


Course Syllabus

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 **Edit**

This won't be covered in class but is useful information about how a software engineering company operates: [Glitch Company Handbook](https://handbook.glitch.me/)  (<https://handbook.glitch.me/>).

Version control and Github

Software architecture and patterns

Client/server vs. N-tier

MVC and variants of MVC

Integrated development environments (IDEs) vs. code editors

Eclipse IDE

Coding style and automated style checkers

acceptance testing vs. beta testing

Software reuse and software assets

Copy/paste, code clones and refactoring

Application Programming Interfaces (APIs)

Frameworks

Libraries vs. services

REST APIs

Representational State Transfer and Web technology

What is a bug?

Automated bug finders

Program analysis overview

Testing overview

Blackbox vs. whitebox vs. greybox testing

Course Chat



Software engineering != Programming

Software liability, (no) licensing for software engineers

Agile vs. Waterfall software development lifecycle

Agile iterations (sprints), time box vs. scope box

Pair programming

Software requirements

User stories

Task boards

Use cases

Wireframes and storyboards

Software design, CRC cards

SOLID design principles

Code smells, technical debt, code clones

Cyclomatic complexity

Refactoring

static analysis bug finders

security anti-patterns

code review

valid and invalid inputs

broading concepts of inputs and outputs

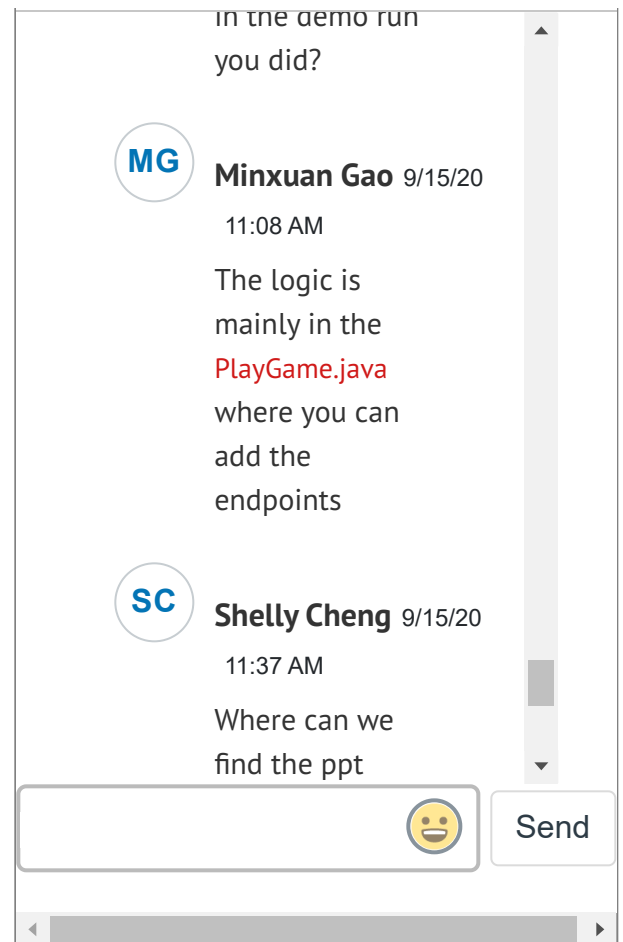
equivalence partitions and boundary analysis

relationships among inputs

unit testing

test assertions, test fixtures

test doubles



integration and system testing

coverage, missing else

software dependencies, both internal and external

build tools and package managers

continuous integration

test impact analysis

flaky tests

test oracles

debugging

Agile planning, project velocity

Software dependencies, both internal and external (libraries, frameworks, middleware, APIs)

Build and Continuous Integration

Test oracles

Coverage

Debugging

Test planning

Integration testing and system testing

Fuzzing and other test generation techniques

Test dependencies and ordering, test suite prioritization and minimization

Bug reports, issue trackers, patches

Software release and devops

Code complexity, software metrics












Design patterns











Writing secure code












Interoperating with and inheriting legacy code












Course Summary:












