results of the projects as leaders or members of technical teams (those who aim to acquire the knowledge of IT Architect level 4 or 5)
Precondition	Possess fundamental leadership knowledge.
Training Method	Workshop
Duration	Standard term: 3 days (classroom)
Learning Goal	Can take leadership in interaction with a stakeholder about design and implementation of architecture as a person responsible for or a leader of a technical team.

Skill Items	Knowledge Items
Leadership	<p>-Selection of Direction of Technology Understanding and Practice of Fundamentals and Principles of Leadership</p> <p>Leadership Fundamentals and Principles of Leadership, Teamwork and Communication, Project Objective Setting, Project Promotion, Project Execution, Project Management, Collaboration Between Team Members, Motivating Team Members and Provision for Feelings of Accomplishment</p> <p>-Leadership (within Technical Team) Target Setting, Promotion for IT Architect Operations, Practice of IT Architect Operations, Management of IT Architect Operations, Collaboration with Team Members, Motivation for Team Members, Sharing of a Sense of Accomplishment with Team Members</p> <p>-Leadership (outside Technical Team) Targets Sharing, Promoting for IT Architect Operations, Cooperation</p>

Communication Skills Required of IT Architect (1 course)

- Communication Skills Required of IT Architect

Course Name Content	Communication Skills Required of IT Architect
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input checked="" type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>Attendees acquire the following practical skills that are required of IT Architect and a success factor of any projects: effective and efficient communication with people involved in projects.</p> <p>○The attendees learn, in workshops including role-play, the following important for promotion of medium-sized, large-sized, or complex projects: two-way communication, passing of information, and processing of information.</p>
Attendee	Those who have participated in projects and who have results of the projects as leaders or members of technical teams (those who aim to acquire the knowledge of IT Architect level 4 or 5)
Precondition	Possess fundamental communication knowledge.
Training Method	Workshop
Duration	Standard term: 3 days (classroom)
Learning Goal	Can communicate with a decision-related key person on customer side and members of a technical team on technical matters as a person responsible for or a leader of the technical team.

Skill Items	Knowledge Items
Communication	<p>-2-Way Communication Dialogue and Interview, Information Transfer, Communication Technique, Effective Speaking and Listening</p> <p>-Transmission of Information Presentation Technique, Creation of Official and Nonofficial Documents, Technical Writing, Media Selection, Persuasion Technique</p> <p>-Organization, Analysis and Retrieval of Information Development and Practice of Status Response Capabilities to Understand Situations, Capabilities to Understand Situations, Meeting Management Technique</p>

Negotiation Skills Required of IT Architect (1 course)

- Negotiation Skills Required of IT Architect

Content \ Course Name	Negotiation Skills Required of IT Architect
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input checked="" type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>Attendees acquire practical negotiation skills required of IT Architect in any situations or scenes in projects.</p> <p>○About negotiation with people concerned with any scenes or situations in medium-sized, large-sized, or complex projects, the attendees learn and perform role-play in workshops in how to divide negotiation phases into several phases, how to understand expected problems, and how to formulate problem solving solutions with negotiating parties.</p>
Attendee	Those who have participated in projects and who have results of the projects as leaders or members of technical teams (those who aim to acquire the knowledge of IT Architect level 4 or 5)
Precondition	Possess fundamental negotiation knowledge.
Training Method	Workshop
Duration	Standard term: 3 days (classroom)
Learning Goal	Can resolve confrontation and conflict with a decision-related key person on customer side and members of a technical team, maintain continuously trust relationship with a tough negotiating partner, and build consensus with the negotiating partner as a person responsible for or a leader of the technical team.

