

COURSE SYLLABUS

1. **Program of study** Bachelor of Science (Biological Science)
Faculty International College, Mahidol University
2. **Course Code** ICPY 211
Course Title General Physics I
3. **Number of Credits** 4 (4-0-8) Credits (Lecture/Lab/Self-study)
4. **Prerequisites** ICPY 132
5. **Type of Course** Core science courses
6. **Trimester / Academic Year:**
First trimester /every academic year
7. **Course Condition**
None
8. **Course Description**
Kinetic theory, heat, temperature, thermodynamics, oscillation, waves.
Electricity and magnetisms.
9. **Course Objectives**
After successful completion of this course, students should be able
9.1 to describe kinetic theory, heat, temperature, thermodynamics,
oscillation, waves. Electricity and magnetisms.

10. Course Outline

Week	Topics	Hour			Instructor
		Lecture	Lab	Self-Study	
1	Systems, process, thermal equilibrium. Heat and heat transfer.	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
2	Internal energy and work. The first law of thermodynamics	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
3	The second law of thermodynamics	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
4	Some applications in thermodynamics.	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
5	Waves and the basic properties of waves.	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit

6	Sound wave and light waves	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
7	Electricity.	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
8	Electricity (continue). Direct current and dc circuits, applications	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
9	Magnetism, magnetic force and field.	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
10	Alternating currents	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
11	Some basic ac instruments and their applications	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
12	Final Examination	4	0	8	Dr. Santi Watanayon Dr. Srisuda Varamit
	Total	48	0	96	

Note

- Laboratory 1. Moment of Inertia
- Laboratory 2. Rotational Motion down a Slope
- Laboratory 3. Simple Harmonic Motion
- Laboratory 4. Viscosity
- Laboratory 5. Calorimeter
- Laboratory 6. Lens
- Laboratory 7. Multimeter
- Laboratory 8. Wheatstone Bridge
- Laboratory 9 & 10 Cathode Ray Oscilloscope

11. Teaching Methods:

Lecturing and classroom discussion

12. Teaching Media:

Transparencies, handouts and lecturing from boards.

13. Measurement and Evaluation of Student Achievement:

Student achievement is measured and evaluated by

- 13.1 the ability in describe of the fundamental principles of physics and its applications with emphasis on thermodynamics, sound and optics, electricity and electrical circuits.
 - 13.2 the ability in solving basic problems using fundamental equations developed in the areas listed above.
 - 13.3 the ability in applying fundamental principles of these fields of study to new situations
 - 13.4 the ability in using and handle some physical instruments
- Students should be able to perform and explain the aims and techniques in various physical experiments.

Assessment made from the set-forward criteria: student who gets 85% and above will have Grade A.

Ratio of mark

Midterm examination	30%
Final examination	35%
Lab report and lab examination	20%
Quizzes and class-work	15%

14. Course Evaluation

- 14.1 Students' achievement as indicated in number 13 above.
- 14.2 Students' satisfaction towards teaching and learning of the course using questionnaires.

15. References:

Halliday, D., Resnick, R. and Walker, J. Fundamental of physics. USA. John Wiley & Sons, 2001.
 Kane, J.W. and Sternheim, M.M. Physics. USA. John Wiley & Sons, 1988.

16. Instructors:

Lecture Instructor Assistant Professor Dr. Santi Watanayon
Laboratory Instructors Assistant professor Dr. Santi Watanayon and
 Assistant Professor Dr. Srisuda Varamit

17. Course Coordinator: Assistant Professor

Dr. Santi Vatanayon