CS7NS1/CS4400 SCALABLE COMPUTING

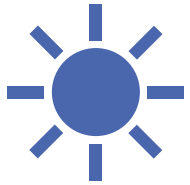
INTRO

What you will be doing?

When you will be doing it?

Why you will be doing it?

Things to know



Staff ...	Structure ...
✓ Ciaran : Ciaran.McGoldrick@scss.tcd.ie	➢ 100pc Continuous Assessment; Supp different
✓ Stephen: Stephen.Farrell@scss.tcd.ie	➢ Lectures, flip classroom, blended learning
✓ TA: Christian: cabrerac@scss.tcd.ie	➢ Media/Videos, guest lectures
	➢ Mix of inclass tests, projects, attendance, etc
✓ Demonstrators: To follow.	➢ Blackboard and github
✓ Timetabled slots:	➢ Thinking: A LOT of thinking
✓ Monday, Wednesday, Thursday.	➢ Synthesizing: A LOT of synthesizing
✓ All proceed unless otherwise advised by Email	➢ Expressing: A LOT of expressing
	➢ Doing: A LOT of doing

Professionalism

You will…	We will…
✓ Attend all timetabled and scheduled activities ❑ Lectures ❑ Labs ✓ Submit all assignments on time, or early ✓ Check in regularly on github and blackboard ✓ Work professionally and respectfully with all your peers, colleagues and college staff ✓ NOT PLAGIARISE? ❑ zero tolerance for plagiarism	➢ help you as and when we can ➢ Provide a Teaching Assistant as your first point of administrative and technical contact and query ➢ Provide demonstrators to provide direct support to your learning and project activities ➢ Fairly and objectively deal with any issues or problems

Groupwork

You will…	…
✓ Have groupwork as part of this module ✓ Work productively and effectively in mixed groups as... ❑ You will have to in employment ❑ You need to refine your abilities to effectively and collaboratively assess, agree and assign tasks across group ❑ You need to learn to manage your own time, commitments and tasks ❑ You will plan and manage your own time and meeting schedules	❑ you must make ongoing effective progress ❑ You may be called on at different times to summarize or briefly present your progress to date ❑ You must handle any team or group issues locally within your group ❑ (in exceptional situations) you may call on the TA to intervene. He will involve the academic staff members as necessary ❑ You must take ownership for the final submission, and the grading awarded thereof

Questions

Any questions so far ….	
✓ Lectures will usually happen in the Monday slot. Some of the Thursday slots will be used for lectures and guest speakers. Wednesdays in the labs. Slot being used advised in advance. ✓ The lecture and academic material will supplement your knowledge and understanding of the field and the practical activities. ✓ Groups will be randomly assigned by TA ✓ Groups may be mixed across both cohorts taking this module ✓ Coordination of your local meetings will be arranged locally within your group	➢ You will be examined on all lecture and academic material, including guest speaker material ➢ The module is 100% assessed by continuous assessment for the first sitting mark ➢ Supplemental examinations may be entirely written under examination conditions for 100% of the supplemental mark. That remains to be established

Scalable Computing

What is it …	What does it encompass …
Properties: ✓ Scalable : how big is big ✓ Adaptive : how easily reconfigurable and repurposed ✓ Dispersed : tasks, resources, nodes, processes ✓ Accessible : Human, machine ✓ Affordable : Devices, comms, energy, deployment ✓ Reliable : Lifetime, MTBF, consequences **Domains:** ✓ Internet of Things ✓ Processing Units: CPUs, GPUs ✓ Functional Groupings: Cluster, Grid, Cloud ✓ Nano architectures ✓ Quantum architectures	**Core:** ➢ Processing : computational, data, ... ➢ Communications : carriers, systems, protocols ➢ Proximity : location, distance ➢ Trust : security, P2P **Concepts:** ➢ Horizontal/Vertical Scaling ➢ Self organization ➢ Adaptation ➢ Tuning ➢ Gustafson's law ➢ ...

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How we will approach it…	What you will learn …
✓ From the domain standpoint ✓ With relevance to the three main streams/cohorts taking the module ✓ Focusing on the core concepts in each domain, and espousing the properties and concepts thereof ✓ Supplementing this with quizzes, tests, media and video material, and participation requirements ✓ Exposure to modern platforms and infrastructures e.g. amazon aws ✓ Practical implement, validate, optimize and demonstrate tasks that build iteratively throughout the module	➢ Theory, principles and practice in the broad present day Scalable Computing domain ➢ Theory, principles and practice in future Scalable Computing domains ➢ Technical synthesis and dissemination skills ➢ Team and groupwork ➢ Time and resource management and effective deployment

Scalable Computing

What you will do…	Why you will do it…
➢ **The practical lab work : Stephen, Christian**	➢ **The practical lab work : Stephen, Christian**

Scalable Computing : Vox Pop

10 minutes … 5 people. 2 important facts	Take aways …
✓ **1** ➢ i ➢ ii ✓ **2** ➢ i ➢ ii ✓ **3** ➢ i ➢ ii ✓ **4** ➢ i ➢ ii ✓ **5** ➢ i ➢ ii	➢ Five key takeaways:

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First assignment…	First submission …
✓ Required. Due 5pm Sunday 16th September. ✓ http://ieee-iotj.org/review-papers-list/ ✓ ✓ Each student to take and study **one(1) tutorial paper AND one(1) review paper** from these lists. Only choose papers relevant to your stream and specific interests ✓ For each of those papers: ➢ identify the five key contributions/findings/conclusions of the paper. ➢ identify the five key technology insights provided by the paper; ➢ identify the five key insights of relevance to Scalable Computing that you have gleaned from this paper.	➢ Blackboard: mymodule.tcd.ie ➢ AUTOMATIC plagiarism detection • Submit a pdf of a single sided A4 page including your name, student ID, course code (and stream as relevant) and your concise writings on each of i-iii above. • Your total submission should be no longer than one standard A4 page, 11pt font so please be as concise and technically precise as possible in your writing.

Round up 

What have you learned ...	What did you hope to learn ...
✓ People ✓ Structure ✓ Requirements ✓ Expectations ✓ Groupwork ✓ Scalable Computing ✓ Intro ➢ What you think ➢ What we think ➢ What we will cover ➢ Why we will cover it	➢ ➢ ➢ ➢ ➢ ➢ ➢ ➢ ➢