Date	Details	Due
Tue Sep 8, 2020	 4156 introduction, version control (https://courseworks2.columbia.edu/calendar?event_id=247528&include_contexts=course_104335)	10:10am to 11:25am
Wed Sep 9, 2020	 TA Office Hours (Shirish) (https://courseworks2.columbia.edu/calendar?event_id=250146&include_contexts=course_104335)	12pm to 1pm
Thu Sep 10, 2020	 4156 software architecture, MVC (https://courseworks2.columbia.edu/calendar?event_id=248232&include_contexts=course_104335)	10:10am to 11:25am
Fri Sep 11, 2020	 TA Office Hours (Shirish) (https://courseworks2.columbia.edu/calendar?event_id=250177&include_contexts=course_104335)	12pm to 1pm
Mon Sep 14, 2020	 TA Office Hours (Rohit) (https://courseworks2.columbia.edu/calendar?event_id=255615&include_contexts=course_104335)	10:30am to 11:30am
Tue Sep 15, 2020	 4156 IDEs and Eclipse (https://courseworks2.columbia.edu/calendar?event_id=248201&include_contexts=course_104335)	10:10am to 11:25am
Wed Sep 16, 2020	 TA Office Hours (Rohit) (https://courseworks2.columbia.edu/calendar?event_id=255643&include_contexts=course_104335)	10:30am to 11:30am
	 TA Office Hours (Shirish) (https://courseworks2.columbia.edu/calendar?event_id=250147&include_contexts=course_104335)	12pm to 1pm
Thu Sep 17, 2020	 4156 coding style (https://courseworks2.columbia.edu/calendar?event_id=248233&include_contexts=course_104335)	10:10am to 11:25am
Fri Sep 18, 2020	 TA Office Hours (Minxuan) (https://courseworks2.columbia.edu/calendar?)	10:30am to 11:30am












Date	Details	Due
Mon Sep 21, 2020	event_id=257963&include_contexts=course_104335	
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250178&include_contexts=course_104335	12pm to 1pm
	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255616&include_contexts=course_104335	10:30am to 11:30am
Tue Sep 22, 2020	 TA Office Hours (Minxuan) https://courseworks2.columbia.edu/calendar?event_id=257965&include_contexts=course_104335	3pm to 4pm
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258256&include_contexts=course_104335	7:30am to 8:30am
	 Assignment I0: Git and Github https://courseworks2.columbia.edu/courses/104335/assignments/472886	due by 9:59am
Wed Sep 23, 2020	 4156 APIs and REST https://courseworks2.columbia.edu/calendar?event_id=248202&include_contexts=course_104335	10:10am to 11:25am
	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255644&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250148&include_contexts=course_104335	12pm to 1pm
Thu Sep 24, 2020	 4156 testing overview https://courseworks2.columbia.edu/calendar?event_id=248234&include_contexts=course_104335	10:10am to 11:25am
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258242&include_contexts=course_104335	1pm to 2pm
	 Assignment I1: Eclipse, MVC, Checkstyle and REST	due by 11:59pm












Date	Details	Due
	https://courseworks2.columbia.edu/courses/104335/assignments/482592	
Fri Sep 25, 2020	 TA Office Hours (Minxuan) https://courseworks2.columbia.edu/calendar?event_id=257964&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250179&include_contexts=course_104335	12pm to 1pm
	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255617&include_contexts=course_104335	10:30am to 11:30am
Mon Sep 28, 2020	 TA Office Hours (Minxuan) https://courseworks2.columbia.edu/calendar?event_id=257966&include_contexts=course_104335	3pm to 4pm
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258257&include_contexts=course_104335	7:30am to 8:30am
Tue Sep 29, 2020	 4156 software process https://courseworks2.columbia.edu/calendar?event_id=248203&include_contexts=course_104335	10:10am to 11:25am
	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255645&include_contexts=course_104335	10:30am to 11:30am
Wed Sep 30, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250149&include_contexts=course_104335	12pm to 1pm
	 4156 Ilica Mahajan guest lecture on testing https://courseworks2.columbia.edu/calendar?event_id=248235&include_contexts=course_104335	10:10am to 11:25am
Thu Oct 1, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258243&include_contexts=course_104335	1pm to 2pm












