

COURSE Syllabus

Tên chương trình	Khóa học Lập trình back-end với Java
Thời lượng	90 giờ
Phiên bản	1.0
Designer	Kỳ Lê

Các môn học/chủ đề và thời lượng:

1. SQL Essentials

SQL Essentials

Thời lượng: 18 giờ

Lessons	Note
Session 01: Database Concepts and ER Model ✓ Database Concepts ✓ ER Model, Relational Model	
Session 02: Introduction SQL and SQL Server ✓ SQL Data Types ✓ Operations ✓ Introduction to SQL ✓ DDL Statements	
Session 03: DML Statements ✓ DML Statements (Insert, Update, Delete)	
Session 04: Day 04: DML Statements (Cont) ✓ Select statement	
Session 05: SQL Joins ✓ Introduction to JOIN ✓ INNER JOIN ✓ OUTER JOIN	
Session 06: Sub-Queries and Best Practices & Final Test ✓ Introduction to Subquery ✓ Type of Sub-Queries ✓ Common cases use Sub-Queries ✓ Sub-query rules ✓ SQL Best Practices ✓ Final Test	

2. Java Programming Essentials

Java SE Programming Essentials

Thời lượng: 42 giờ

Lessons	Note
Session 01: Java Introduction <ul style="list-style-type: none"> ✓ Introduction to Java ✓ First Java Program ✓ Basic Java Syntax ✓ Java Operators 	
Session 02: Control Flow Statements <ul style="list-style-type: none"> ✓ If statements ✓ If/else statements ✓ Switch case statements 	
Session 03: Control Flow Statements <ul style="list-style-type: none"> ✓ For loop ✓ While loop ✓ Do..while loop ✓ Break/continue statements 	
Session 05: Array <ul style="list-style-type: none"> ✓ Array introduction ✓ Type of arrays ✓ Array statements ✓ Array problem solving 	
Session 05: Classes and Object <ul style="list-style-type: none"> ✓ Basic concepts (Class, Object, Constructor) ✓ Methods ✓ static keyword ✓ this keyword 	
Session 06: Constructors, Access Specifier and Overloading methods <ul style="list-style-type: none"> ✓ More about Constructor methods ✓ Access modifiers ✓ Overloading methods 	

Session 07: Encapsulation & Inheritance <ul style="list-style-type: none"> ✓ Encapsulation ✓ Inheritance ✓ Final keyword ✓ Inheritance ✓ Object class 	
Session 08: Java Polymorphism and Abstraction <ul style="list-style-type: none"> ✓ Basic concepts ✓ Method Overloading and Overriding ✓ Abstract class ✓ Static keyword 	
Session 09: Exception Handling <ul style="list-style-type: none"> ✓ Introduction to Java Exception ✓ Exception handling ✓ Check and unchecked exceptions ✓ Throw and Throws keywords 	
Session 10: Java Collection Framework <ul style="list-style-type: none"> ✓ Overview of Set Collection ✓ List interface ✓ ArrayList, LinkedList 	
Session 11: Database Programming with JDBC <ul style="list-style-type: none"> ✓ Introduction to JDBC ✓ Connection class ✓ Statement class ✓ ResultSet class 	
Session 12: Database Programming with JDBC <ul style="list-style-type: none"> ✓ More about Connection class ✓ More about Statement class ✓ More about ResultSet class ✓ PreparedStatement ✓ Organize project DAO (repository) classes, Service classes 	
Session 13: Testing with JUnit5 in Java <ul style="list-style-type: none"> ✓ What is Unit Testing? ✓ Introduction to JUnit ✓ Setting up JUnit ✓ JUnit Test framework ✓ JUnit Assert ✓ JUnit TestSuite 	

Session 14: Final Exam

✓ Practice test: 3.0 hours

3. Back-end**Back-end Essentials***Thời lượng: 18 giờ*

Lessons	Note
Session 01: Introduction ✓ Introduction to Web Services ✓ Introduction to Spring Boot ✓ RESTful Web Services <ul style="list-style-type: none"> <input type="checkbox"/> RESTful Web Services with Spring Boot <input type="checkbox"/> POST method <input type="checkbox"/> GET method <input type="checkbox"/> PUT method <input type="checkbox"/> DELETE method 	
Session 02: Spring Data JPA ✓ Introduction to JPA ✓ Overview contents ✓ Entity class ✓ DAO layer	
Session 03: Spring Data JPA (Cont.) ✓ Object relational mapping ✓ OneToOne ✓ OneToMany ✓ ManyToMany	

Session 04: Spring Security

- ✓ Introduction
- ✓ Integration
- ✓ Development Steps

Session 05: Connecting RESTful Web Service to JPA

- ✓ Introduction to RESTful Web Services
- ✓ Initializing a RESTful Web Services Project with Spring Boot
- ✓ RequestBody and ResponseBody

Session 06: Connecting RESTful Web Service to JPA (Cont.)

- ✓ Rest Controller
- ✓ ResponseEntity
- ✓ Build a CRUD RESTful Web Services
- ✓ Introduction to Postman

4. Mock Project/OJT**Mock Project/OJT and Interview****Thời lượng: 12 giờ****Session01: GIT/SVN****Session 02-03-04: Mock Project**

- ✓ Project Setup
- ✓ Creating and Editing Java Source Code
- ✓ Compiling and Running the Application
- ✓ Testing and Debugging the Application
- ✓ Building, Running, and Distributing the Application

GIÁM ĐỐC ĐÀO TẠO R2S ACADEMY