Course Syllabus

1. **Course Title:** Geodesic Survey Practice
2. **Course Code:** SURV210219
3. **Credit Units: 1** (0/1/0) (0 units of theory/1 unit of practice/0 units of self-study)
   Duration: 8 weeks (6 hours of theory + 0 hours of practice, and 3 hours of self-study per week)
4. **Course Instructors:**
   1. MSc. Nguyễn Văn Khoa
   2. MSc. Nguyễn Thị Ánh Tuyết
   3. MSc. Lương Xuân Cán
5. **Course Requirements:**
   Prerequisite courses: Non
   Previous courses: Geodesic Survey (SURV220119)
   Parallel courses: Non
6. **Course Description**
   This subject helps students apply their knowledge about the geodesic issues in practice of survey operations and layout with theodolite and leveling instruments. It includes: knowledge about optical theodolite; angle measurement in accordance with the method of arc and whole circumference; vertical angle measurement by theodolite; direct length measurement by long tape; indirect length measurement by theodolite and leveling staff; measurement of trigonometric leveling; guideline of theodolite; measurement of the difference in level from the middle by theodolite (technical level measurement); establishment of the grid of coordinates and altitude.
7. **Course Goals**

Goals	Goal Description	Programme ELOs
G1	Analyze and solve basic surveying problems; Solve problems of practical measurement; Perceive professional practice skills in construction engineering including professional and ethical responsibility.	2.1, 2.2, 2.5
G2	Adapt effectively in the professional environment, leadership and teamwork in the context of surveyor; Choose various communication skills to support the needs and character of the audience; Use English in construction engineering, with the emphasis on reading and writing skills.	3.1, 3.2, 3.3

8. **Course Learning Outcomes (CLOs)**

CLOs		CLO Description	Programme ELOs
G1	**G1.1**	Analyze and solve basic surveying problems locating the construction	2.1
	G1.2	Solve problems of practical measurement	2.2

	G1.3	Perceive professional practice skills in construction engineering including professional and ethical responsibility.	2.5
G2	**G2.1**	Develop experience of collaborative group-working	3.1
	G2.2	Choose various communication skills to support the needs and character of the audience	3.2
	G2.3	Engage in reading geodesic materials in English	3.3

9. Learning Resources

- Textbooks:

  [1] Phạm Văn Chuyên, **Hướng dẫn thực hành trắc địa đại cương**, NXB giao thông vận tải – 2005.

- References:

  [2] Phạm Văn Chuyên, Lê Văn Hưng, Phan Khang, **Sổ tay Trắc địa công trình**, NXB xây dựng – 2008.

10. Student Assessment:

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

Type	Content	Timeline	Assessment method	CLOs	Rate (%)
Progress assessment					**50**
Setting up a theodolite	Setting up a theodolite	Week 1	Result of setting	G1.1, G1.2, G1.3, G2.1, G2.3	10
Measure	Angular measurement	Week 2	Result of measurement		5
Measure	Distance measurement	Week 3	Result of measurement		5
Measure	Height measurement	Week 4	Result of measurement		5
Measure	Build a height contrrol network	Week 5	Result of measurement		10
Measure	Build an coordinate contrrol network	Week 6	Result of measurement		15
Report + Practice examination				G2.2	**50**

11. Course Content:

Week	Content	CLOs
1	***Lesson 1: Regulations in workshop + Lesson 2: Introduction a theodolite*** *(0/6/3)*	
	A/ Content and pedagogical methods in class: ***Content:*** + Regulations in workshop	G1.1, G1.2, G1.3, G2.1, G2.3

	+ Introduction a theodolite. ***Pedagogical method:*** + Instructions for use of lecture + Group practice	
	B/ Self-study content: + Review + Writing report with practical data ***Studying materials*** [1], [2]	
2	***Lesson 3: Horizontal angular mesurement*** *(0/6/3)*	
	A/ Content and pedagogical methods in class: ***Content:*** **+** Horizontal angular mesurement by a theodolite ***Pedagogical method:*** + Instructions for use of lecture + Group practice	G1.1, G1.2, G1.3, G2.1, G2.3
	B/ Self-study content: + Review + Writing report with practical data ***Studying materials*** [1], [2]	
3	***Lesson 4: Vertical angular mesurement*** *(0/6/3)*	
	A/ Content and pedagogical methods in class: ***Content:*** **+** Vertical angular mesurement by a theodolite ***Pedagogical method:*** + Instructions for use of lecture + Group practice	G1.1, G1.2, G1.3, G2.1, G2.3
	B/ Self-study content: + Review + Writing report with practical data ***Studying materials*** [1], [2]	
4	***Lesson 5: Distance measurement*** *(0/6/3)*	
	A/ Content and pedagogical methods in class: ***Content:*** + Distance measurement by staff + Distance measurement by steel tape ***Pedagogical method:*** + Instructions for use of lecture	G1.1, G1.2, G1.3, G2.1, G2.3

	+ Group practice	
	B/ Self-study content: + Review + Writing report with practical data ***Studying materials*** [1], [2]	
5	***Lesson 6: Trigonometric height measurement*** *(0/6/3)*	
	A/ Content and pedagogical methods in class: ***Content:*** + Trigonometric height measurement ***Pedagogical method:*** + Instructions for use of lecture + Group practice	G1.1, G1.2, G1.3, G2.1, G2.3
	B/ Self-study content: + Review + Writing report with practical data ***Studying materials*** [1], [2]	
6	***Lesson 7: Geometric height measurement – Build a technical height control network*** *(0/6/3)*	
	A/ Content and pedagogical methods in class: ***Content:*** + Introduction a level + Build a technical height control network ***Pedagogical method:*** + Instructions for use of lecture + Group practice	G1.1, G1.2, G1.3, G2.1, G2.3
	B/ Self-study content: + Review + Writing report with practical data ***Studying materials*** [1], [2]	
7	***Lesson 9: Build a technical coordinate control network*** *(0/6/3)*	
	A/ Content and pedagogical methods in class: ***Content:*** + Build a technical coordinate control network ***Pedagogical method:*** + Instructions for use of lecture + Group practice	G1.1, G1.2, G1.3, G2.1, G2.3

	B/ Self-study content: + Review + Writing report with practical data ***Studying materials*** [1], [2]	
8	***Lesson 10: Instruction writitng a report*** *(0/3/2)*	
	A/ Content and pedagogical methods in class: ***Content:*** + Instruction writitng a report ***Pedagogical method:*** + Presentation of lecture	G2.2
	B/ Self-study content: + Final report ***Studying materials*** [1], [2]	G2.2

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**	**Instructor**
A/Prof.Dr. Nguyễn Trung Kiên	**MSc. Nguyễn Văn Khoa**	**MSc. Nguyễn Thị Ánh Tuyết**

15. Date and Up-to-date content

1st time: Date/Month/Year	Instructor: Head of Department: