

Introduction to the Course

Building Modern Web Applications - VSP2019

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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 - These **will get outdated** by the time you finish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



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)

- 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)

- 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



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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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

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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



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 Google groups
 - 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. Committing changes
3. Pushing/pulling changes from repository
4. Branching

Useful Git Commands

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

Creating Branches

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



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!