UDACITY
FOR ENTERPRISE

SCHOOL OF BUSINESS

Agile Software Development

Overview

This goal of this Nanodegree Program is to teach how to build products that deliver continuous value to customers using an Agile approach to software development.

A graduate of this program will be able to:

- Master characteristics of three of the more popular Agile Frameworks: Scrum, Kanban and XP

- Apply the Agile Manifesto to deliver practical value in Agile teams and organizations.

- Apply Agile Planning and Prioritization within a team or organization.

- Apply the Scrum framework to plan a release and a sprint.

- Identify and mitigate risk while building an internal team communication and external communication strategy.

- Create a BVIR to communicate project status to the relevant team/stakeholders effectively

This program is comprised of 3 courses and 3 projects. Each project you build will be an opportunity to demonstrate what you've learned in the lessons. Your completed projects will become part of a career portfolio that will demonstrate your acquired skills in Agile Software Development.

Program Information

ESTIMATED TIME TO COMPLETE
3 months; study 10 hrs/week

LEVEL
Foundational

PREREQUISITES
Basic computer skills, such as managing files, using third-party online programs, and navigating the internet through an online browser
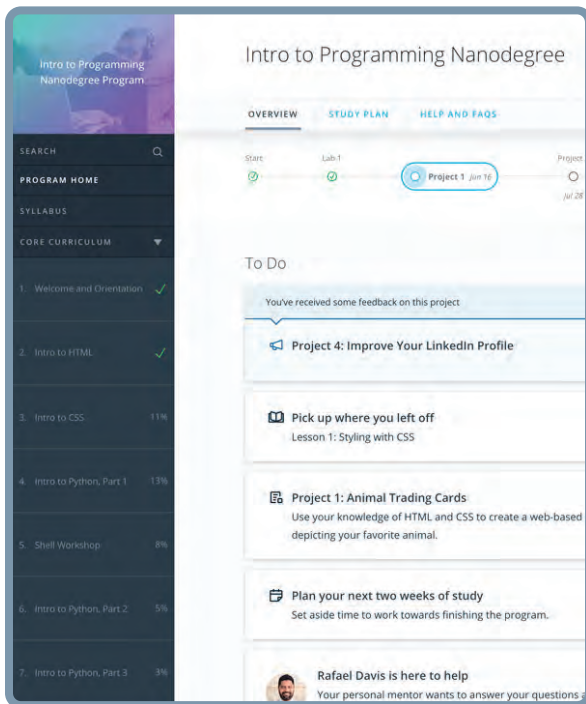
HARDWARE/SOFTWARE REQUIRED
None

LEARN MORE ABOUT THIS NANODEGREE
Contact us at enterpriseNDs@ udacity.com.

Our Classroom Experience

REAL-WORLD PROJECTS
Learners build new skills through industry-relevant projects and receive personalized feedback from our network of 900+ project reviewers. Our simple user interface makes it easy to submit projects as often as needed and receive unlimited feedback.

KNOWLEDGE
Answers to most questions can be found with Knowledge, our proprietary wiki. Learners can search questions asked by others and discover in real-time how to solve challenges.

LEARNER HUB
Learners leverage the power of community through a simple, yet powerful chat interface built within the classroom. Learner Hub connects learners with their technical mentor and fellow learners.

WORKSPACES
Learners can check the output and quality of their code by testing it on interactive workspaces that are integrated into the classroom.

QUIZZES
Understanding concepts learned during lessons is made simple with auto-graded quizzes. Learners can easily go back and brush up on concepts at anytime during the course.
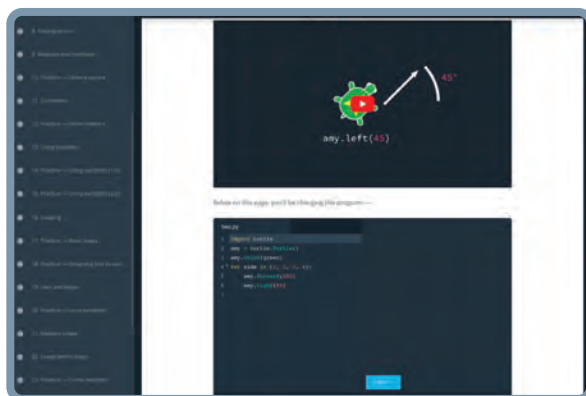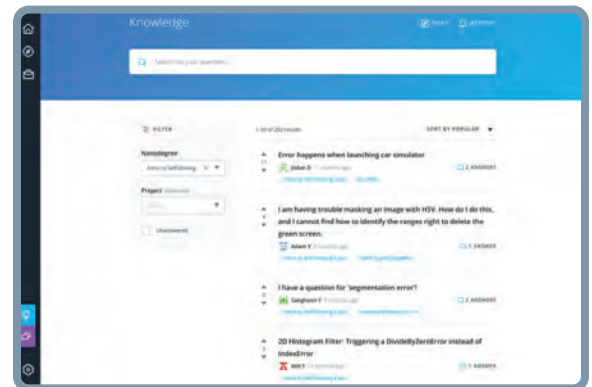
CUSTOM STUDY PLANS
Mentors create a custom study plan tailored to learners' needs. This plan keeps track of progress toward learner goals.