Skill Items	Knowledge Items
Negotiation	-Negotiation Negotiation Process, Effective Negotiation Techniques, Establishment of Trust Relationship, Objective Setting, Common Interest, Logical Thinking, Problem Solving Techniques

Latest Technology Trends (1 course)

- Latest Technology Trends

<div>Course Name</div> <div>Content</div>	Latest Technology Trends
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input checked="" type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>Attendees learn the latest technology trends surrounding IT services changing from day to day and acquire knowledge of how to apply the latest technology trends to actual business.</p> <ul style="list-style-type: none"> ○The attendees learn sizes and trends of IT markets in a domestic country and abroad, present and future IT, component technology trends of the following (platforms, system management infrastructure, databases, networks, distributed computing systems, security), application technology trends, business model patent technology trends, and next-generation e-business, and its future growth. ○Training contents are provided on given themes according to need, and the attendees select a theme to take part in a lecture for maintaining or improving their skills at regular intervals or when needed.
Attendee	Those who should keep up with their different kinds of technology knowledge as persons responsible for or leaders of technical teams (those who aim to acquire the knowledge of IT Architect 4, 5, or 6)
Precondition	Possess fundamental knowledge of IT, have participated in solution architecture design, and have results of the solution architecture design.
Training Method	Lecture
Duration	Standard term: 1 day (classroom)
Learning Goal	Can design an optimal architecture by applying knowledge of the latest technology to an actual project effectively as a person responsible for or a leader of a technical team based on understanding of the latest technology.

Skill Items	Knowledge Items
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards
Industry	<ul style="list-style-type: none"> -Understanding of Relevant Industry Trends Understanding of Industry Business Trends, Technology Trends and Competitive Status -Understanding of Applications in Relevant Industries Utilization of industry Specific Applications Knowledge, Optimum Platform Selection, Practice of Industrial Application Design" -Understanding and Application of Relevant Industries (Businesses) Standards Understanding and Utilization of Industry Terms and Relevant Regulations, Understanding and Utilization of Industry Specific Business Environment, Understanding and Utilization of Industry Specific Business Practices, Understanding and Utilization of Industry Specific Operation

Industry Application Trends (1 course)

- Industry Application Trends

Course Name Content	Industry Application Trends
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input checked="" type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>Attendees learn the latest trends in each industry and acquire knowledge of applications and solutions in the spotlight currently in order to keep updating knowledge of industry applications.</p> <ul style="list-style-type: none"> ○Training contents are provided on a given theme of each industry, application, or solution, and the attendees select a theme and take part in a lecture for maintaining or improving their skills at regular intervals or when needed. ○To provide lectures via e-learning type methods is possible; however, to give demonstrations of how applications work at lectures is recommended.
Attendee	Those who should keep up with the latest knowledge including industries that the professionals are working for currently and application packages utilized in the industries as persons responsible for or leaders of technical teams (those who aim to acquire the knowledge of IT Architect level 4, 5, or 6)
Precondition	Possess fundamental knowledge of industry applications.
Training Method	Lecture or E-learning
Duration	Standard term: 2 days (classroom) or Standard term: 12 hours (e-learning 6 hours/day x 2 days)
Learning Goal	Can make a proposal of an industry application and design the industry application as a person responsible for or a leader of a technical team by utilizing industry application knowledge.

Skill Items	Knowledge Items
Industry	<ul style="list-style-type: none"> -Understanding of Relevant Industry Trends Understanding of Industry Business Trends, Technology Trends and Competitive Status -Understanding of Applications in Relevant Industries Utilization of industry Specific Applications Knowledge, Optimum Platform Selection, Practice of Industrial Application Design" -Understanding and Application of Relevant Industries (Businesses) Standards Understanding and Utilization of Industry Terms and Relevant Regulations, Understanding and Utilization of Industry Specific Business Environment, Understanding and Utilization of Industry Specific Business Practices, Understanding and Utilization of Industry Specific Operation
Application Architecture Design	<ul style="list-style-type: none"> -Definition of Functional Requirements Knowledge of Target Domain -Design of Functional Architecture User Interface, Application Framework, Logic Data Framework -Assessment for Feasibility of Functional Architecture Assessment of Application Development Techniques, Assessment of Application Development Tools, Assessment of Application Test Strategies and Plans, Assessment of Operation Transfer Strategies and Plans

Community Activities (1 course)