Date	Details	Due
	 Assignment I2: JUnit and SpotBugs https://courseworks2.columbia.edu/courses/104335/assignments/482608	due by 11:59pm
Fri Oct 2, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250180&include_contexts=course_104335	12pm to 1pm
Mon Oct 5, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255618&include_contexts=course_104335	10:30am to 11:30am
Tue Oct 6, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258258&include_contexts=course_104335	7:30am to 8:30am
	 4156 user stories https://courseworks2.columbia.edu/calendar?event_id=248204&include_contexts=course_104335	10:10am to 11:25am
Wed Oct 7, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255646&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250150&include_contexts=course_104335	12pm to 1pm
	 4156 use cases https://courseworks2.columbia.edu/calendar?event_id=248236&include_contexts=course_104335	10:10am to 11:25am
Thu Oct 8, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258244&include_contexts=course_104335	1pm to 2pm
	 Assignment I3: Saving Program State https://courseworks2.columbia.edu/courses/104335/assignments/482611	due by 11:59pm
Fri Oct 9, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250181&include_contexts=course_104335	12pm to 1pm












Date	Details	Due
Mon Oct 12, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255619&include_contexts=course_104335	10:30am to 11:30am
Tue Oct 13, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258259&include_contexts=course_104335	7:30am to 8:30am
	 4156 CRC software design https://courseworks2.columbia.edu/calendar?event_id=248205&include_contexts=course_104335	10:10am to 11:25am
Wed Oct 14, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255647&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250151&include_contexts=course_104335	12pm to 1pm
	 4156 design principles https://courseworks2.columbia.edu/calendar?event_id=248237&include_contexts=course_104335	10:10am to 11:25am
Thu Oct 15, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258245&include_contexts=course_104335	1pm to 2pm
	 Assignment T0: Team Formation https://courseworks2.columbia.edu/courses/104335/assignments/486855	due by 11:59pm
Fri Oct 16, 2020	 first assessment period https://courseworks2.columbia.edu/calendar?event_id=248257&include_contexts=course_104335	12am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250182&include_contexts=course_104335	12pm to 1pm
Sat Oct 17, 2020	 first assessment period https://courseworks2.columbia.edu/calendar?event_id=248258&include_contexts=course_104335	12am











Date	Details	Due
Sun Oct 18, 2020	 first assessment period (https://courseworks2.columbia.edu/calendar?event_id=248259&include_contexts=course_104335) 	12am
	 first assessment period (https://courseworks2.columbia.edu/calendar?event_id=248260&include_contexts=course_104335) 	12am
Mon Oct 19, 2020	 TA Office Hours (Rohit) (https://courseworks2.columbia.edu/calendar?event_id=255620&include_contexts=course_104335) 	10:30am to 11:30am
	 First Individual Assessment (https://courseworks2.columbia.edu/courses/104335/assignments/496168) 	due by 11:59pm
Tue Oct 20, 2020	 TA Office Hours (Asif) (https://courseworks2.columbia.edu/calendar?event_id=258260&include_contexts=course_104335) 	7:30am to 8:30am
	 4156 code smells (https://courseworks2.columbia.edu/calendar?event_id=248206&include_contexts=course_104335) 	10:10am to 11:25am
Wed Oct 21, 2020	 TA Office Hours (Rohit) (https://courseworks2.columbia.edu/calendar?event_id=255648&include_contexts=course_104335) 	10:30am to 11:30am
	 TA Office Hours (Shirish) (https://courseworks2.columbia.edu/calendar?event_id=250152&include_contexts=course_104335) 	12pm to 1pm
	 First Individual Assessment (https://courseworks2.columbia.edu/courses/104335/assignments/496168) (2 students)	due by 11:59pm
Thu Oct 22, 2020	 4156 security anti-patterns (https://courseworks2.columbia.edu/calendar?event_id=248238&include_contexts=course_104335) 	10:10am to 11:25am
	 TA Office Hours (Asif) (https://courseworks2.columbia.edu/calendar?event_id=258246&include_contexts=course_104335) 	1pm to 2pm












