Introduction to the course

DevOps: Automating Software Delivery and Operations

8th Sept 2021

Chinmaya Dehury

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Course Details

- **Title**: DevOps: Automating Software Delivery and Operations LTAT.06.015
- **Lecturer**: Chinmaya Dehury (responsible), Pelle Jakovits
- **Lab Supervisors**: Shivananda Poojara, Jekaterina Gorohhova
- **Language**: English
Learning outcomes

By completing this course students will be equipped with:

• In-depth understanding and necessity of DevOps.
• Skills to bring automation in different software delivery phases.
• Software stack that is needed to implement CI/CD.
• Skills to automate the testing, building, and integrating the software packages/modules.
• Knowledge on monitoring and scaling of the deployed software.
Course Duration and Schedule

• **Lectures:**
  • Wednesday, 14:15-16:00 : Room no. 1022

• **Practical Sessions:**
  • Wednesday, 16:15-18:00 : Room no. 2047 (Group-1, Shivananda Poojara)
  • Friday, 14:15-16:00 : Room no. 2047 (Group-2, Jekaterina Gorohhova)

• **Examinations:**
  • Option 1: 08 Dec 2021
  • Option 2: 15 Dec 2021
Course Structure

13 Lectures

- Lec-01: 08 Sept: Introduction to the Course + Introduction to DevOps Part I
- Lec-02: 15 Sept: Introduction to DevOps Part II + Cloud Computing
- Lec-03: 22 Sept: Containerization
- Lec-04: 29 Sept: Automation
- Lec-05: 06 Oct: Version Control System (VCS)
- Lec-06: 13 Oct: Microservice-based Application Development
- Lec-07: 20 Oct: Application Deployment Modelling
- Lec-08: 27 Oct: Continuous Integration, Delivery and Deployment
- Lec-09: 03 Nov: Continuous Testing
- Lec-10: 10 Nov: Monitoring
- Lec-11: 17 Nov: DataOps
- Lec-12: 24 Nov: DevOps for serverless: RADON Use Case
- Lec-13: 01 Dec: Industrial and Research Challenges and Future Scope

12 Practical sessions

- Lab-01: 08 Sept: Working with Cloud Infrastructure
- Lab-02: 15 Sept: Openstack CLI + Docker Engine
- Lab-03: 22 Sept: Docker + Kubernetes
- Lab-04: 29 Sept: Ansible automation tool
- Lab-05: 06 Oct: Code management platform - GitLab
- Lab-06: 13 Oct: Microservice & APIs
- Lab-07: 20 Oct: TOSCA Modelling & Orchestration
- Lab-08: 27 Oct: CI/CD with GitLab
- Lab-09: 03 Nov: CI/CD & Testing with Jenkin
- Lab-10: 10 Nov: Prometheus
- Lab-11: 17 Nov: CICD with Data intensive application
- Lab-12: 24 Nov: RADON Use case
- Lab-13: 01 Dec: No Lab Session

Examinations:

Option 1: 08 Dec 2021
Option 2: 15 Dec 2021
ETAIS marketplace

- HPC resource
- OpenStack

- Use case for DevOps Practice
Grading Policy

Grading
• Timely submission of homework and practical: 50 points
• Final examination: 45 points
• Active participation in lecture: 5 points

Note: The total score will be truncated to 100, if it is exceeding.

Exam and Deliverable
• Deadline for each practice session by the end of next week (i.e. timely submission).
  • E.g. For the practice sessions on 8.Sept (Wed) and 10.Sept (Fri), you need to submit the deliverable by 17.Sept (Fri).
• Post-deadline submission: score for that practice session will be deducted by 50%.
• Submit bonus tasks and get bonus 20% point (10% point for post-deadline submission).
• Submission of at least 10 deliverables is a must-have condition to be able to attend final examination.
• Each submission will be evaluated and scored out of 10.
• Each timely and complete submission will give you 10 out of 10.
• Instructure may give you another chance if the submission is incomplete and let you score 10 out of 10.
• You may find the definition of Complete submission in the corresponding deliverable section.
Mode of Delivery: Online and Offline

• For communication:
  • Make sure that you have joined the DevOps Slack workspace
  • write to Chinmaya.Dehury@ut.ee, if you are not in the Slack workspace.

• Most of the lecturer will be online (using panopto)
• During lecture, you may ask question over slack

Quick Survey ->

https://www.menti.com
Code: 8057 8773
Course Delivery:

- Hybrid (Online + Offline): 11
- Online: 12
- Offline: 5
For Online delivery:

1st: Panopto
2nd: Zoom
3rd: MS Team
4th: BBB
5th: Others
Plagiarism policy

• Please go through following link:

https://www.ut.ee/en/current-students/academic-fraud
Any Question?

THANK YOU