PROGRESS TRACKER
Personalized milestone reminders help learners stay on track and focused as they work to complete their Nanodegree program.

Learn with the Best

Hasnain Rizvi
INSTRUCTOR

Dr. Hasnain Rizvi is an Agile Transformation thought leader and has trained over 25,000 professionals globally. He is a trainer and adjunct professor for Global 2000 clients, universities, and organizations including The University of British Columbia, Southern Alberta Institute of Technology, and Steinbeis School of International Business and Entrepreneurship

Mark Ginise
INSTRUCTOR

Mark Ginise leads Agility training for the federal government. He has taught Agility to DoD programs, and worked as an internal change agent for Federal Government agencies. His specialties include Agile transformations, DevSecOps, cloud migrations, and technology education. He enjoys the beach, his children, and traveling.

Vincent High
INSTRUCTOR

Vincent is a Scrum Master, Agile Instructor, and currently serves as an Agile Delivery Lead at a top US bank. Throughout his career he has served as a Scrum Master and Agile Coach within startups, large corporations, and non-profi t organizations. In his spare time he enjoys watching old movies with family.

Course 1: Foundations of Agile and Agile Frameworks

In this course, students will be introduced to The Agile Mindset and how it sets the tone for "Being" Agile versus just "Doing" Agile. Students will learn to leverage The Agile Manifesto as the foundation for all Agile Frameworks, as well as identify the practical differences between Agile and Waterfall approaches. Students will then take a deep dive into Agile Teams and Governance and apply best practices of both in order to deliver immense business value. By the end of this course, students will master characteristics of three of the more popular Agile Frameworks being utilized across all industries, which are Scrum, Kanban and XP, as well as apply The Agile Manifesto to deliver practical value in Agile teams and organizations. being utilized across all industries, which are Scrum, Kanban and XP, as well as apply The Agile Manifesto to deliver practical value in Agile teams and organizations.

Project 1	WorldVisitz Mobile App Agile Delivery Launch

In this project, students will step in as an Agile consultant to help launch WorldVisitz's Agile journey. Students will recommend and define an Agile delivery solution for WorldVisitz executives to replace their current inefficient traditional product development processes. Based on an assessment of the organization, students will prepare a presentation to convince WorldVisitz leaders of the business value and rationale for adopting an Agile framework. Students will also prepare an Agile onboarding presentation to get the team started on their Agile journey.

LESSON TITLE	LEARNING OUTCOME
WHY AGILE?	• Explain the Agile Mindset and how it sets the tone for Being' Agile versus just 'Doing' Agile • Identify how the Agile Manifesto sets the foundation for all Agile Frameworks • Compare Agile versus the more traditional Waterfall approach to product development • Evaluate common misconceptions about Agile
BUILD AND EVOLVE AGILE TEAMS	• Recognize the characteristics of a high performing Agile Team • Sustain and enable high performing teams • Identify an Agile team's core roles, optimal size, structure, and cross-functional skills • Apply best practices of Agile Governance

LESSON TITLE	LEARNING OUTCOME
AGILE FRAMEWORKS	• Compare and contrast Scrum, Kanban, and XP • Evaluate the unique characteristics of the Scrum framework and appropriate uses • Evaluate the advantages of the Kanban Framework and its appropriate uses • Evaluate the advantages of the XP Framework and its appropriate uses

Course 2: Delivering Value with Agile Planning and Prioritization

The Agile approach to planning is an iterative process that focuses on delivering value to the customer. In this course, students will be introduced to the high level aspects of agile planning, including product vision and roadmaps. Students will also learn how to manage requirements at the tactical level, including gathering, writing, and prioritizing requirements using agile techniques from each of the major frameworks. Finally, students will learn different approaches to estimating work and how to build release and iteration plans that help the team continuously deliver value. At the end of the course, students will be equipped with the tools and techniques they need to apply Agile Planning and Prioritization within a team or organization to deliver value more efficiently.

Project 2 — Create an MVP Release Plan

In this project, students will create a plan to develop a software product for the Centers for Disease Control that will help prevent the spread of a deadly virus. Students will be given a specific set of criteria to create a plan for the customer. The plan will include a vision, roadmap, user stories, and a release plan that outlines the minimum set of features that are needed to make the product successful and align with business requirements for an MVP.

Nanodegree Program Overview

LESSON TITLE	LEARNING OUTCOME
AGILE PLANNING	• Describe the benefits of agile planning • Explain the MVP concept and understand how it's used in software development • Construct a product roadmap • Create user stories that describe product requirements • Understand the difference between features, epics, and user stories • Identify acceptance criteria for user stories
PRIORITIZATION	• Define the product backlog and explain why it exists • Explain how each team role uses and interacts with the backlog • Manage a backlog and organize it using progressive elaboration • Identify and apply different prioritization techniques • Prioritize a product backlog
SCOPING	• Understand how to control the scope of user stories • Refine the Definition of Done for user stories • Estimate user stories • Explain and apply various estimation techniques • Apply ideal time to estimates
RELEASE AND ITERATION PLANNING	• Explain the relationship between release and iteration planning • Identify the outcomes of release and iteration planning • Plan an MVP that delivers value incrementally by using techniques such as continuous integration and continuous delivery • Explain and apply timeboxes • Apply the Scrum framework to plan a release and a sprint

Course 3: Progress, Communication, and Organizational Agility

In this course, students will learn how to communicate project progress and status through information radiators, guide and direct organizational agility through the use of metrics and how to create those metrics, and differentiate between patterns to mimic and anti-patterns to avoid. Students will also learn how to identify and mitigate risk, and build an internal team communication strategy and an external communication strategy that work effectively for the relevant stakeholder audience.

