

# Schedule

## Week 1 Java and OOP Basics

**Mon 09/09** • Lesson plan Day 1<sup>1</sup>

**Wed 09/11** • Lesson plan Day 2<sup>2</sup>

**Fri 09/13** • Lesson plan Day 3<sup>3</sup>

## Week 2 Refactoring and Code Formatting

**Mon 09/16** • Lesson plan Day 4<sup>4</sup>

**Wed 09/18** • Lesson plan Day 5<sup>5</sup>

**Fri 09/20** • Lesson plan Day 6<sup>6</sup>

## Week 3 More refactoring and Test-Driven-Development

**Mon 09/23** • Lesson plan Day 7<sup>7</sup>

**Wed 09/25** • Lesson plan Day 8<sup>8</sup>

**Fri 09/27** • Lesson plan Day 9<sup>9</sup>

## Week 4 Agile Design and Client Meeting, Project Start

**Mon 09/30** • Lesson plan Day 10<sup>10</sup>

**Wed 10/02** • Lesson plan Day 11<sup>11</sup>

**Fri 10/04** • Lesson plan Day 12<sup>12</sup>

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<sup>1</sup>[lessonPlansFall/lessonPlanDay01.html](#)

<sup>2</sup>[lessonPlansFall/lessonPlanDay02.html](#)

<sup>3</sup>[lessonPlansFall/lessonPlanDay03.html](#)

<sup>4</sup>[lessonPlansFall/lessonPlanDay04.html](#)

<sup>5</sup>[lessonPlansFall/lessonPlanDay05.html](#)

<sup>6</sup>[lessonPlansFall/lessonPlanDay06.html](#)

<sup>7</sup>[lessonPlansFall/lessonPlanDay07.html](#)

<sup>8</sup>[lessonPlansFall/lessonPlanDay08.html](#)

<sup>9</sup>[lessonPlansFall/lessonPlanDay09.html](#)

<sup>10</sup>[lessonPlansFall/lessonPlanDay10.html](#)

<sup>11</sup>[lessonPlansFall/lessonPlanDay11.html](#)

<sup>12</sup>[lessonPlansFall/lessonPlanDay12.html](#)

## **Week 5 Agile Design and Client Meeting, Project Start**

**Mon 10/07** • Lesson plan Day 13<sup>13</sup>

**Wed 10/09** • Lesson plan Day 14<sup>14</sup>

**Fri 10/11** Midterm 1 (study guide<sup>15</sup>)

## **Week 6 The SOLID principles**

**Mon 10/14** • Lesson plan Day 15<sup>16</sup>

**Wed 10/16** • Lesson plan Day 16<sup>17</sup>

**Fri 10/18** • Lesson plan Day 17<sup>18</sup>

## **Week 7 More SOLID**

**Mon 10/21** FALL BREAK

**Wed 10/23** • Lesson plan Day 18<sup>19</sup>

**Fri 10/25** • Lesson plan Day 19<sup>20</sup>

## **Week 8 Writing Clean Tests**

**Mon 10/28** • Lesson plan Day 20<sup>21</sup>

**Wed 10/30** • Lesson plan Day 21<sup>22</sup>

**Fri 11/01** • Lesson plan Day 22<sup>23</sup>

## **Week 9 Design Patterns**

**Mon 11/04** • Lesson plan Day 23<sup>24</sup>

**Wed 11/06** • Lesson plan Day 24<sup>25</sup>

**Fri 11/08** Midterm 2

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<sup>13</sup>[lessonPlansFall/lessonPlanDay13.html](#)

<sup>14</sup>[lessonPlansFall/lessonPlanDay14.html](#)

<sup>15</sup>[notes/midterm1StudyGuide.html](#)

<sup>16</sup>[lessonPlansFall/lessonPlanDay15.html](#)

<sup>17</sup>[lessonPlansFall/lessonPlanDay16.html](#)

<sup>18</sup>[lessonPlansFall/lessonPlanDay17.html](#)

<sup>19</sup>[lessonPlansFall/lessonPlanDay18.html](#)

<sup>20</sup>[lessonPlansFall/lessonPlanDay19.html](#)

<sup>21</sup>[lessonPlansFall/lessonPlanDay20.html](#)

<sup>22</sup>[lessonPlansFall/lessonPlanDay21.html](#)

<sup>23</sup>[lessonPlansFall/lessonPlanDay22.html](#)

<sup>24</sup>[lessonPlansFall/lessonPlanDay23.html](#)

<sup>25</sup>[lessonPlansFall/lessonPlanDay24.html](#)

