Seminar: Cloud Computing

Thao Huy Vu, M.S.

Syllabus

- **Day 1**: Introduction, IAM, Billing & Cost, Security: Implement security and manage cost.
- **Day 2**: Networking: VPC, Subnets, IP, EC2: Build a simple network.
- **Day 3**: Load Balancer, ASG, S3, Cloud Front, EBS, EFS: Scalable architecture for NodeJS app using ASG and Load Balancer.
- **Day 4**: SQL (RDS, Aurora), NoSQL(DynamoDB, DocumentDB): NodeJS + RDS/DocumentDB.
- **Day 5**: Serverless: DynamoDB, API Gateway: Develop a simple restful API with Nodejs.
- **Day 6**: Workshop 1 (Server): Deploy full stack app (React + NodeJS + SQL) to AWS.

Seminar: Cloud Computing

A well-architected cloud system naturally expands on scalability, security and efficiency - ensuring fulfillment in digital transformation. Life finds its purpose and fulfillment in the expansion of happiness.

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GOAL

The goal of this course is to equip students with a foundational understanding of Cloud Computing and practical skills in using Amazon Web Services (AWS). By the end of this seminar, students will be able to deploy full-stack applications.

Objectives

- **Deploy full-stack Applications**: Learn to deploy scalable and secure systems on AWS.
- **Understand and Navigate AWS**: Develop a foundational understanding of the AWS ecosystem, including core services like Compute, Storage, and Networking.

References

1. AWS: https://docs.aws.amazon.com
2. ChatGPT: https://chatgpt.com
3. Google AI: https://gemini.google.com
4. Practical Tutorials: https://thaovu.org

Important Notes

Students are required to use regular AWS accounts to gain hands-on experience. Please be aware of the following:

Billing responsibility: Students are solely responsible for the charge incurred in their AWS accounts. Neither MIU nor the instructor are responsible for any costs associated with students' use of their AWS services.

Cost management: It is highly recommended that students leverage the AWS Free Tier, clean up resources after use, and regularly check their billing to manage and minimize costs.

Evaluation Criteria

Attendance	20%
Workshop	30%
HW	50%
Professionalism Reduction	-5% to 0%

Grading scale

P   80-100
NP 0 - 79

Contact Info

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Class Attendance Requirements

1. **Class Hours:**
   a. Morning Session: 10:00 AM – 12:30 PM, Monday – Saturday
   b. Afternoon Session: 1:30 PM – 3:30 PM, Monday – Friday
2. **Attendance Obligation:**
   a. In-person students are required to attend all classes, except under exceptional circumstances.
   b. If you cannot attend a class, you must seek my approval by sending an explanatory email.
3. **Missed Classes:**
   a. Missing three classes without prior approval may warrant consideration of withdrawing from the course.
4. **Homework Submission:**
   a. Failure to submit your first homework solution three times before the deadline (10:00 PM) will result in the loss of all related homework grades.
5. **Punctuality:**
   a. Please arrive on time to prevent any disruptions for fellow students.
6. **Importance of Attendance:**
   a. Attendance is mandatory, as all class components (lectures, discussions, Q&A, labs) contribute to the learning process.
7. **Excused Absences:**
   a. Excused absences are typically granted for illness or family emergencies.
8. **Advance Notice:**
   a. If you anticipate missing a class, please communicate with me beforehand.
9. **First Lesson Importance:**
   a. Attendance is particularly crucial for the first lesson of each course. Students not present on the first morning (excluding valid reasons like illness or family emergencies) may be advised to withdraw.
10. **Unexcused Absences:**
    a. Unexcused absences may result in an NC (No Credit) grade for the entire class.

Your active participation and attendance are key to your successful learning experience. If you have any questions or concerns, please don't hesitate to reach out to me.