ARCH 4 DEV

Growing the skills you need for client success.
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Course Outline
Welcome to the Architecture for Developers course! This course is an introduction for those wanting to further pursue an architecture career path and understand some of the key tenets and components of architecture. The course is an introduction to styles, architectural requirements, design by intention, agile architecture concepts and the basis for further study in the field of architecture.

Starting Point
This course focuses on the aha moments for technical staff who want to understand how they become architects and/or deliver valuable architecture. They are concerned with the changes needed to people, processes, and technology. To provide the greatest value, you must be able to move beyond creating solutions to satisfy a number of requirements to advising the customer in technology use for the processes and how people and processes will be impacted and need to change as a result of the changes your solution proposes.

Target Audience
This course was designed as an introduction to architecture elements and as a preparatory step for Iasa Core and then Iasa Associate Courses. It is targeted at mid to senior developers, technologists, and infrastructure and cloud specialists who want to get familiar with architecture and to prepare for the journey to become a fully certified architect. As such, there will be a final presentation at the end of class and a certificate of completion upon delivery. The CITA-Foundation Core course which follows this course is the first full level of certification on an Architects career path. We expect the following roles to consider this course:

- Sr Developers
- Infrastructure
- Cloud
- Operations
- IT Experts

This 12-lesson commitment is given in multiple ‘modalities’. The online version will be two lessons per week with workshops in class and some homework. The in-person course is 3-3.5 days, with workshops as a part of the class. Additional self-paced learning materials and templates are provided to help complete defined tasks. The time to complete the self-paced activities will be a maximum of 6-10 hours of your time in addition to class time.

Stakeholders, Customers, and the Client’s Customer
Some terminology in class… a client to you is any employer of your architecture expertise. But a customer to them is whoever benefits from their product or service. As an architect, you have a dual responsibility to both the Client and the Client’s Customer. It can be a little crazy-making. In the class, when we say customer, we are almost always referring to the Client’s Customer. This is because when you are with your Account, their customer is your true objective as an architect. The demonstration of this fact is what builds a trusted advisor relationship.

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1 This course applies equally to all technical staff, especially those that interact with others in Architecture roles
Workshops and Structured Canvas Approach

In each lesson we will introduce you to a range of Canvas and Cards; these bring to life the theory as well as provide a simple workspace for you to experiment, document and share the information you collect and the analysis you perform. Self-paced materials such as Learning Shots indicated for each lesson are further, optional learning opportunities.

Workshops will be based on practical hands-on code or real-life examples. Here are the primary canvases we use in class.
Course Syllabus

Section 1 – Introduction: Lesson 1
Section 2 – Architect Career Path: Lesson 2
Section 3 – Solution Design Space: Lesson 3
Section 4 – Teams and People: Lesson 4
Section 5 – Stories and Epics: Lesson 5
Section 6 – Design Space: Lesson 6
Section 7 – Patterns of Architecture: Lesson 7
Section 8 – Views and Viewpoints: Lesson 8
Section 9 – Software Architecture: Lesson 9
Section 10 – Infrastructure and Cloud: Lesson 10
Section 11 – Information and Data: Lesson 11
Section 12 – Getting Ready for Core – Next Steps: Lesson 12
Lesson 1 – Introduction
In the introduction we cover the basics of architecture as well as the understanding of the practice. Students get to see the difference between technologists, developers, operations and infrastructure.

Behavioral Objectives:
- Define personal course objectives
- Define class outcome goals
- Describe the client/customer/stakeholder
- Discuss Architecture and its Definition

Self-paced materials:
- Iasa self and peer assessments (class invitations to be sent)
What is Architecture: https://btabok.iasaglobal.org/what-is-architecture/

Practice/demonstration of techniques and tools
- Workshop: What are the types of architects, how do they differ?
- Arch Definition Canvas

Lesson 2 – Architecture Career Path
Understanding competencies in context of the career path. Becoming an architect is a lifelong journey.

Behavioral Objectives:
- Understand the career of architecture
- Compare with Technical Expert
- Demonstrate the overlaps
- Demonstrate specializations and shared skills

Self-paced materials:
- Competencies 1: https://btabok.iasaglobal.org/competencies-module-1/
- Business Technology Architecture Body of Knowledge | IASA - BTABoK (iasaglobal.github.io)

Practice/demonstration of techniques and tools
- Worksheet: Career Path Canvas
- Worksheet: Competency Canvas

Lesson 3 – Solution Space
Describe the entire solution space. These are the areas architects consider when designing, delivering and deploying a solution.
Lesson 4 – Teams and People

Understanding the role of architects and architecture in the modern team and team of teams. This lesson digs into agile methods and design concepts such as emergent design and intentional architecture. It also clarifies the people who work on architecture vs being an architect.

Behavioral Objectives:
- Think through the team and team roles
- How would an architect interact proactively
- How do we get buy off on designs and ideas
- How do we understand our stakeholders

Self-paced materials:
- Human Dynamics: [https://btabok.iasaglobal.org/competencies-3/](https://btabok.iasaglobal.org/competencies-3/)
- Stakeholder Management: [Stakeholder Driven Approach - BTABoK (iasaglobal.org)](https://btabok.iasaglobal.org/competencies-3/)
- Dev/Ops and Teams [https://itabok.iasaglobal.org/agile-architecture-scale/](https://itabok.iasaglobal.org/agile-architecture-scale/)

Practice/demonstration of techniques and tools
- Spreadsheet: Stakeholder Analysis
- Worksheet: Agile Team Designer

Lesson 5 – Stories and Epics

Let's dig deep on requirements. This goes from an engineering-level understanding of the types of requirements to a detailed view of stories, epics, features and how technologists begin wondering which requirement is architectural.

Behavioral Objectives:
• Define and describe architecturally significant requirements. Be able to defend and describe the impact of the requirements and how it shapes the solution.
• Going from Detailed Requirements to Epics to Enablers
• Begin drawing out the design space and decisions

Self-paced materials:
• Detailed Requirements and their Evolution
• Architecturally Significant Requirements https://itabok.iasaglobal.org/architecturally-significant-requirements/

Practice/demonstration of techniques and tools
• Card: ASRs – Features, Value, Quality Attributes, Constraints
• Canvas: Service Blueprint
• Canvas: Customer Journey and the UI

Lesson 6 – Design Space(s)
Design spaces are places where the architecture happens. From the whiteboard to coding. Understanding the design space and decisions will help you to grow your systems thinking capabilities.

Behavioral Objectives:
• Defining the Design Space
• Development Value Streams
• Continuous Everything: Getting the Right Velocity
• Modeling and Notations

Self-paced materials:
• Design: https://btabok.iasaglobal.org/architecture-design/
• APIs and Services: https://btabok.iasaglobal.org/services-and-integration/

Practice/demonstration of techniques and tools
• Worksheet: Design Spaces
• Worksheet: Components and Dependencies

Lesson 7 – Patterns, Styles and Reference Models
Understanding the use of patterns in architecture is essential to re-use knowledge and solutions.

Behavioral Objectives:
• Define architectural styles including Microservices, Integration and Modular Monoliths
• Understand the impact of patterns and pattern applications
Lesson 8 – Views and Viewpoints
In this lesson you will review and develop different types of views and viewpoints for a solution delivery. Different examples will be provided as well as comparison of modeling languages and documentation of architecture descriptions.

Behavioral Objectives:
- Describe a view and within an architecture description
- Describe the views needed for delivery of the architecture
- Describe how the architecture can evolve throughout the lifecycle

Self-paced materials:
- IT Environment: https://btabok.iasaglobal.org/competencies-4/
- Architecture Design: https://btabok.iasaglobal.org/architecture-design/
- Architecture Descriptions: https://btabok.iasaglobal.org/archdescriptions/

Practice/demonstration of techniques and tools
- Canvas: Engagement Model Process
- Architecture Views: Setup and evolve a template

Lesson 9 – Software Architecture
This lesson focuses on the software intensive sections of an architecture and where they reside. It will help you to understand the elements of a working software architecture and how they interact with other elements of the solution.

Behavioral Objectives:
- Define and identify modern architecture styles including microservices, serverless, hexagonal architectures
- Choose language and development platforms for multiple teams
- Describe the Development view within the architecture
- Describe the Testing Methods in use
Lesson 10 – Infrastructure and Cloud
In this lesson you will develop a basic cloud infrastructure view of a project by understanding what are the key elements, views, designs and decisions.

Behavioral Objectives:
- Defining the development, integration, testing and production environments
- Define difficulties in multi-team builds and appropriate velocity
- Discuss immutable infrastructure and replaceable components

Self-paced materials:
- IT Environment: https://btabok.iasaglobal.org/competencies-4/
- Architecture Design: https://btabok.iasaglobal.org/architecture-design/
- Cloud and Hybrid Design

Practice/demonstration of techniques and tools
- Cloud Infrastructure View/Design
- Structured/Unstructured Data

Lesson 11 – Information and Data
In this lesson you will look at the emergence of architecture in information and data. From large data, to data and integration patterns, this lesson will help you understand the solution, information, integration and data spaces.

Behavioral Objectives:
- Define a working Data Model for the Test Application
- Describe how the information would flow through the system of systems

Self-paced materials:
• Describe entities and understand the beginnings of DDD
• Describe data/integration patterns

Self-paced materials:

• Domain Driven Design
• Reporting, Transactions and Integration
• Details Design Example

Practice/demonstration of techniques and tools

• Event Storming
• Detailed Context Views

Lesson 12 – Closing and Next Steps
In the final lesson you will bring together everything you have learned into an architecture description and make a short presentation of your work throughout the course.

Section 12 – Putting It All Together

Behavioral Objectives:
• Define your customer outcomes and describe your wins and losses
• Demonstrate changes in your behavior towards customers and businesses
• Understand the next steps in becoming an architect – the Iasa Career path
• How you can get your organization to start doing architecture right

Practice/demonstration of techniques and tools
• Final Presentation Workshop: Putting all of the work you have done together into a comprehensible presentation (template provided)