VIETNAM NATIONAL UNIVERSITY

UNIVERSITY OF INFORMATION

TECHNOLOGY

REPUBLIC SOCIALIST OF VIETNAM

Independent –Freedom –Happiness

SYLLABUS

NT533–DISTRIBUTED COMPUTING SYSTEMS

1. GENERAL INFORMATION

Course name::	Distributed Computing Systems
Lecturer	Dr. Pham Van Hau, haupv@uit.edu.vn
Credits	3
	Theory : 2 Lab : 1
Class hours:	30 hours (1 academic hour: 45 minutes)
Lab hours	30 hours

2. OBJECTIVE

The course first presents the principal of parallel and distributed computing. After studying this course students have the ability to understand how distributed systems work both in terms of model and technology.

3. COURSE BRIEF CONTENTS

The course introduces distributed and parallel systems, services of distribution system such as file sharing, high-performance computing based on cluster, grid computing, cloud

computing. More specifically, the course introduces the concepts and basic techniques used in distributed computing systems. Technical topics covered in this course include communication mechanism between processes, programs, distributed storage systems, concurrency control

4. OUTCOME STANDARD

Description	Goals
Development of network applications	G1(1.3.2)
Survey of Print and Electronic Literature, Experimental Inquiry, Hypothesis Test and Defense	G2(2.2.2)
Test, Verification, Validation and Certification	G3(2.6.2)
Training and Operations	G4(2.7.2)
Reading/Writing Technical Reports, Documents in English	G5(2.10.1)

5. COURSE CONTENTS

Periods	Content	Goal	Activities
1	An overview of distributed computing: definition, characteristics, models, distributed computing architecture	G1,G4	Group formation. Teaching: lecturer
2	SOA	G1,G4	gives instructions,
3	P2P computing	G1,G4	demo, question
4	P2P computing(2)	G1,G4	
5	Parallel and distributed algorithms	G1,G4	Study in class:
6	Parallel and distributed algorithms (2)	G1,G4	exchange related
7	Cluster middleware (1)	G1->G5	issues, problems.

8	Cluster middleware (2)	G1->G5	
9	Cluster middleware for big data	G1->G5	
10	Grid computing	G1->G5	
11	Middleware for grid computing	G1->G5	
12	Introduction to cloud computing	G1->G5	
13	Resource management in cloud computing	G1->G5	
14	Service management in cloud computing	G1->G5	
15	Revision	G1->G5	

Lab:

Periods	Content	Goal	Activities
Buổi 1	distro for cluster	G1→G5	Teaching: lecturer gives instructions, demo, questions.
Buổi 2	Lab on grid computing (1)	G1→G5	
Buổi 3	Lab on grid computing (2)	G1→G5	
Buổi 4	Cloud installation	G1→G5	Discuss in pairs.
Bài năm	Service management for cloud	G1→G5	Study in class: exchange related issues, problems.

			Group discussion.

6. TEACHING & LEARNING METHODOLOGY

Students attend lectures, do assignments and do presentations. Students are encouraged to be creative, to find the research topics and to practice problem solving skill.

7. EVALUATION

Format Goals Ratio (%)	Format Goals Ratio (%)	Format Goals Ratio (%)
A1. Projects/Seminar/Assignment	G1→G5	25%
A2. Mid-term		0
A3. Lab	G1→G5	25%
A4. Final	G1→G5	50%

8. REFERENCE BOOKS

Michael J. Kavis (2014). *Architecting the Cloud: Design Decisions for Cloud Computing Service Models (SaaS, PaaS, and IaaS).*: Wiley; 1 edition (January 28, 2014).

Lecturer