- Community Activities

Course Name	Community Activities
Content	
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input checked="" type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input checked="" type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>Community activities, unlike trainings, give IT professionals opportunities to learn from one other and contribute to development of subordinates. Community activities are all sorts of activities within or outside companies regardless of any types of organizations.</p> <p>Community activities outside companies are activities in academic conferences or various associations (including voluntary ones), and community activities within companies are, for instance, activities by those certified by certification system in their companies. Basically, a community is made up of one job category.</p> <ul style="list-style-type: none"> ○Individuals with high-level skills are considered out of learning through trainings, and they are expected to improve their skills by exchanging information and discussing with other individuals in community activities. ○The individuals contribute to development of subordinates through writing a paper or giving lectures based on their high-level knowledge and skills. Especially in community activities within companies, they lead activities for design, institution, and implementation of personnel system, education system, and training system. They make contribution as IT professionals in business fields to pursuit of human resource development strategies connecting to business strategies as well.
Attendee	--
Precondition	--
Training Method	--
Duration	--
Learning Goal	--

IT Architect

Training Course Description

<Specific to Each Specialty Field (Selective Courses)>

Solution Architecture Fundamentals (3 courses)

[] is a corresponding specialty field

- Application Architecture Fundamentals [Application Architecture]
- Integration Architecture Fundamentals [Integration Architecture]
- Infrastructure Architecture Fundamentals [Infrastructure Architecture]

<div>Course Name</div> <div>Content</div>	Application Architecture Fundamentals
Training Course Level	<input type="checkbox"/> Introductory Course <input checked="" type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input type="checkbox"/> Common to IT Architect <input checked="" type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is one of the courses in Solution Architecture Fundamental course group.</p> <p>Attendees acquire fundamental knowledge (e.g., design methods, products, and technology) important for design of application architecture.</p> <p>○The attendees learn the following relevant to basic design of applications in system development or solution development: understanding of business requirements, design of business processes, review of system implementation methods, products (e.g., middleware and tools), mapping of the products to frameworks, interface design, performance, high availability, expandability, application configuration, security, and clarification of risk requirements.</p>
Attendee	Those who define functional requirements, design functional architecture, assess feasibility of functional architecture, and design architecture in an application area and related areas as persons responsible for or leaders of technical teams (those who aim to acquire the knowledge of IT Architect (specialty field: Application Architecture) level 4 or 5)
Precondition	Have participated in application development projects and have completed Architecture Concept course and Modeling Fundamentals course, or possess equivalent knowledge.
Training Method	Lecture or E-learning
Duration	Standard term: 2 days (classroom) or Standard term: 18 hours (e-learning 6 hours/day x 3 days)
Learning Goal	Can design solution architecture in an application area and related areas as a person responsible for or a leader of a technical team by utilizing fundamental knowledge of application architecture.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design

Skill Items	Knowledge Items
Standardization and Reuse	<ul style="list-style-type: none"> -Definition of Development Standards -Definition of IT Standards based on Basic Principles -Reuse of Existing Assets -Understanding and Application of Reuse Techniques -Development and Application of Reusable Assets -Understanding of Reusable Asset Management Process
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards
Application Architecture Design	<ul style="list-style-type: none"> -Definition of Functional Requirements Knowledge of Target Domain -Design of Functional Architecture User Interface, Application Framework, Logic Data Framework -Assessment for Feasibility of Functional Architecture Assessment of Application Development Techniques, Assessment of Application Development Tools, Assessment of Application Test Strategies and Plans, Assessment of Operation Transfer Strategies and Plans

Content \ Course Name	Integration Architecture Fundamentals
Training Course Level	<input type="checkbox"/> Introductory Course <input checked="" type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input checked="" type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is one of the courses in Solution Architecture Fundamental course group.</p> <p>Attendees acquire fundamental knowledge (e.g., design methods, products, and technology) important for design of integration architecture.</p> <p>○The attendees learn understanding of interoperability requirements relevant to information system integration, design of business processes, review of system implementation methods, products (e.g., middleware and tools), mapping of the products to frameworks, interface design, performance, high availability, expandability, application configuration, security, and clarification of risk requirements.</p>
Attendee	Those who define integration requirements, design integration architecture, assess feasibility of integration architecture, and design architecture in an integration area and related areas as persons responsible for or leaders of technical teams (those who aim to acquire the knowledge of IT Architect (specialty field: Integration Architecture) level 4 or 5)
Precondition	Have participated in projects of information system development (each project involves a different type of architecture) and have completed Architecture Concept course and Modeling Fundamentals course, or possess equivalent knowledge.
Training Method	Lecture or E-learning
Duration	Standard term: 1 day (classroom) or Standard term: 6 hours (e-learning 6 hours/day x 1 day)
Learning Goal	Can design solution architecture in an integration area and related areas as a person responsible for or a leader of a technical team by utilizing fundamental knowledge of integration architecture.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design

