

Schedule

Week 1 Java and OOP Basics

Mon 09/09 • Lesson plan Day 1¹

Wed 09/11 • Lesson plan Day 2²

Fri 09/13 • Lesson plan Day 3³

Week 2 Refactoring and Code Formatting

Mon 09/16 • Lesson plan Day 4⁴

Wed 09/18 • Lesson plan Day 5⁵

Fri 09/20 • Lesson plan Day 6⁶

Week 3 More refactoring and Test-Driven-Development

Mon 09/23 • Lesson plan Day 7⁷

Wed 09/25 • Lesson plan Day 8⁸

Fri 09/27 • Lesson plan Day 9⁹

Week 4 Agile Design and Client Meeting, Project Start

Mon 09/30 • Lesson plan Day 10¹⁰

Wed 10/02 • Lesson plan Day 11¹¹

Fri 10/04 • Lesson plan Day 12¹²

¹[lessonPlansFall/lessonPlanDay01.html](#)

²[lessonPlansFall/lessonPlanDay02.html](#)

³[lessonPlansFall/lessonPlanDay03.html](#)

⁴[lessonPlansFall/lessonPlanDay04.html](#)

⁵[lessonPlansFall/lessonPlanDay05.html](#)

⁶[lessonPlansFall/lessonPlanDay06.html](#)

⁷[lessonPlansFall/lessonPlanDay07.html](#)

⁸[lessonPlansFall/lessonPlanDay08.html](#)

⁹[lessonPlansFall/lessonPlanDay09.html](#)

¹⁰[lessonPlansFall/lessonPlanDay10.html](#)

¹¹[lessonPlansFall/lessonPlanDay11.html](#)

¹²[lessonPlansFall/lessonPlanDay12.html](#)

Week 5 Agile Design and Client Meeting, Project Start

Mon 10/07 • Lesson plan Day 13¹³

Wed 10/09 • Lesson plan Day 14¹⁴

Fri 10/11 Midterm 1 (study guide¹⁵)

Week 6 More Agile, Writing Clean Tests

Mon 10/14 • Lesson plan Day 15¹⁶

Wed 10/16 • Lesson plan Day 16¹⁷

Fri 10/18 • Lesson plan Day 17¹⁸

Week 7 The SOLID principles

Mon 10/21 FALL BREAK

Wed 10/23 • Lesson plan Day 18¹⁹

Fri 10/25 • Lesson plan Day 19²⁰

Week 8 More SOLID

Mon 10/28 • Lesson plan Day 20²¹

Wed 10/30 • Lesson plan Day 21²²

Fri 11/01 • Lesson plan Day 22²³

Week 9 Design Patterns

Mon 11/04 • Lesson plan Day 23²⁴

Wed 11/06 • Lesson plan Day 24²⁵

Fri 11/08 Midterm 2

¹³[lessonPlansFall/lessonPlanDay13.html](#)

¹⁴[lessonPlansFall/lessonPlanDay14.html](#)

¹⁵[notes/midterm1StudyGuide.html](#)

¹⁶[lessonPlansFall/lessonPlanDay15.html](#)

¹⁷[lessonPlansFall/lessonPlanDay16.html](#)

¹⁸[lessonPlansFall/lessonPlanDay17.html](#)

¹⁹[lessonPlansFall/lessonPlanDay18.html](#)

²⁰[lessonPlansFall/lessonPlanDay19.html](#)

²¹[lessonPlansFall/lessonPlanDay20.html](#)

²²[lessonPlansFall/lessonPlanDay21.html](#)

²³[lessonPlansFall/lessonPlanDay22.html](#)

²⁴[lessonPlansFall/lessonPlanDay23.html](#)

²⁵[lessonPlansFall/lessonPlanDay24.html](#)

