Course Syllabus

1. **Course Title:** Geographic Information System
2. **Course Code:** GISM124910
3. **Credit Units:** 3 (2/1/6) (2 units of theory/ 1 unit of practice/ 6 units of self-study)

   Duration: 15 weeks (2 hours of theory + 2 hours of practice, and 8 hours of self-study per week)
4. **Course Instructors**

   1/ MSc. Nguyen Ha Trang

   2/ MSc. Nguyen Thi Tinh Au
5. **Course Requirements**

   Prerequisite courses: None

   Previous courses:

   Parallel courses: None
6. **Course Description**

   GIS is a combination of software, hardware, data and people with capabilities for manipulating, analyzing and displaying spatially-referenced information which is referenced by its location on the earth's surface. The course emphasizes the concepts needed to use GIS correctly and effectively for manipulating, querying, analyzing, and visualizing spatial-based data in environmental management.

   The course will comprise both lecture and lab. The lab component will focus on the use of **ArcGIS** (Version 10.2) software
7. **Course Goals**

Goals	Goal Description	Programme ELOs
G1	The ability to apply the specialized knowledge of GIS in environmental management	ELO3
G2	Exercise professional ethics, honesty	ELO8
G3	The ability to conceive ideas and plan a collection system	ELO12

8. Course Learning Outcomes (CLOs)

CLOs		CLO Description	Programme ELOs
G1	**CLO1**	Modify a layer's source data	ELO3
	CLO2	Arrange a database	
	CLO3	Analyze environmental impact by ArcGIS software	
G2	**CLO4**	Apply copy right in research	ELO8
G3	**CLO5**	Model environmental problems by GIS tools	ELO12

9. Learning Resources
- Textbooks:

[1] TS. Nguyễn Kim Lợi, Ứng dụng GIS trong quản lý tài nguyên thiên nhiên, NXB Nông nghiệp

[2] PGS. TS. Bảo Huy, GIS và viễn thám trong quản lý tài nguyên rừng và môi trường, NXB Tổng hợp TP.HCM

- References:
[3] ESRI, ArcGIS user guide

10. Student Assessment
- Grading scale: **10**
- Assessment plan:

Type	Content	Timeline	Assessment method	CLOs	Rate (%)
Processing Assessment					**50**
BT#1	Assignment: Review GIS applications in environmental management.	Week 3	Assignment	**CLO3**	10
PRJ#1	Project 1: Apply GIS to solve a environmental problems	Week 8	Assignment	**CLO1** **CLO2** **CLO3** **CLO4** **CLO5**	20
BT#2	Online test	Week 12	Multicipal test	**CLO3** **CLO4**	20
Final exam					**50**
Total					**100**

11. Course Content

Week	Content	CLOs
1-2	**Chapter 1: Introduction of GIS** *(4,4,16)*	
	A/ Content and pedagogical methods in class: *(8h)* **Content:** 1.1 GIS in history 1.2 Definitions 1.3 Components of GIS 1.4 Working with layers, graphics and text, styles and symbols 1.5 Symbolizing features 1.6 Instructure about installing ArcGIS **Pedagogical methods**: + Presentation of lecture + Focus group discussion	**CLO1** **CLO2**
	B/ Self-study content: *(16h)* + BT#1 *(8h)* + Practice 1.6 at home *(8h)*	
4-5	**Chapter 2: GEOGRAPHIC AND MAP** *(6,6,24)*	
	A/ Content and pedagogical methods in class: *(12h)* **Content:** 2.1 Definitions 2.2 Map output 2.3 Map projections 2.4 Classify maps **Pedagogical methods**: + Presentation of lecture + Group exercises + Discussion	**CLO2** **CLO4** **CLO5**
	B/ Self-study content: *(24h)* + Homework + PRJ#1 + Practice ArcGIS at home	
6-9	**Chapter 3: DATABASE IN GIS** *(8,8,32)*	
	A/ Content and pedagogical methods in class: *(16h)* **Content:**	**CLO3** **CLO5**

	3.1. Structure of database in GIS	
	3.2. Displaying data in maps	
	3.3. Working with rasters	
	3.4. Working with vetors (features)	
	3.5. Working with tables	
	3.6. Creating reports	
	3.7. Analyzing data	
	Pedagogical methods:	
	+ Presentation of lecture	
	+ Group exercises	
	B/ Self-study content: *(32h)* + Review the content of chapter 1,2,3 to prepare for online test + Practice ArcGIS at home + PRJ#1	
10-12	**Chapter 4: GLOBAL POSITIONING SYSTEM - GPS** *(6,6,24)*	
	A/ Content and pedagogical methods in class: *(12h)* **Content:** 4.1 Definitions 4.2 Components 4.3 Accuracy 4.4 Applications **Pedagogical methods**: + Presentation of lecture + Power point presentation + Focus group discussion	**CLO5**
	B/ Self-study content: *(24h)* + Review	**CLO1** **CLO2**
13	**Using GPS outside**	
14-15	**Presentation PRJ#1**	

12. Learning Ethics

Students must do homework by themselves. If plagiarism is found students will get zero point.

13. Date of first approval: August 1st, 2012

14. Approved by:

Dean	Head of Department	Compiler

Prof. Nguyen Van Suc   MSc Nguyen Thi Minh Nguyet   MA Nguyen Thi Tinh Au

15. Date and Up-to-date content

	Instructor:
1st time: August 25th , 201**5** - Update content and structure of the programme adjusted in: - Content and assessment method	 Nguyen Ha Trang Head of Department: Dr Tran Thi Kim Anh