

CSYS5010 Introduction to Complex Systems

Week 1a Overview of UoS

Dr. Joseph Lizier

COMMONWEALTH OF AUSTRALIA

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Your lecturers

Dr. Michael Harré (co-ordinator Semester 1)

- michael.harre@sydney.edu.au
- Room 341, Civil Engineering Building



Dr. Ramil Nigmatullin (co-ordinator Semester 2)

- ramil.nigmatullin@sydney.edu.au
- Room 413, Link Building



Dr. Joseph Lizier

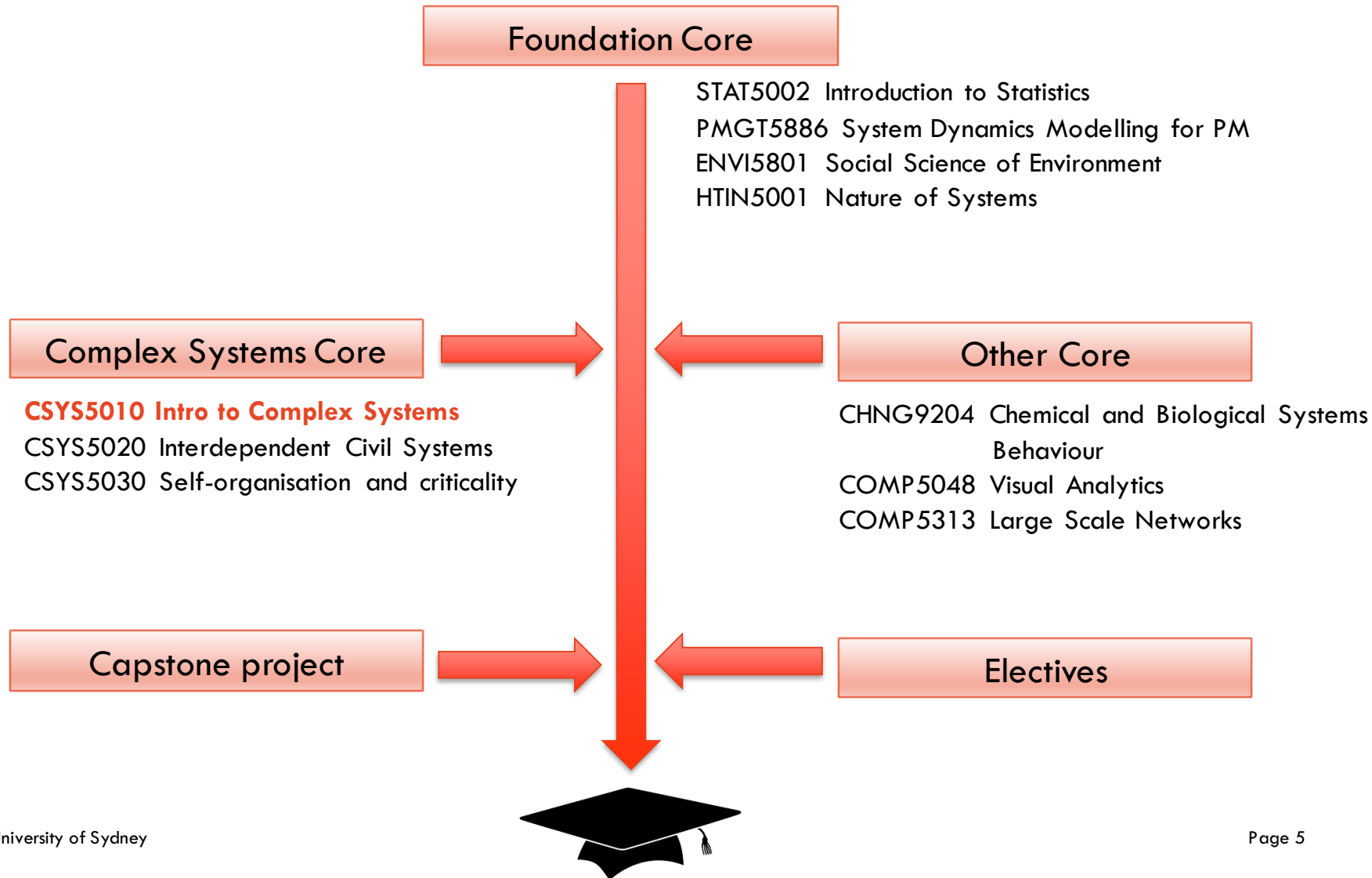
- joseph.lizier@sydney.edu.au
- Room 325, PNR Building



Let's get to know each other ...

- Who's studying full-time vs part-time?
- Who's in MCXS or other?
- What is your disciplinary background?
- Who has industry experience?
 - Which companies?
- How did you get interested in complex systems?
- **What are you hoping to get out of this degree and UoS?**

Context of this UoS in Master of Complex Systems



Let's get to know the UoS

- Unit of Study outline (access from “Unit Overview” on Canvas)
 - Introduction, learning outcomes and attributes developed
- Learning outcomes of the course:
 1. **Understand** and analyse the dynamics of complex systems using intermediate critical analysis skills.
 2. **Analyse and evaluate** models of complex systems using scientific programming and the 'Modelling Loop'.
 3. **Create**, using a scientific modelling language such as NetLogo, multi-agent models of complex systems.
 4. **Understand** the nature, structure, function and evolution of complex systems and emergent behaviour in multiple different fields.
 5. **Select and apply** different approaches to analysing complex systems in different domains (e.g. game theory, dynamical systems, genetic algorithms).
 6. **Design and evaluate** large systems that satisfy structural and functional criteria within given domains and contexts integrating complex systems approaches.
- Study commitment

Canvas site

- Canvas will guide us through each week's activities:
 - Readings and other resources
 - Pre-work!
 - Lecture slides
 - Activities/tutorials
- Access CSYS5010 through <https://canvas.sydney.edu.au>
 - Announcements – check your University email address!
 - Unit Information
 - UoS Overview
 - Unit readings
 - Course content / Unit Modules
 - Lecture recordings
 - Assessments (*more on next slide ...*)
 - Class discussion board

Assessment

- Individual assignment:
 1. Article review – 10% – due week 3

- Group assignment – major creative project:
 2. Project proposal – 25% – due week 6
 3. Oral presentation – 25% – in class in week 11
 4. Written report – 40% – due in week 13
- Individuals marks will be modulated

Assessment

- Academic honesty policy:
 - See links in each assessment page
 - TurnItIn – text matching software will be used to ensure compliance with this policy
- Peer evaluation will be conducted and contribute to the assessment.
- Extensions and late policy – see UoS outline on Canvas

UoS overview

Week	Lecturer	Topic	Assessments
1	JL	Introduction to complex systems and modelling	
2	RN	Agent-based modelling I	
3	RN	Agent-based modelling II	1. Article review (10%)
4	RN	Agent-based modelling III	
5	RN	Agent-based modelling IV	
6	RN	Dynamical systems I	2. Project proposal (25%)
7	RN	Dynamical systems II	

UoS overview

Week	Lecturer	Topic	Assessments
8	MH	Evolution and genetic algorithms	
9	MH	Game theory	
10	JL	Computation, information, order and randomness I	
11		Project presentations	3. Project presentation (25%)
12	JL	Computation, information, order and randomness II	
13	MH	Artificial Intelligence case study	
14		<i>Stuvac</i>	4. Project report (40%)

Questions



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