

# SCOM/ SRSI

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# Introduction

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I336, office hours:

appointment **online** through moodle

Contact via moodle, forum or personal message

Email only if need be, no delay guarantee. Please use [SCOM-SRSI] on subject: [ana.aguiar@fe.up.pt](mailto:ana.aguiar@fe.up.pt)

## Mobile Systems

- 802.11 a/b/g/n/ac/ad... for mobile nodes, vehicular networks
- (Mobile) Internet of Things
- Geo-spatial data mining
- Applications to intelligent mobility, pedestrians and cyclists

# Networked Applications

- Web: HTTP, Caching
  - Overlay networks: CDN, P2P networks
  - Multimedia: VoIP, IPTV, video streaming
  - Internet of Things: arquitectura, protocolos, plataformas, desafios
  - Quality of Experience
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# Multimedia Delivery

- IETF multimedia stack
  - RTP/ RTCP/ SDP/ SIP
- HTTP based video delivery
  - MPEG-DASH
- CDN-based video distribution (if time)



# Resource Allocation in Networks

- Network performance metrics
  - Congestion control and avoidance in best effort: TCP congestion control, active queue management
  - Resource allocation mechanisms: queueing policies, scheduling, token bucket, leaky bucket, traffic engineering
  - Resource management architectural elements: label switching, protocols, IntServ, DiffServ, SDN and slicing
  - Network neutrality
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# Methods

- Lectures
    - Videos
    - Exercises
    - Discussion
  - Seminars
  - Lab
    - Assignments:
      - Anatomy of a web service (mandatory)
      - QoS and traffic engineering with tc (mandatory)
    - Project
      - You propose something related to the course
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# Seminars

- 20min presentation of article
  - This year: prepare a video to see in class and
- 24 students -> 8 groups of 3
- You choose the topic. Keep an eye on moodle
- Deliver
  - Max 2-page summary until 5 days before the deadline
  - Presentation 1 day strictly before presentation
- **These papers are mandatory reading**
  - **There can be questions about them in the exam**

# Lab Classes

- 10 lab sessions
  - Network lab: I 320 + I321
    - 12 people each shift
    - Same shift as for SSRE (when relevant)
  - Begin: Sep 28th
- Documents to be delivered through moodle
- Documents sent per email are not considered for grading
- Reports sent out of date will be penalised 10% / calendar day
  - 1 day  $\Rightarrow$  -10%
  - 2 days  $\Rightarrow$  -20%



# Lab Assignments

Anatomy of a web service (3 weeks)

Free project proposed by you (6 weeks)

Traffic engineering with tc (3 weeks)

21-Sep	28-Sep	05-Oct	12-Oct	19-Oct	26-Oct	02-Nov	09-Nov	16-Nov	23-Nov	30-Nov	07-Dec	14-Dec
Web service												
			Free Project									
										QoS		

# Grading

$$FG = 40\% E + 15\% S + 45\% P$$

FG: Final grade

E: Exam

S: Seminar

P: Projects

Minimum grade 50% in each component

If  $|E-P| > 5$ , no grade can be “frozen”

# Stanford University Honor Code

The Honor Code is an undertaking of the students, individually and collectively:

**that they will not give or receive aid in examinations; that they will not give or receive unpermitted aid in class work, in the preparation of reports, or in any other work that is to be used by the instructor as the basis of grading;**

**that they will do their share and take an active part in seeing to it that others as well as themselves uphold the spirit and letter of the Honor Code.**

The faculty on its part **manifests its confidence in the honor of its students by refraining from proctoring examinations and from taking unusual and unreasonable precautions to prevent the forms of dishonesty mentioned above.** The faculty will also avoid, as far as practicable, **academic procedures that create temptations to violate** the Honor Code.

While the faculty alone has the right and obligation to set academic requirements, the students and faculty will work together to establish optimal conditions for honorable academic work.

# Violations of the Honor Code

Copying from another's examination paper or allowing another to copy from one's own paper

Unpermitted collaboration

## Plagiarism

Revising and resubmitting a quiz or exam for regrading, without the instructor's knowledge and consent

Giving or receiving unpermitted aid on a take-home examination

Representing as one's own work the work of another

Giving or receiving aid on an academic assignment under circumstances in which a reasonable person should have known that such aid was not permitted

# Plagiarism

”For purposes of the Stanford University Honor Code, plagiarism is defined as *the use, without giving reasonable and appropriate credit to or acknowledging the author or source, of another person's original work*, whether such work is made up of *code, formulas, ideas, language, research, strategies, writing* or other form(s).”

# UPorto Code of Conduct

## Código Ético de Conduta Académica da Uporto

Capítulo 3: Normas de boa conduta do pessoal docente e dos investigadores

Página 12: Boa conduta em atividades de ensino e de aprendizagem

Capítulo 5: Normas de boa conduta dos estudantes

Página 15: “Constituem condutas impróprias em processos de avaliação de conhecimentos: [...]”