Blockchain and Web3 Development: Course Plan

Prof. Ankit Gangwal

Assistant Professor, IIIT-H, India
email: *gangwal@iiit.ac.in*
Web: *CiaoAnkit.github.io*

● *"Welcome! Before we begin, let's sort a couple of things."*

Table of contents

- Particulars
- Course contents
- Projects and assignments
- Grading, examinations, and policies
- Textbooks and references
- Setting expectations

Particulars

- Credits: 4

- Coverage: State-of-the-art of blockchain technology

- Language: Content delivery, exams, etc. will be in English

- Schedule: Monsoon semester (Monday & Thursday 08:30-10:00)

- Webpage: *https://ciaoankit.github.io/teaching.html*

- TA: {aashish.paliwal, aaryan.s}@research.iiit.ac.in

Course contents

- Concepts of blockchain technology
  - Consensus in DLT
  - Addresses and wallets
  - Bitcoin scripts
  - Ethereum smart contracts
  - EVM execution model
  - Solidity, ABI specification
  - Token standards (ERC-20, ERC-721, ERC-1155)
  - DApps, oracles, decentralized storage
  - Secure smart contracts development
  - Blockchain scaling solutions

PS: Course contents may vary depending on the interest and response from the students

Projects and assignments

- Students are expected to work on multiple learning-oriented projects and assignments
  - Mini project: Programming-oriented **group** project
  - Individual assignments (if any)

- Group information
  - Team information via Office Forms (get your **group's ID**)
    - https://forms.office.com/r/UCV98tzUNY
    - Deadline: **August 15, 2024**
  - Project information via Office Forms
    - https://forms.office.com/r/MfVQL9yNAq
    - Deadline: **September 16, 2024**

Projects and assignments

- Mini project
  - Implement a DApp with Solidity and Web3

  - Submit
    A. Source code
    B. Screenshots of execution
    C. Clear instructions (in *README.txt*) to set up environment (if any) and execute the code

  - Final submission format: *zip*
    - Named as *GroupID_RollNoA_RollNoB_..._RollNoZ.zip*

Projects and assignments

- Mini project
  - Project submission via **Dropbox** file request
    - https://www.dropbox.com/request/43cXefmSHUwvVbdedrEe
    - Deadline: **November 05, 2024**

  - Project presentation/demo
    - Everyone gets ready by **November 05, 2024**
    - Random calls during lecture hours
      - **December 2-5** reserved

Projects and assignments

- Paper review
  - Submit duly-signed **Contribution Form**

  - Physical handover to me

  - Deadline: **November 07, 2024**

Grading, examinations, and policies

- Grading
  - Relative grading
  - Final grade set: {A, A-, B, B-, C, C-, D, F} | No 'P' grade possible

- Examinations & marks distributions
  - Assignments, projects   : 50%
  - Mid-term exam, quizzes   : 20%
  - End-term exam   : 30%

- Policies
  - Do and submit your own original work
  - Cheating, plagiarism, and academic dishonesty will carry consequences

Textbooks and references

- There is no single textbook that can cover entire course material, some good references to start are given below (most of them are available on the Internet)

1. A. Narayanan, J. Bonneau, E. Felten, A. Miller, and S. Goldfeder. "Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction."
2. A. M. Antonopoulos and G. Wood. "Mastering Ethereum: Building Smart Contracts and DApps."
3. H. Huang, J. Wu, and Z. Zheng. "From Blockchain to Web3 and Metaverse."
4. Research papers.

Setting expectations

- Don't expect 24x7 answers
  - Instructors are not on duty 24x7
    - Don't expect response before next business day
    - Queries over weekend should never expect fast responses
      - Be happy with something before Monday

- Try to figure out yourself
  - Students should answer each other; start your assignments early!

- Forums are not for debugging
  - Utilize right venue: Go to TA office hours
  - Send detailed Q's/bug reports
    - Not *"no idea what's wrong"*

Google

How many bits in a byte?

Setting expectations

● Include all the team members and always reply all!

Setting expectations

- Spoon-feeding required?

Setting expectations
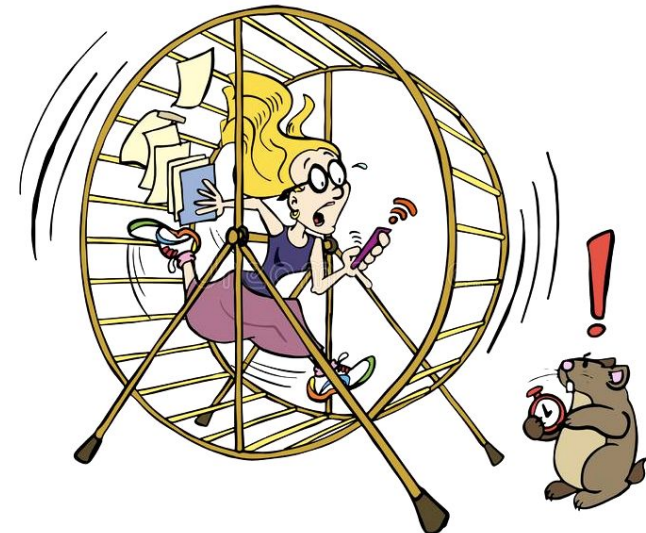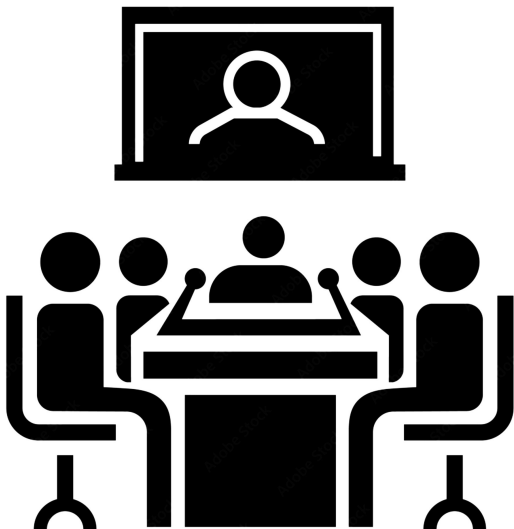
- 08:30 **=** 08:30

Setting expectations

- When you are called for a meeting ...

Other important activities

- Participate in our user studies and events
  - Details will be shared as and when available/applicable

- *"Finally, prioritize things!"*

Most important!

I try to be nice and easy going.

But, I am very serious about what I do.

Good luck.

Thank you!