DevOps Engineering

Introduction – 28 September 2026

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Content

- Courses
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DevOps Content

- Linux foundations for DevOps, Networking SSH and Firewalls, Reliable Bash Automation
- Git Collaboration and History Engineering
- Containerized Applications with Docker and Compose
- CI CD Pipelines and Release Engineering
- Configuration Management with Ansible
- Infrastructure as Code with Terraform
- Observability with Metrics Logs Dashboards and Alerts
- Performance and Load Testing
- Kubernetes Deployment Autoscaling and Self Healing
- Integrated DevOps Delivery Platform

DevOps Labs (2)

- It negotiates scores per team, per member…
- There is no upper limit for points
- THERE exists lower limit for labs and project scores
- Important: Make connection with Java Technologies labs!

Project

- Teamwork (3-4-5-6 persons) + 1, 2 scientific coordinators
- Will involve:
  - Research project following specific steps in software engineering
  - Documentation (what others have done, what are the most important names in the field, what they did, tools, reference sites, + / -)
  - Modeling using UML and BPMN Diagrams
  - Implementation (main module, interface, AOP, DevOps)
  - Automated testing
  - Evaluation, Comparison with other systems, statistics Documentation, Articles

Exam

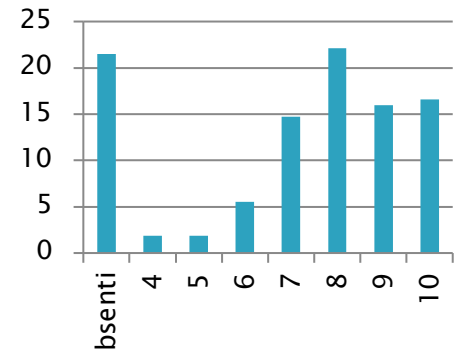
- Without documentation 35 minutes
- Multiple choice questions
- Emphasis will be on understanding the theoretical concepts presented in class and used in lab practice

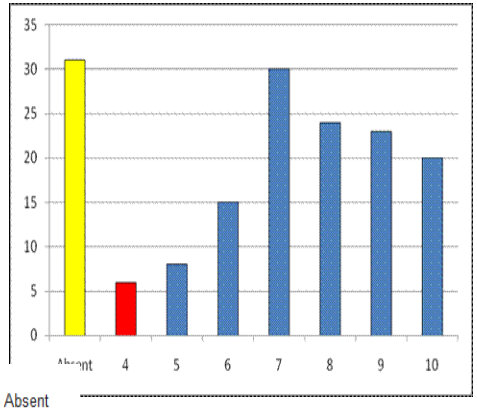
Scoring (1)

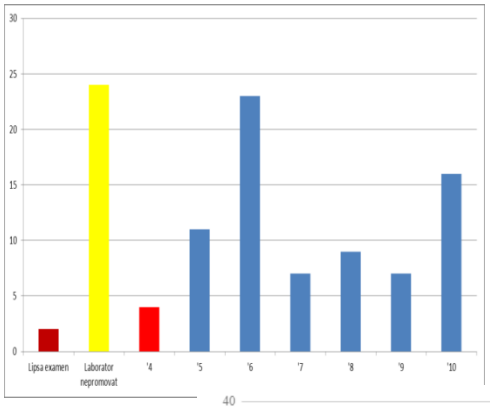
- **Lab grade** – obtained during the first 6 labs (theme weeks, teamwork) ~ complete implementation
- **Project grade** – produced in the last 6 labs (a team project where each will contribute) ~ completed research component
- **Exam grade** – 35 minute, the focus will be on understanding the concepts covered

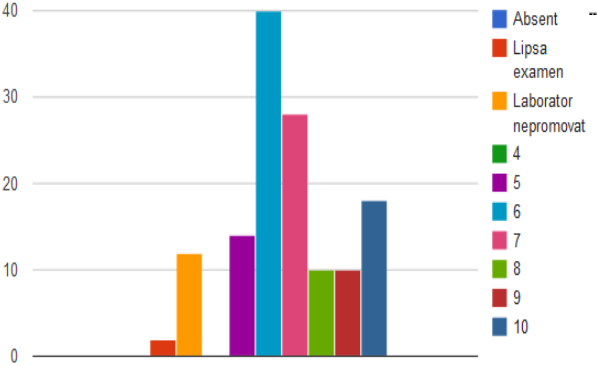
Scoring (2)

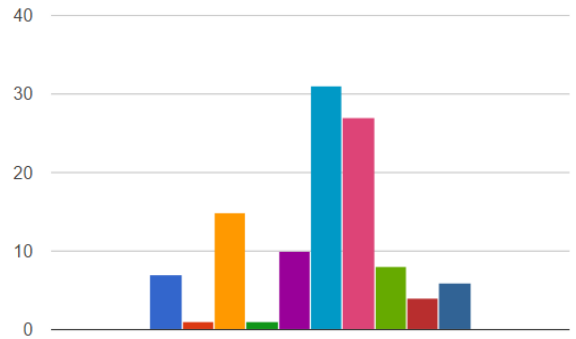
- **Final grade** = 10 * (lab_points + exam_points)/ (max_lab_points_without_bonuses+max_exam_points)
- Conditions of promoting:
  - Lab_points > 60 % * Lab_Max_points
  - **Exam_points > 40% * Exam_Max_points**

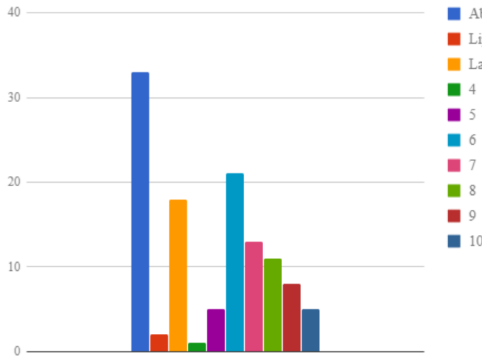












Communication protocol

- On request you will send partial solutions to e-mail

- 3 requests (-5 points for each requirement not respected):
  - Subject: **[DevOps] – Solution stage X**
  - Attachment: **TGZ archive**
  - Content: **Signature Ionescu George, First Year Master, SD Specialization**

Bibliography

- Web page with SE courses Adrian Iftene https://edu.info.uaic.ro/ingineria-programarii/
- Web page Ovidiu Gheorghieş (worked with Adriana G.) http://profs.info.uaic.ro/~ogh/ip/
- Ian Sommerville: Software Engineering, Addison Wesley, 2001
- Craig Larman: Applying UML and Patterns, Addisson Wesley, 2002
- Erich Gamma, Richard Helm, Ralph Johnson, John Vissides: Design Patterns, Elements of Reusable Object-Oriented Software, Addisson Wesley, 1998
- Internet

Microsoft Teams

- The Course will be in hybrid mode
- Microsoft Teams