COURSE SYLLABUS

1. **Program of Study**: Bachelor of Science (Physics)
   Faculty/Institute/College: International College, Mahidol University

2. **Course Code**: ICPY 453
   Course Title: Theory of Relativity

3. **Number of Credits**: 4 (4-0-8) (Lecture/lab/Self-study)

4. **Prerequisites**: None

5. **Type of Course**: Elective Major Course

6. **Session / Academic Year**: 1st, 2nd or 3rd Trimester/every academic year

7. **Course Conditions**: None

8. **Course Description**:
   The Michelson-Morley experiment, the Lorentz transformation, Einstein 's special theory of relativity, relativistic mechanics, relativistic wave equations.

9. **Course Objectives**:
   After successful completion of this course, students will be able to
   9.1 develop the key concepts on the topics of the Michelson-Morley experiment, the Lorentz transformation, Einstein 's special theory of relativity, relativistic mechanics, relativistic wave equations.

10. **Course Outline**

Week	Topics	Hours			Instructor
		Lecture	Lab	Self study	
1-2	Michelson-Morley experiment	8	-	16	Sujint Wangsuya
3-4	Lorentz transformation,	8	-	16	Sujint Wangsuya
5-6	Einstein 's special theory of relativity	8	-	16	Sujint Wangsuya
7	Midterm Examination	4	-	-	Sujint Wangsuya
8-9	Relativistic mechanics	8	-	16	Sujint Wangsuya
10-11	Relativistic wave equations	8	-	16	Sujint Wangsuya
Final Examination					
Total		48	-	80	

11. Teaching Method *(s)*

11.1 Lecture
11.2 Suggested readings
11.3 Discussion in class

12. Teaching Media

12.1 Powerpoint Presentations
12.2 Texts and teaching materials

13. Measurement and Evaluation of Student Achievement

Student achievement is measured and evaluated by

13.1 the ability to describe the key concepts on the topics of the Michelson-Morley experiment, the Lorentz transformation, Einstein 's special theory of relativity, relativistic mechanics, relativistic wave equations.

Student's achievement will be graded according to the college and university standard using the symbols: A, B+, B, C+, C, D+, D and F.

Ratio of mark	
Mid-term examination	40%
Final examination	40%
Attendance and assignment	20%
Total	100%

14. Course Evaluation

14.1 Evaluate as indicated in number 13 above.
14.2 Evaluate student's satisfaction towards teaching and learning of the course using a questionnaire.

15. References:

Bergmann PG. Introduction to the theory of relativity. UK: Peter Smith Pub; 2000.

16. Instructors:

Sujint Wangsuya

17. Course Coordinator:

Assistant Professor Dr. Santi Watanayon