Skill Items	Knowledge Items
Standardization and Reuse	<ul style="list-style-type: none"> -Definition of Development Standards -Definition of IT Standards based on Basic Principles -Reuse of Existing Assets -Understanding and Application of Reuse Techniques -Development and Application of Reusable Assets -Understanding of Reusable Asset Management Process
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards
Design of Integration Architecture	<ul style="list-style-type: none"> -Definition of Integration Requirements Knowledge of Target Domain, System Management and Operation, Security, Network, Platform, Performance and Capacity, IT Standards, etc. -Integrated Architecture Design User Interface Integrated Design, Access Integrated Design, Application Integrated Design, Process Integrated Design, Data Integrated Design -Assessment for Feasibility of Integrated Architecture Promotion of Reuse and Standardization, Assessment of Application Development Techniques, Assessment of Application Development Tools, Assessment of Application Test Strategies and Plans, Assessment of Operation Transfer Strategies and Plans, Assessment of System Infrastructure Design Techniques, Assessment of System Infrastructure Design Tools, Assessment of System Infrastructure Test Strategies and Plans, Assessment of System Infrastructure Migration Strategies and Plans

Course Name	Infrastructure Architecture Fundamentals
Content	
Training Course Level	<input type="checkbox"/> Introductory Course <input checked="" type="checkbox"/> Basic Course <input type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input checked="" type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is one of the courses in Solution Architecture Fundamental course group.</p> <p>Attendees acquire fundamental knowledge (e.g., design methods, products, and technology) important for design of infrastructure architecture.</p> <p>○The attendees learn the following relevant to basic design of applications in system development or solution development: understanding of business requirements, review of system implementation methods, products (e.g., middleware and tools), mapping of the products to frameworks, interface design, performance, high availability, expandability, application configuration, security, and clarification of risk requirements.</p>
Attendee	Those who define infrastructure requirements (mainly non-functional requirements), design infrastructure architecture, assess feasibility of infrastructure architecture, and design architecture in an infrastructure area and related areas as persons responsible for or leaders of technical teams (those who aim to acquire the knowledge of IT Architect (specialty field: Infrastructure Architecture) level 4 or 5)
Precondition	Have participated in infrastructure development projects and have completed Architecture Concept course and Modeling Fundamentals course, or possess equivalent knowledge.
Training Method	E-learning, Lecture, Workshop
Duration	<p>[First half] Standard term: 18 hours (e-learning, 6 hours/day x 3 days)</p> <p>[Second half] Standard term: 5 days (classroom)</p>
Learning Goal	Can design solution architecture in an infrastructure area and related areas as a person responsible for or a leader of a technical team by utilizing fundamental knowledge of infrastructure architecture.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design

Skill Items	Knowledge Items
Standardization and Reuse	<ul style="list-style-type: none"> -Definition of Development Standards -Definition of IT Standards based on Basic Principles -Reuse of Existing Assets -Understanding and Application of Reuse Techniques -Development and Application of Reusable Assets -Understanding of Reusable Asset Management Process
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards
Design of Infrastructure Architecture	<ul style="list-style-type: none"> -Definition of Infrastructure Requirements (Mainly Nonfunctional Requirements) Knowledge of Target Domain, System Management and Operation, Security, Network, Platform, Performance and Capacity, etc. -Infrastructure Architecture Design Design of System Management and Operation, Security Design, Network Design, Platform Design (OS, Middleware, etc.), Performance Design, Availability Design, Design for Physical Data Structure, etc. -Assessment for Feasibility of Infrastructure Architecture Assessment of System Infrastructure Design Techniques, Assessment of System Infrastructure Design Tools, Assessment of System Infrastructure Test Strategies and Plans, Assessment of System Infrastructure Migration Strategies and Plans

Solution Architecture - Advanced Level - (3 courses)

[] is a corresponding specialty field

- Application Architecture - Advanced Level - [Application Architecture]
- Integration Architecture - Advanced Level - [Integration Architecture]
- Infrastructure Architecture - Advanced Level - [Infrastructure Architecture]

