

Schedule

Week 1

- Mon**
- Goals:
 - Basic comfort with Java
 - Basic setup with IntelliJ
 - Topics:
 - (Java/OOP) classes, fields, constructors, encapsulation
 - (Java/OOP) methods, parameters, local variables, constants/final
 - (Java/OOP) static methods
 - Activities for Day 1¹
 - Lunchtime Video: Clean Code-Remake (54m)²
- Tue**
- Goals:
 - Variable and function basic principles
 - Basic refactorings: extract variable/field/method, rename, inline
 - Function size principles (“extract till you drop”)
 - Prep:
 - Read *Clean Code*³, chapters 1-3
 - Watch Names++⁴
 - Topics:
 - (Coding) naming variables and methods
 - (Coding) extracting code into small functions
 - Activities for Day 2⁵
 - Lunchtime Video: Refactoring screencast “2”: Prime generator⁶
- Wed**
- Goals:
 - Comment and Code formatting principles
 - Function structure principles
 - Prep:
 - Read *Clean Code*⁷, chapters 4, 5
 - Watch Function Structure video selected parts⁸
 - Topics:

¹[lessonPlans/lessonPlanDay1.html](#)

²[videos/01-clean_code.html](#)

³<https://learning.oreilly.com/library/view/clean-code/9780136083238/>

⁴[videos/02-names.html](#)

⁵[lessonPlans/lessonPlanDay2.html](#)

⁶[videos/04-prime_gen_screencast.html](#)

⁷<https://learning.oreilly.com/library/view/clean-code/9780136083238/>

⁸[videos/05-function_structure.html](#)

- (Coding) function parameters, command-query separation
- (Coding) comments and formatting
- Activities for Day 3⁹
- Lunchtime Video: Form¹⁰

- Thu**
- Goals:
 - Deep dive into extension mechanisms: inheritance and delegation
 - Discussion of the concept and value of polymorphism and information hiding
 - “Tell, don’t ask”
 - Prep:
 - Read *Design Patterns*, chapter 1.6
 - Read *Clean Code*¹¹, chapter 6
 - Topics:
 - (Java/OOP) Inheritance vs Composition
 - (Coding) Law of Demeter (Tell, don’t ask)
 - Activities for Day 4¹²
 - Lunchtime Video: TDD Part 1¹³

- Fri**
- Goals:
 - Code tracking with Version Control
 - Automated Testing and Test-driven development
 - Prep:
 - Read *Clean Code*¹⁴, chapter 9
 - Topics:
 - (Practices) Version Control Basics
 - (Practices) Test-Driven Development
 - Activities for Day 5¹⁵
 - Lunchtime Video: TDD Part 2¹⁶

Week 2

- Mon**
- Goals:
 - Exam 1

⁹[lessonPlans/lessonPlanDay3.html](#)

¹⁰[videos/06-form.html](#)

¹¹<https://learning.oreilly.com/library/view/clean-code/9780136083238/>

¹²[lessonPlans/lessonPlanDay4.html](#)

¹³[videos/07-tdd_part1.html](#)

¹⁴<https://learning.oreilly.com/library/view/clean-code/9780136083238/>

¹⁵[lessonPlans/lessonPlanDay5.html](#)

¹⁶[videos/08-tdd_part2.html](#)

- Introduction to Agile Methodologies
- Introduction to the SOLID design principles and SRP
- Introduce User Roles/Actors in context of SOLID principles
- (Practices) Principles of Agile Development
 - Discussion of XP methodologies (pair programming, tests first etc)
- (Principles) Single Responsibility Principle
 - Reading: ASD chapters 7, 8
 - Videos: In class: notes #1 and #2
- Activities for Day 6¹⁷
- Prep:
 - Reading: ASD chapters 1-4

Tue

- Goals:
 - Interfaces and dependency inversion (lamp example)
 - Introduction to Open-Closed Principle
- (Principles) General values and principles for coding
- (Java/OOP) Interfaces
- (Principles) Open-Closed Principle
 - Reading: ASD chapter 9
 - Video: In class
- (Principles) Liskov Substitution Principle
 - Video: In class
 - Reading: ASD chapter 10
- (Practices) SOLID Principles Use Case (as in Clean Code video #14)
- Activities for Day 7¹⁸
- Prep:
 - Reading: ASD chapters 7-8

Wed

- Goals:
 - Dependency Inversion Principle
 - Interface Segregation Principle
 - SOLID Principles Wrap-up Example
- (Principles) Dependency Inversion Principle
 - Video: In class
 - Reading: ASD chapter 11
- (Principles) Interface Segregation Principle
 - Video: In class

¹⁷lessonPlans/lessonPlanDay6.html

¹⁸lessonPlans/lessonPlanDay7.html

- Reading: ASD chapter 12

- Thur**
- Goals:
 - Advanced TDD
 - Clean Tests
 - Test Design
 - Video: Advanced TDD Part 1?

- Fri**
- Goals:
 - Test Process
 - Mocking
 - Code Review

Week 3

Design Patterns in the morning; Work on project in the afternoon

- Not sure where these goes:**
- (Java/OOP) Inner classes
 - (Coding) Exception Handling
 - Reading: Clean Code chapter 7
 - Goals:
 - Planning: User Stories, CRC Cards, Acceptance Tests (Move to Later)
 - (Practices) User Stories
 - Video: Clean Code, Architecture, Use Cases and High Level design
 - (Practices) CRC Cards
- Mon**
- (Patterns) Command
 - Video: Clean Code: Design Patterns
 - Reading: ASD chapter 13
 - (Patterns) Template Method, Strategy
 - Video: Strategy and Template Method Patterns
 - Reading: ASD chapter 14
 - (Patterns) Facade, Mediator
 - Video: Clean Code: Pattern Roundup
 - Reading: ASD chapter 15
 - (Practices) UML Class Diagrams
 - (Patterns) Factory
 - Video: Clean Code: Factories
 - Reading: ASD chapter 21
 - TODO: Refactoring earlier

- (Coding) Refactoring: Basic extractions, Inline
 - Video: Function Screencast, Prime Number Generation
 - Reading: ASD chapter 5
- Work on Project
- Tue**
 - (Patterns) Null Object
 - Video: Clean Code: Pile O'Patterns
 - Reading: ASD chapter 16
 - (Patterns) Singleton, Monostate
 - Video: Clean Code: Pile O'Patterns
 - Reading: ASD chapter 17
 - (Coding) Refactoring: Moving, signature change
 - Work on Project
- Wed**
 - Reading: Clean Code, chapter 17 (smells/heuristics)
 - Work on Project
- Thu**
 - (Patterns) Observer
 - Video: The Observer Pattern
 - Reading: ASD chapter 24
 - (Patterns) Adapter, Bridge, Proxy
 - Video: Clean Code: Pile O'Patterns
 - Reading: ASD chapters 25, 26
 - Work on Project
- Fri**
 - (Patterns) Composite
 - Reading: ASD chapter 23
 - (Practices) UML Sequence Diagrams
 - Work on Project

Week 4

- Mon**
 - (Java/OOP) packages, modules (earlier?)
 - (Patterns) Visitor
 - Reading: ASD chapter 28
 - Work on Project
- Tue**
 - (Patterns) State
 - Video: Finite State Machines and State Pattern
 - Reading: ASD chapter 29
 - Work on Project
- Wed**
 - Work on Project
- Thu**
 - Work on Project
- Fri**
 - Work on Project