Date	Details	Due
Fri Oct 23, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250183&include_contexts=course_104335	12pm to 1pm
Mon Oct 26, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255621&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258261&include_contexts=course_104335	7:30am to 8:30am
Tue Oct 27, 2020	 4156 choosing blackbox test inputs https://courseworks2.columbia.edu/calendar?event_id=248207&include_contexts=course_104335	10:10am to 11:25am
	 Assignment T1: Preliminary Project Proposal https://courseworks2.columbia.edu/courses/104335/assignments/486922	due by 11:59pm
Wed Oct 28, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255649&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250153&include_contexts=course_104335	12pm to 1pm
Thu Oct 29, 2020	 4156 unit testing https://courseworks2.columbia.edu/calendar?event_id=248239&include_contexts=course_104335	10:10am to 11:25am
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258247&include_contexts=course_104335	1pm to 2pm
Fri Oct 30, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250184&include_contexts=course_104335	12pm to 1pm
Mon Nov 2, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255649&include_contexts=course_104335	10:30am to 11:30am












Date	Details	Due
	event_id=255622&include_contexts=course_104335)	
Tue Nov 3, 2020	 4156 US Election Day no class https://courseworks2.columbia.edu/calendar?event_id=272848&include_contexts=course_104335	12am
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258262&include_contexts=course_104335	7:30am to 8:30am
Wed Nov 4, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255650&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250154&include_contexts=course_104335	12pm to 1pm
	 4156 mocks and stubs https://courseworks2.columbia.edu/calendar?event_id=248240&include_contexts=course_104335	10:10am to 11:25am
Thu Nov 5, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258248&include_contexts=course_104335	1pm to 2pm
	 Assignment T2: Revised Project Proposal https://courseworks2.columbia.edu/courses/104335/assignments/486956	due by 11:59pm
Fri Nov 6, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250185&include_contexts=course_104335	12pm to 1pm
Mon Nov 9, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255623&include_contexts=course_104335	10:30am to 11:30am
Tue Nov 10, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258263&include_contexts=course_104335	7:30am to 8:30am
	 4156 integration & system testing	10:10am to 11:25am












Date	Details	Due
	https://courseworks2.columbia.edu/calendar?event_id=248209&include_contexts=course_104335	
Wed Nov 11, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255651&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250155&include_contexts=course_104335	12pm to 1pm
Thu Nov 12, 2020	 4156 coverage https://courseworks2.columbia.edu/calendar?event_id=248241&include_contexts=course_104335	10:10am to 11:25am
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258249&include_contexts=course_104335	1pm to 2pm
Fri Nov 13, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250186&include_contexts=course_104335	12pm to 1pm
Mon Nov 16, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255624&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258264&include_contexts=course_104335	7:30am to 8:30am
Tue Nov 17, 2020	 4156 continuous integration https://courseworks2.columbia.edu/calendar?event_id=248210&include_contexts=course_104335	10:10am to 11:25am
	 Assignment T3: First Iteration https://courseworks2.columbia.edu/courses/104335/assignments/490808	due by 11:59pm
Wed Nov 18, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255652&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=255652&include_contexts=course_104335	12pm to 1pm