<div>Course Name</div> <div>Content</div>	Application Architecture - Advanced Level -
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input checked="" type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input type="checkbox"/> Common to IT Architect <input checked="" type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is a next-level course of Application Architecture Fundamentals course.</p> <p>Attendees acquire practical knowledge of design of application architecture.</p> <p>○The attendees learn concepts of the following to understand design of optimal architecture of a whole information system:</p> <p>Requirements definition that reflects business needs, processes for solution design, design of solutions by utilizing application frameworks, technology for solution design, trade-off / advantages / disadvantages among different types of architectures, selection of products and components that adapt to application frameworks, competitors' products, components, test plans, test techniques, reduction of risks in architecture design, and design of solutions by utilizing reference models</p>
Attendee	<p>Those who have assessed requirements definition, architecture design, and feasibility of architecture, and who have designed architecture in an application area and related areas as persons responsible for technical teams (those who aim to acquire the knowledge of IT Architect (specialty field: Application Architecture) level 6)</p>
Precondition	<p>Have completed Application Architecture Fundamentals course, or possess equivalent knowledge.</p>
Training Method	<p>Lecture, Workshop</p>
Duration	<p>Standard term: 5 days (classroom)</p>
Learning Goal	<p>Can design solution architecture of a whole information system in an application area and related areas as a person responsible for a technical team in a project in which several IT architects participate by utilizing practical knowledge of methodologies and design of architecture.</p>

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design

Skill Items	Knowledge Items
Standardization and Reuse	<ul style="list-style-type: none"> -Definition of Development Standards -Definition of IT Standards based on Basic Principles -Reuse of Existing Assets -Understanding and Application of Reuse Techniques -Development and Application of Reusable Assets -Understanding of Reusable Asset Management Process
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards
Application Architecture Design	<ul style="list-style-type: none"> -Definition of Functional Requirements Knowledge of Target Domain -Design of Functional Architecture User Interface, Application Framework, Logic Data Framework -Assessment for Feasibility of Functional Architecture Assessment of Application Development Techniques, Assessment of Application Development Tools, Assessment of Application Test Strategies and Plans, Assessment of Operation Transfer Strategies and Plans

Course Name	Integration Architecture - Advanced Level -
Content	
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input checked="" type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input checked="" type="checkbox"/> Integration Architecture <input type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is a next-level course of Integration Architecture Fundamentals course, and helps attendees acquire practical knowledge of design of high-level integration architecture.</p> <ul style="list-style-type: none"> ○The attendees learn concepts of the following to design optimal architecture of a whole information system: listing of integration requirements, clarification of purposes of information system integration, trade-off / advantages / disadvantages among different types of architectures, service levels, design including reliability, expandability, security, and operability.
Attendee	Those who have defined functional requirements, designed functional architecture, assessed feasibility of functional architecture, and designed architecture in an integration area and related areas as persons responsible for technical teams (those who aim to acquire the knowledge of IT Architect (specialty field: Integration Architecture) level 6)
Precondition	Have completed Integration Architecture Fundamentals course, or possess equivalent knowledge.
Training Method	Lecture, Workshop
Duration	Standard term: 5 days (classroom)
Learning Goal	Can design solution architecture of a whole information system in an integration area and related areas as a person responsible for a technical team in a project in which several architects participate by utilizing practical knowledge of methodologies and design of architecture.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design

Skill Items	Knowledge Items
Standardization and Reuse	<ul style="list-style-type: none"> -Definition of Development Standards -Definition of IT Standards based on Basic Principles -Reuse of Existing Assets -Understanding and Application of Reuse Techniques -Development and Application of Reusable Assets -Understanding of Reusable Asset Management Process
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards
Design of Integration Architecture	<ul style="list-style-type: none"> -Definition of Integration Requirements Knowledge of Target Domain, System Management and Operation, Security, Network, Platform, Performance and Capacity, IT Standards, etc. -Integrated Architecture Design User Interface Integrated Design, Access Integrated Design, Application Integrated Design, Process Integrated Design, Data Integrated Design -Assessment for Feasibility of Integrated Architecture Promotion of Reuse and Standardization, Assessment of Application Development Techniques, Assessment of Application Development Tools, Assessment of Application Test Strategies and Plans, Assessment of Operation Transfer Strategies and Plans, Assessment of System Infrastructure Design Techniques, Assessment of System Infrastructure Design Tools, Assessment of System Infrastructure Test Strategies and Plans, Assessment of System Infrastructure Migration Strategies and Plans