Project 3	Report Agile Project Status with a Big Visual Information Radiator

In this project, students will learn how to plan, organize, monitor, and display project information at a glance. Students will create a Big Visual Information Radiator (BVIR) that can be used by anyone involved in an Agile project to review project goals, work completion status, metrics, risks and target completion date. Students will learn how to use techniques such as appropriate use of burn-up and burn-down charts, prioritization of user stories, identifying risks, and calculating velocity. Students will also learn how to effectively communicate project status and appropriate key metrics to a senior management audience within a corporation.

LESSON TITLE	LEARNING OUTCOME
AGILE METRICS	• Explain the importance of using metrics in Agile • Differentiate between outputs and outcomes • Calculate a Velocity • Determine the Lead Time and Cycle Time • Monitor the status of Work in Progress (WIP) • Estimate when work should be completed • Identify escaped defects and how to handle them appropriately

LESSON TITLE	LEARNING OUTCOME
MEASURING PROGRESS AND IMPACT	• Identify the different parts of the continuous improvement process that lead to a sustainable development level • Differentiate between patterns and antipatterns of the continuous improvement process • Effectively apply Agile thinking to reach sustainabledevelopment • Run a retrospective to effectively identify what went well, what didn't go well, and what can be improved • Effectively prioritize the next steps to improve on the lessons learned and add it to the backlog • Use the appropriate chart type to build an IR to communicate a specific metric • Create a BVIR to effectively communicate project status
IDENTIFYING RISKS	• Determine the impact risk would have on a project • Effectively communicate how technical debt impacts a project • Apply Agile techniques to mitigate technical debt effectively • Identify failure patterns and implement mitigation strategies • Use testing techniques early to keep an Agile project on schedule
AGILE COMMUNICATION	• Differentiate between metrics that should be shared internally vs. externally • Create a BVIR to communicate project status to the relevant team/ stakeholders effectively • Correctly determine the status of the current in-progress project • Effectively implement tools to communicate across remote teams • Build a communication strategy for an internal team and for external parties • Build trust using Agile techniques between team members to encourage transparency in communication

Our Nanodegree Programs Include:

Pre-Assessments

Our in-depth workforce assessments identify your team's current level of knowledge in key areas. Results are used to generate custom learning paths designed to equip your workforce with the most applicable skill sets.

Dashboard & Progress Reports

Our interactive dashboard (enterprise management console) allows administrators to manage employee onboarding, track course progress, perform bulk enrollments and more.

Industry Validation & Reviews

Learners' progress and subject knowledge is tested and validated by industry experts and leaders from our advisory board. These in-depth reviews ensure your teams have achieved competency.

Real World Hands-on Projects

Through a series of rigorous, real-world projects, your employees learn and apply new techniques, analyze results, and produce actionable insights. Project portfolios demonstrate learners' growing proficiency and subject mastery.

Real-life Reviewers for Real-life Projects

Real-world projects are at the core of our Nanodegree programs because hands-on learning is the best way to master a new skill. Receiving relevant feedback from an industry expert is a critical part of that learning process, and infinitely more useful than that from peers or automated grading systems. Udacity has a network of over 900 experienced project reviewers who provide personalized and timely feedback to help all learners succeed.

Vaibhav
UDACITY LEARNER

"I never felt overwhelmed while pursuing the Nanodegree program due to the valuable support of the reviewers, and now I am more confident in converting my ideas to reality."

now at
CODING VISIONS INFOTECH

All Learners Benefit From:

Line-by-line feedback for coding projects	Industry tips and best practices	Advice on additional resources to research	Unlimited submissions and feedback loops

How it Works

Real-world projects are integrated within the classroom experience, making for a seamless review process flow.

- Go through the lessons and work on the projects that follow
- Get help from your technical mentor, if needed
- Submit your project work
- Receive personalized feedback from the reviewer
- If the submission is not satisfactory, resubmit your project
- Continue submitting and receiving feedback from the reviewer until you successfully complete your project

About our Project Reviewers

Our expert project reviewers are evaluated against the highest standards and graded based on learners' progress. Here's how they measure up to ensure your success.

900+	1.8M	3	4.85 /5
Expert Project Reviewers	**Projects Reviewed**	**Hours Average Turnaround**	**Average Reviewer Rating**
Are hand-picked to provide detailed feedback on your project submissions.	Our reviewers have extensive experience in guiding learners through their course projects.	You can resubmit your project on the same day for additional feedback.	Our learners love the quality of the feedback they receive from our experienced reviewers.

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