Date	Details	Due
	event_id=250156&include_contexts=course_104335)	
Thu Nov 19, 2020	 4156 test oracles https://courseworks2.columbia.edu/calendar?event_id=248242&include_contexts=course_104335	10:10am to 11:25am
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258250&include_contexts=course_104335	1pm to 2pm
Fri Nov 20, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250187&include_contexts=course_104335	12pm to 1pm
Mon Nov 23, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255625&include_contexts=course_104335	10:30am to 11:30am
	 Assignment T4: Initial Demo https://courseworks2.columbia.edu/courses/104335/assignments/491014	due by 11:59pm
Tue Nov 24, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258265&include_contexts=course_104335	7:30am to 8:30am
	 4156 debugging https://courseworks2.columbia.edu/calendar?event_id=248211&include_contexts=course_104335	10:10am to 11:25am
Wed Nov 25, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255653&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250157&include_contexts=course_104335	12pm to 1pm
Thu Nov 26, 2020	 4156 US Thanksgiving no class https://courseworks2.columbia.edu/calendar?event_id=248243&include_contexts=course_104335	12am
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?	1pm to 2pm












Date	Details	Due
	event_id=258251&include_contexts=course_104335)	
Fri Nov 27, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250188&include_contexts=course_104335	12pm to 1pm
Mon Nov 30, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255626&include_contexts=course_104335	10:30am to 11:30am
Tue Dec 1, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258266&include_contexts=course_104335	7:30am to 8:30am
	 4156 more testing and debugging https://courseworks2.columbia.edu/calendar?event_id=248212&include_contexts=course_104335	10:10am to 11:25am
Wed Dec 2, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255654&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250158&include_contexts=course_104335	12pm to 1pm
Thu Dec 3, 2020	 4156 refactoring and design patterns https://courseworks2.columbia.edu/calendar?event_id=248244&include_contexts=course_104335	10:10am to 11:25am
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258252&include_contexts=course_104335	1pm to 2pm
Fri Dec 4, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250189&include_contexts=course_104335	12pm to 1pm
Sun Dec 6, 2020	 Assignment T5: Second Iteration https://courseworks2.columbia.edu/courses/104335/assignments/490853	due by 11:59pm





Date	Details	Due
Mon Dec 7, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255627&include_contexts=course_104335	10:30am to 11:30am
Tue Dec 8, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258267&include_contexts=course_104335	7:30am to 8:30am
	 4156 agile planning https://courseworks2.columbia.edu/calendar?event_id=248213&include_contexts=course_104335	10:10am to 11:25am
Wed Dec 9, 2020	 TA Office Hours (Rohit) https://courseworks2.columbia.edu/calendar?event_id=255655&include_contexts=course_104335	10:30am to 11:30am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250159&include_contexts=course_104335	12pm to 1pm
	 4156 course review https://courseworks2.columbia.edu/calendar?event_id=248245&include_contexts=course_104335	10:10am to 11:25am
Thu Dec 10, 2020	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258253&include_contexts=course_104335	1pm to 2pm
	 Assignment T6: Final Demo https://courseworks2.columbia.edu/courses/104335/assignments/491047	due by 11:59pm
Fri Dec 11, 2020	 second assessment period https://courseworks2.columbia.edu/calendar?event_id=248253&include_contexts=course_104335	12am
	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250190&include_contexts=course_104335	12pm to 1pm
Sat Dec 12, 2020	 second assessment period https://courseworks2.columbia.edu/calendar?event_id=248254&include_contexts=course_104335	12am

