COURSE SYLLABUS

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

2. **Course Code**: ICPY 321
   Course Title: Intermediate Mechanics

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

4. **Prerequisites**: None

5. **Type of Course**: Required Major Courses

6. **Session / Academic Year**: 3rd Trimester/every academic year.

7. **Course Conditions**: None

8. **Course Description :**
   Newton's laws, linear and rotational dynamics, Euler angles and rigid body dynamics, small oscillation.

9. **Course Objectives**:
   The course is designed to introduce the concepts of classical mechanics. After successful completion of this course, students will be able to
   9.1 understand Newton's law
   9.2 understand the linear and rotational dynamics
   9.3 understand the central force
   9.4 understand the rigid body dynamics and small oscillation.

10. Course Outline

Week	Topics	Hours			Instructor
		Lecture	Lab	Self study	
1-2	Newton's law 8	8	-	16	Dr. Narin Nuttavut
3-4	Linear dynamics	8	-	16	Dr. Narin Nuttavut
5-6	Rotational dynamics	8	-	16	Dr. Narin Nuttavut
7	Midterm Examination	4	-	-	Dr. Narin Nuttavut
8-9	Central forces	8	-	16	Dr. Narin Nuttavut
10-11	Rigid body dynamics and small oscillation	8	-	16	Dr. Narin Nuttavut
Final Examination					
Total		48	0	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 and apply Newton's law to solve problems in Physics.
13.2 The ability to describe and know how to apply the linear and rotational dynamics
13.3 The ability to describe the central force
13.4 The ability to describe and know how to apply the rigid body dynamics and small oscillation
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.
Students must attend at least 80% of the total class hours of this course.

Ratio of mark	
Mid-term examination	35%
Final examination	35%
Assignment	20%
Attendance	10%
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

Barber JR. Intermediate mechanics of materials. U.S.A.: McGraw-Hill; 2000.

16. Instructors:

Dr. Narin Nuttavut

17. Course Coordinator:

Assistant Professor Dr. Santi Watanayon