Week 10 More Design Patterns

Mon 11/11 • Lesson plan Day 25²⁶

Wed 11/13 • Lesson plan Day 26²⁷

Fri 11/15 • Lesson plan Day 27²⁸

Week 11 Even More Design Patterns

Mon 11/18 • Lesson plan Day 28²⁹

Wed 11/20 • Lesson plan Day 29³⁰

Fri 11/22 • Lesson plan Day 30³¹

Week 12 Project Work

Mon 11/25 • Lesson plan Day 31³²

Wed 11/27 THANKSGIVING BREAK

Fri 11/29 THANKSGIVING BREAK

Week 13 Project Work

Mon 12/02 • Lesson plan Day 32³³

Wed 12/04 • Lesson plan Day 33³⁴

Fri 12/06 • Lesson plan Day 34³⁵

Week 1

Tue • Goals:

- Variable and function basic principles
- Basic refactorings: extract variable/field/method, rename, inline
- Function size principles (“extract till you drop”)

²⁶[lessonPlansFall/lessonPlanDay25.html](#)

²⁷[lessonPlansFall/lessonPlanDay26.html](#)

²⁸[lessonPlansFall/lessonPlanDay27.html](#)

²⁹[lessonPlansFall/lessonPlanDay28.html](#)

³⁰[lessonPlansFall/lessonPlanDay29.html](#)

³¹[lessonPlansFall/lessonPlanDay30.html](#)

³²[lessonPlansFall/lessonPlanDay31.html](#)

³³[lessonPlansFall/lessonPlanDay32.html](#)

³⁴[lessonPlansFall/lessonPlanDay33.html](#)

³⁵[lessonPlansFall/lessonPlanDay34.html](#)

- Prep:
 - Read *Clean Code*³⁶, chapters 1-3
 - Watch Names++³⁷
- Topics:
 - (Coding) naming variables and methods
 - (Coding) extracting code into small functions
- Activities for Day 2³⁸
- Lunchtime Video: Refactoring screencast “2”: Prime generator³⁹

Wed

- Goals:
 - Comment and Code formatting principles
 - Function structure principles
- Prep:
 - Read *Clean Code*⁴⁰, chapters 4, 5
 - Watch Function Structure video selected parts⁴¹
- Topics:
 - (Coding) function parameters, command-query separation
 - (Coding) comments and formatting
- Activities for Day 3⁴²
- Lunchtime Video: Form⁴³

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*⁴⁴, chapter 6
- Topics:
 - (Java/OOP) Inheritance vs Composition
 - (Coding) Law of Demeter (Tell, don’t ask)
- Activities for Day 4⁴⁵

³⁶<https://learning.oreilly.com/library/view/clean-code/9780136083238/>

³⁷[videos/02-names.html](https://learning.oreilly.com/library/view/clean-code/9780136083238/videos/02-names.html)

³⁸[lessonPlans/lessonPlanDay02.html](https://learning.oreilly.com/library/view/clean-code/9780136083238/lessonPlans/lessonPlanDay02.html)

³⁹[videos/04-prime_gen_screencast.html](https://learning.oreilly.com/library/view/clean-code/9780136083238/videos/04-prime_gen_screencast.html)

⁴⁰<https://learning.oreilly.com/library/view/clean-code/9780136083238/>

⁴¹[videos/05-function_structure.html](https://learning.oreilly.com/library/view/clean-code/9780136083238/videos/05-function_structure.html)

⁴²[lessonPlans/lessonPlanDay03.html](https://learning.oreilly.com/library/view/clean-code/9780136083238/lessonPlans/lessonPlanDay03.html)

⁴³[videos/06-form.html](https://learning.oreilly.com/library/view/clean-code/9780136083238/videos/06-form.html)

⁴⁴<https://learning.oreilly.com/library/view/clean-code/9780136083238/>

⁴⁵[lessonPlans/lessonPlanDay04.html](https://learning.oreilly.com/library/view/clean-code/9780136083238/lessonPlans/lessonPlanDay04.html)

- Lunchtime Video: TDD Part 1⁴⁶

Fri • Goals:

- Code tracking with Version Control
- Automated Testing and Test-driven development
- Prep:
 - Read *Clean Code*⁴⁷, chapter 9
- Topics:
 - (Practices) Version Control Basics
 - (Practices) Test-Driven Development
- Activities for Day 5⁴⁸
- Lunchtime Video: TDD Part 2⁴⁹

Week 2

Mon • Goals:

- Exam 1
- 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 6⁵⁰
- 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

⁴⁶[videos/07-tdd_part1.html](#)

⁴⁷<https://learning.oreilly.com/library/view/clean-code/9780136083238/>

⁴⁸[lessonPlans/lessonPlanDay05.html](#)

⁴⁹[videos/08-tdd_part2.html](#)

⁵⁰[lessonPlans/lessonPlanDay06.html](#)

- Reading: ASD chapter 9
- Video: In class
- (Principles) Liskov Substitution Principle
 - Video: In class
 - Reading: ASD chapter 10
- 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
 - Reading: ASD chapter 12
- Activities for Day 7⁵¹
- Prep:
 - Reading: ASD chapters 7-8

- Wed**
- Goals:
 - Reinforce the SOLID Principles understanding with a use case example.
 - Become comfortable with user roles and user stories
 - Be introduced to the projects and meets with clients to create initial requirements and user stories.
 - (Practices) SOLID Principles Use Case (as in Clean Code video #14)
 - Activities for Day 8⁵²
 - (Project) Initial client meetings
 - Prep:
 - Reading: From “User Stories Applied”: Chapters 2, 3, 4

- Thur**
- Goals:
 - Liskov Substitution Principle and SOLID Principles wrap-up
 - Clean Tests
 - Test Design
 - Activities for Day 9⁵³

- Fri**
- Goals:
 - Mocking
 - Activities for Day 10⁵⁴
 - (Project) Iteration 0 with clients

⁵¹[lessonPlans/lessonPlanDay07.html](#)

⁵²[lessonPlans/lessonPlanDay08.html](#)

⁵³[lessonPlans/lessonPlanDay09.html](#)

⁵⁴[lessonPlans/lessonPlanDay10.html](#)

Week 3

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

- Mon**
- Goals:
 - Test Process
 - Review Project Rules & Regulations
 - Activities for Day 11⁵⁵
 - (Project) Start iteration 1
- Tue**
- Exam 2
 - Work on Project
- Wed**
- (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
 - Activities for Day 13⁵⁶
 - Work on Project
- Thu**
- (Patterns) Factory
 - Video: Clean Code: Factories
 - Reading: ASD chapter 21
 - (Patterns) Facade, Mediator
 - Video: Clean Code: Pattern Roundup
 - Reading: ASD chapter 15
 - Activities for Day 14⁵⁷
 - Work on Project
- Fri**
- (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
 - Activities for Day 15⁵⁸
 - Work on Project

⁵⁵[lessonPlans/lessonPlanDay11.html](#)

⁵⁶[lessonPlans/lessonPlanDay13.html](#)

⁵⁷[lessonPlans/lessonPlanDay14.html](#)

⁵⁸[lessonPlans/lessonPlanDay15.html](#)

Week 4

- Mon**
- (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
 - Activities for Day 16⁵⁹
 - Work on Project
- Tue**
- (Patterns) Composite
 - Reading: ASD chapter 23
 - (Patterns) Visitor
 - Reading: ASD chapter 28
 - Activities for Day 17⁶⁰
 - Work on Project
- Wed**
- (Patterns) State
 - Video: Finite State Machines and State Pattern
 - Reading: ASD chapter 29
 - Work on Project
 - Work on Project
- Thu**
- Exam
 - Work on Project
- Fri**
- Work on Project
 - End early, final demo

⁵⁹lessonPlans/lessonPlanDay16.html

⁶⁰lessonPlans/lessonPlanDay17.html