Date	Details	Due
Sun Dec 13, 2020	 second assessment period (https://courseworks2.columbia.edu/calendar?event_id=248255&include_contexts=course_104335) 	12am
	 second assessment period (https://courseworks2.columbia.edu/calendar?event_id=248256&include_contexts=course_104335) 	12am
Mon Dec 14, 2020	 TA Office Hours (Rohit) (https://courseworks2.columbia.edu/calendar?event_id=255628&include_contexts=course_104335) 	10:30am to 11:30am
	 Class Participation (https://courseworks2.columbia.edu/courses/104335/assignments/496167) 	due by 11:59pm
	 Second Individual Assessment (https://courseworks2.columbia.edu/courses/104335/assignments/496169) 	due by 11:59pm
Tue Dec 15, 2020	 TA Office Hours (Asif) (https://courseworks2.columbia.edu/calendar?event_id=258268&include_contexts=course_104335) 	7:30am to 8:30am
	 4156 (https://courseworks2.columbia.edu/calendar?event_id=248214&include_contexts=course_104335) 	10:10am to 11:25am
	 TA Office Hours (Rohit) (https://courseworks2.columbia.edu/calendar?event_id=255656&include_contexts=course_104335) 	10:30am to 11:30am
Wed Dec 16, 2020	 TA Office Hours (Shirish) (https://courseworks2.columbia.edu/calendar?event_id=250160&include_contexts=course_104335) 	12pm to 1pm
	 Second Individual Assessment (https://courseworks2.columbia.edu/courses/104335/assignments/496169) (2 students)	due by 11:59pm
Thu Dec 17, 2020	 4156 (https://courseworks2.columbia.edu/calendar?event_id=248246&include_contexts=course_104335) 	10:10am to 11:25am

Date	Details	Due
	 TA Office Hours (Asif) https://courseworks2.columbia.edu/calendar?event_id=258254&include_contexts=course_104335	1pm to 2pm
Fri Dec 18, 2020	 TA Office Hours (Shirish) https://courseworks2.columbia.edu/calendar?event_id=250191&include_contexts=course_104335	12pm to 1pm
Sun Dec 20, 2020	 Extra Credit: Optional Demo Video https://courseworks2.columbia.edu/courses/104335/assignments/543277	due by 9:59am
Thu Dec 31, 2020	 Extra Credit: First In-Class Demo https://courseworks2.columbia.edu/courses/104335/assignments/550020	due by 11:59pm
	 Extra Credit: Second In-Class Demos https://courseworks2.columbia.edu/courses/104335/assignments/559458	due by 11:59pm
	 4156 class https://courseworks2.columbia.edu/calendar?event_id=229564&include_contexts=course_104335	
	 4156 class https://courseworks2.columbia.edu/calendar?event_id=229565&include_contexts=course_104335	
	 4156 class https://courseworks2.columbia.edu/calendar?event_id=229566&include_contexts=course_104335	
	 4156 class https://courseworks2.columbia.edu/calendar?event_id=229569&include_contexts=course_104335	
	 4156 class https://courseworks2.columbia.edu/calendar?event_id=229570&include_contexts=course_104335	
	 4156 class https://courseworks2.columbia.edu/calendar?event_id=229571&include_contexts=course_104335	

Date	Details	Due
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229572&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229573&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229574&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229575&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229576&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229577&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229578&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229579&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229580&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229581&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229582&include_contexts=course_104335) 	

Date	Details	Due
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229583&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229584&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229585&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229587&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229588&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229590&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229591&include_contexts=course_104335) 	
	 4156 class (https://courseworks2.columbia.edu/calendar?event_id=229592&include_contexts=course_104335) 	
	 4156 class - LAST CLASS (https://courseworks2.columbia.edu/calendar?event_id=229567&include_contexts=course_104335) 	
	 Adjusted Team Project Score without EC (https://courseworks2.columbia.edu/courses/104335/assignments/573798) 	
	 Adjusted Team Project with EC (https://courseworks2.columbia.edu/courses/104335/assignments/573884) 	

Date	Details	Due
	 <u>Demo Day</u> (https://courseworks2.columbia.edu/calendar?event_id=229568&include_contexts=course_104335) 	
	 <u>Differential Factor</u> (https://courseworks2.columbia.edu/courses/104335/assignments/550604) 	
	 <u>NO CLASS - Thanksgiving</u> (https://courseworks2.columbia.edu/calendar?event_id=229586&include_contexts=course_104335) 	
	 <u>NO CLASS - university holiday</u> (https://courseworks2.columbia.edu/calendar?event_id=229589&include_contexts=course_104335) 	