Course Name	Infrastructure Architecture - Advanced Level -
Content	
Training Course Level	<input type="checkbox"/> Introductory Course <input type="checkbox"/> Basic Course <input checked="" type="checkbox"/> Advanced Course <input type="checkbox"/> Special Course
Training Area (Common or Specialty Field)	<input type="checkbox"/> Common to IT Architect <input type="checkbox"/> Application Architecture <input type="checkbox"/> Integration Architecture <input checked="" type="checkbox"/> Infrastructure Architecture
Outline	<p>Aim:</p> <p>This is a next-level course of Infrastructure Architecture Fundamentals course, and helps attendees acquire practical knowledge of design of high-level integration architecture.</p> <ul style="list-style-type: none"> ○The attendees learn concepts of the following to design optimal architecture of a whole information system: listing of integration requirements, clarification of purposes of infrastructure development, trade-off / advantages / disadvantages among different types of architectures, service levels, and design including reliability, expandability, security, and operability.
Attendee	Those who have defined functional requirements, designed functional architecture, assessed feasibility of functional architecture, and designed architecture in an infrastructure area and related areas as persons responsible for technical teams (those who aim to acquire the knowledge of IT Architect (specialty field: Integration Architecture) level 6)
Precondition	Have completed Infrastructure Architecture Fundamentals course, or possess equivalent knowledge.
Training Method	Lecture, Workshop
Duration	Standard term: 5 days (classroom)
Learning Goal	Can design solution architecture of a whole information system in an infrastructure area and related areas as a person responsible for a technical team in a project in which several architects participate by utilizing practical knowledge of methodologies and design of architecture.

Skill Items	Knowledge Items
Design of Architecture	<ul style="list-style-type: none"> -Analysis and Definition of Requirements (Constraints) -Definition of IT Architecture Design Policy -Design of IT Architecture -Feasibility Assessment from the Viewpoints of IT Architecture and Technology -Definition of Technological Problems and Analysis of Alternatives -Assessment of Platform and Component Technology
Design Techniques	<ul style="list-style-type: none"> -Understanding of Modeling Techniques -Understanding and Application of Data Modeling Techniques -Understanding and Application of Process Modeling Techniques -Understanding and Application of Performance Modeling Techniques -Understanding and Utilization of Application Design Techniques -Understanding and Application of Infrastructure Design

Skill Items	Knowledge Items
Standardization and Reuse	<ul style="list-style-type: none"> -Definition of Development Standards -Definition of IT Standards based on Basic Principles -Reuse of Existing Assets -Understanding and Application of Reuse Techniques -Development and Application of Reusable Assets -Understanding of Reusable Asset Management Process
Technology	<ul style="list-style-type: none"> -Understanding of IT Industry Trends Understanding of IT Market Scale and Trends Domestic and Abroad, Understanding of Technology Trends Related to Application, Understanding of Technology Trends Related to Business Model Patents -Understanding of Relevant Technology (IT) Trends Understanding of Hardware Technology Trends Understanding of Middleware Technology Trends, Understanding of Platform Technology Trends, Understanding of Network Technology Trends, Understanding of Database Technology Trends, Understanding of Security Technology Trends, Understanding of System Management Technology Trends -Understanding and Application of Relevant Technology (IT) Standards
Design of Infrastructure Architecture	<ul style="list-style-type: none"> -Definition of Infrastructure Requirements (Mainly Nonfunctional Requirements) Knowledge of Target Domain, System Management and Operation, Security, Network, Platform, Performance and Capacity, etc. -Infrastructure Architecture Design Design of System Management and Operation, Security Design, Network Design, Platform Design (OS, Middleware, etc.), Performance Design, Availability Design, Design for Physical Data Structure, etc. Assessment of System Infrastructure Design Techniques, Assessment of System Infrastructure Design Tools, Assessment of System Infrastructure Test Strategies and Plans, Assessment of System Infrastructure Migration Strategies and Plans