## Week 10 More Design Patterns

**Mon 11/11** • Lesson plan Day 25<sup>26</sup>

**Wed 11/13** • Lesson plan Day 26<sup>27</sup>

**Fri 11/15** • Lesson plan Day 27<sup>28</sup>

## Week 11 Even More Design Patterns

**Mon 11/18** • Lesson plan Day 28<sup>29</sup>

**Wed 11/20** • Lesson plan Day 29<sup>30</sup>

**Fri 11/22** • Lesson plan Day 30<sup>31</sup>

## Week 12 Project Work

**Mon 11/25** • Lesson plan Day 31<sup>32</sup>

**Wed 11/27** THANKSGIVING BREAK

**Fri 11/29** THANKSGIVING BREAK

## Week 13 Project Work

**Mon 12/02** • Lesson plan Day 32<sup>33</sup>

**Wed 12/04** • Lesson plan Day 33<sup>34</sup>

**Fri 12/06** • Lesson plan Day 34<sup>35</sup>

## Week 1

**Tue** • Goals:

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

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<sup>26</sup>[lessonPlansFall/lessonPlanDay25.html](#)

<sup>27</sup>[lessonPlansFall/lessonPlanDay26.html](#)

<sup>28</sup>[lessonPlansFall/lessonPlanDay27.html](#)

<sup>29</sup>[lessonPlansFall/lessonPlanDay28.html](#)

<sup>30</sup>[lessonPlansFall/lessonPlanDay29.html](#)

<sup>31</sup>[lessonPlansFall/lessonPlanDay30.html](#)

<sup>32</sup>[lessonPlansFall/lessonPlanDay31.html](#)

<sup>33</sup>[lessonPlansFall/lessonPlanDay32.html](#)

<sup>34</sup>[lessonPlansFall/lessonPlanDay33.html](#)

<sup>35</sup>[lessonPlansFall/lessonPlanDay34.html](#)

- Prep:
  - Read *Clean Code*<sup>36</sup>, chapters 1-3
  - Watch Names++<sup>37</sup>
- Topics:
  - (Coding) naming variables and methods
  - (Coding) extracting code into small functions
- Activities for Day 2<sup>38</sup>
- Lunchtime Video: Refactoring screencast “2”: Prime generator<sup>39</sup>

## Wed

- Goals:
  - Comment and Code formatting principles
  - Function structure principles
- Prep:
  - Read *Clean Code*<sup>40</sup>, chapters 4, 5
  - Watch Function Structure video selected parts<sup>41</sup>
- Topics:
  - (Coding) function parameters, command-query separation
  - (Coding) comments and formatting
- Activities for Day 3<sup>42</sup>
- Lunchtime Video: Form<sup>43</sup>

## 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*<sup>44</sup>, chapter 6
- Topics:
  - (Java/OOP) Inheritance vs Composition
  - (Coding) Law of Demeter (Tell, don’t ask)
- Activities for Day 4<sup>45</sup>

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

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

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

<sup>39</sup>[videos/04-prime\\_gen\\_screencast.html](https://learning.oreilly.com/library/view/clean-code/9780136083238/videos/04-prime_gen_screencast.html)

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

<sup>41</sup>[videos/05-function\\_structure.html](https://learning.oreilly.com/library/view/clean-code/9780136083238/videos/05-function_structure.html)

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

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

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

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

- Lunchtime Video: TDD Part 1<sup>46</sup>

**Fri** • Goals:

- Code tracking with Version Control
- Automated Testing and Test-driven development
- Prep:
  - Read *Clean Code*<sup>47</sup>, chapter 9
- Topics:
  - (Practices) Version Control Basics
  - (Practices) Test-Driven Development
- Activities for Day 5<sup>48</sup>
- Lunchtime Video: TDD Part 2<sup>49</sup>

**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 6<sup>50</sup>
- 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

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<sup>46</sup>[videos/07-tdd\\_part1.html](#)

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

<sup>48</sup>[lessonPlans/lessonPlanDay05.html](#)

<sup>49</sup>[videos/08-tdd\\_part2.html](#)

<sup>50</sup>[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 7<sup>51</sup>
- 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 8<sup>52</sup>
  - (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 9<sup>53</sup>

- Fri**
- Goals:
    - Mocking
  - Activities for Day 10<sup>54</sup>
  - (Project) Iteration 0 with clients

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<sup>51</sup>[lessonPlans/lessonPlanDay07.html](#)

<sup>52</sup>[lessonPlans/lessonPlanDay08.html](#)

<sup>53</sup>[lessonPlans/lessonPlanDay09.html](#)

<sup>54</sup>[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 11<sup>55</sup>
  - (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 13<sup>56</sup>
  - 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 14<sup>57</sup>
  - 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 15<sup>58</sup>
  - Work on Project

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<sup>55</sup>[lessonPlans/lessonPlanDay11.html](#)

<sup>56</sup>[lessonPlans/lessonPlanDay13.html](#)

<sup>57</sup>[lessonPlans/lessonPlanDay14.html](#)

<sup>58</sup>[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 16<sup>59</sup>
  - Work on Project
- Tue**
- (Patterns) Composite
    - Reading: ASD chapter 23
  - (Patterns) Visitor
    - Reading: ASD chapter 28
  - Activities for Day 17<sup>60</sup>
  - 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

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<sup>59</sup>[lessonPlans/lessonPlanDay16.html](https://lessonPlans/lessonPlanDay16.html)

<sup>60</sup>[lessonPlans/lessonPlanDay17.html](https://lessonPlans/lessonPlanDay17.html)