# Introduction to the Course

Building Modern Web Applications - VSP2019

**Karthik Pattabiraman**
**Kumseok Jung**

**What is this course about?**

1. **What is this course about?**

2. Logistics

3. Policies

4. Grading

5. Other

## What is this course about?

- **Core principles** behind building modern web applications
- Abstractions and design principles
- Application of core web technologies such as HTML, CSS, JavaScript, Node.js to the above

# What is it NOT about?

- Learning of **specific technologies**
  - These **will get outdated** by the time you finish
  - **Fast changing field**, so new technologies continuously appear and disappear.
  - **Can learn any technology** if you understand the principles and concepts behind web development
- **Frameworks or libraries** (e.g., jQuery)
  - These are built on the principles and concepts
  - Too many to cover in a reasonable time

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## Bottom line

- You will understand the principles behind web application development
  - **Not simply copy-paste code** from websites to string together a web application
  - You will **understand why technologies are the way they are**, rather than accept it as a statement of fact, and perhaps change them if needed
  - It **enables you to design novel techniques and technologies** in the web application space
  - If you put in the effort, this course will be really fun! :-)

**Logistics**

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# Instructors: Karthik and Kumseok

Karthik Pattabiraman ([karthikp@ece.ubc.ca](mailto:karthikp@ece.ubc.ca))

- Associate Professor at UBC (joined 2010)
  - PhD from University of Illinois Urbana-Champaign
  - Detour via Microsoft Research in 2009
- Research
  - Web applications' reliability and security
  - Error resilient applications
  - Internet of Things (IoT) security

## Instructors: Karthik and Kumseok

Kumseok Jung ([kumseok@ece.ubc.ca](mailto:kumseok@ece.ubc.ca))

- PhD Student at UBC
  - BSc from University of British Columbia
- Research
  - Internet of Things (IoT)
  - Cloud/Edge Computing
  - Software Engineering
  - Distributed Systems

## TAs: Aarti and Pritam

- Aarti Kashyap (kaarti.sr@gmail.com)
- Pritam Dash (pdash@ece.ubc.ca)
- The TAs will be available during each class to assist during in-class exercises and during the time you will be working on your class project

## Logistics - Lectures

- Lectures delivered by the instructors (Karthik and Kumseok)
- Will consist of a mix of teaching (lecturing) sessions mixed with in-class activities
  - Please bring **your laptops fully charged** with you to class.
  - Contact us if you do not have a laptop.
  - You will **work in teams of 3**
  - **Participation to activities is important**
- Lecture notes will be distributed ahead of time
  - No course textbook required
  - However, you should keep your own notes

## Logistics - Software

- Any OS: Windows, Mac OSX, or Linux
- Your favorite web browser + built-in web dev tools
  - Firefox
  - Chrome
  - Edge
- The text editor of your choice :-)
  - Sublime
  - Atom
  - Notepad++

## Logistics - Interactions

- **Github** for all course-related communications
  - No email unless it's private
  - We will subscribe your VSP email to the group
  - Use it for communication (ask and answer questions) – bonus points for active participation
- **Github** for lecture materials
  - Do not distribute without our permission
- **Github** for disseminating assignments and for submissions of assignment solutions
  - Email will NOT be accepted in lieu of Github
    https://github.com/ubc-vsp19/classroom

## Logistics - Resources

- There's no textbook for the course
  - Lectures will cover all the material
  - Augment with online resources as needed
  - Attendance expected at all lectures
- Assignments will test you on material not necessarily covered in the lectures
  - You're free to use publicly available online resources on the web, as long as you cite them

**Policies**

1. What is this course about?

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3. **Policies**

4. Grading

5. Other

**Policies**

- You are responsible for all material you hand in
    - Review UBC's policies for academic dishonesty
    - **Plagiarism of any kind will NOT be tolerated**
        - Automatically **result in you getting an F**
        - Lack of knowledge of policies is not a valid excuse
    - No collaboration allowed on assignments (except with your partners – more on this later)

**Policies**

- All material in the exam will be from the lectures covered in class
  - Will NOT test you on material NOT in the lecture notes!
  - Missing a lecture means that you may miss out
  - Encouraged to ask questions in class and online
- You are encouraged to work on assignments in class and get help from us then and there
  - Office hours will not typically be held outside class

**Grading**

1. What is this course about?

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4. **Grading**

5. Other

# Grading

- Assignments (60%)
  - 4 assignments counting for 15% each
  - Due in class every 2-3 days (see schedule)
  - Done in teams of 3 (form teams by today)
  - Encouraged to work during class on laptops
  - Use Github to commit code
  - No late assignments (no exceptions)

# Grading

- Final Exam (40%)
  - To be held on the morning of Aug 8th
  - Must be done individually (NO collaboration)
  - Closed notes and Closed book part consisting of multiple choice questions (15%)
  - Open notes and Open book part consisting of 5 programming problems (25%) – please bring your laptop for this

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## Assignments - Git

- Open source distributed version control system
- We will be using Git for version control and GitHub for hosting
- Each group will receive a private GitHub repository

## Assignments - Git

- Assignment submissions will take place through GitHub
- Create an assignment branch (i.e., assignment-1, assignment-2, assignment-3, assignment-4) by the due date (we will give more details on this)
  - No other means to submit an assignment will be accepted!
- No late commits will be accepted (unless with instructor permission).
  - Please push your latest changes to the appropriate branch before 11:59:59 PM on the due date!

## Class Participation

- To truly learn and benefit from this class, we encourage all of you to participate
  - Asking and answering questions in class and on Github
  - Participating in in-class exercises
  - Does NOT mean simply showing up in class
- We may award bonus points for class participation

**Other**

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**Other thoughts**

- Hope you have fun and learn too
- It's your responsibility to keep up in class
- If you're struggling, let us know early so we can help to the extent possible – or it may be too late
- Feel free to give us feedback and suggestions for improvement etc. – these will NOT impact your grade in any way

## TODO for Today

- Find 2 partners to do the assignments with (teams of 3) to get a Github account from Pritam (TA).
  - Let us know by end of the first class the composition of your team. One member should write to Pritam (pdash@ece.ubc.ca), an email that contains the following information for all team members:
    - Your IDs (starts with 9)
    - Your first and last names
    - Your email addresses
    - Your GitHub account usernames
  - We will then assign a GitHub repository for your team, and all 3 members will be added as collaborators. Make sure you can work with it from your laptops
  - If you have difficulty, come talk to us

# TODO for Today - Git Demo

1. Clone repository
2. Commiting changes
3. Pushing/pulling changes from repository
4. Branching

Creating Branches

```
git branch assignment-X
git checkout
assignment-X
git push -u origin
assignment-X
git checkout master
git branch
git branch -r
```

Useful Git Commands

```
git clone
git pull origin master
git push origin master
```

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**TODO for Today**

- Node.js Setup
- MongoDB Setup (on your own)

## Extra Resources on JavaScript

If you want to go beyond the VSP course:

1. "Eloquent JavaScript: A Modern Introduction to Programming" by Marijn Haverbeke
2. "JavaScript: The Good Parts" by Douglas Crockford (where JavaScript quiz is from)
3. "Programming JavaScript Applications: Robust Web Architecture with Node, HTML5, and Moderns JS Libraries" by Eric Elliott
4. "Effective JavaScript: 68 Specific Ways to Harness the Power of JavaScript" David Herman
5. "JavaScript: The Definitive Guide" by David Flanagan
6. "You Don't Know JS" by Kyle Simpson

Not required for this VSP course!