COURSE SYLLABUS

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

2. **Course Code**: ICPY 371
   Course Title: Thermal Physics

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

4. **Prerequisites**: None

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

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

7. **Course Conditions**: None

8. **Course Description :**
   Laws of thermodynamics, heat engines, entropy, axiomatic formulation of thermodynamics.

9. **Course Objectives**:
   After successful completion of this course, students will be able to
   9.1 develop key concepts in the laws of thermodynamics, heat engines, entropy, axiomatic formulation of thermodynamics.

10. **Course Outline**

Week	Topics	Hours			Instructor
		Lecture	Lab	Self study	
1-2	The laws of thermodynamics	8	-	16	Dr. Santi Watanayon
3-6	Heat engines and thermodynamics applications	16	-	32	Dr. Santi Watanayon
7	Midterm Examination	4	-	-	Dr. Santi Watanayon
8-9	Entropy	8	-	16	Dr. Santi Watanayon
10-11	Axiomatic formulation of thermodynamics.	8	-	16	Dr. Santi Watanayon
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 Laws of thermodynamics, heat engines, entropy, axiomatic formulation of thermodynamics.

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:

Schroeder DV. An introduction to thermal physics. U.S.A.: Pearson Education; 2004.

16. Instructors:

Assistant Professor Dr. Santi Watanayon

17. Course Coordinator:

Assistant Professor Dr. Santi Watanayon