COURSE SYLLABUS

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

2. **Course Code**: ICPY 475
   Course Title: Plasma Physics

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**:
   Saha's formula, elementary statistical interpretation, guiding center motion. Maxwell's equation approach, Vlasov equations, Magnetohydrodynamic 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 Saha's formula, elementary statistical interpretation, guiding center motion. Maxwell's equation approach, Vlasov equations, Magnetohydrodynamic equations.

10. **Course Outline**

Week	Topics	Hours			Instructor
		Lecture	Lab	Self study	
1-2	Saha's formula	8	-	16	Dr. Udom Robkob
3-4	Elementary statistical interpretation, guiding center motion	8	-	16	Dr. Udom Robkob
5-6	Maxwell's equation approach	8	-	16	Dr. Udom Robkob
7	Midterm Examination	4	-	-	Dr. Udom Robkob
8-9	Vlasov equations	8	-	16	Dr. Udom Robkob
10-11	Magnetohydrodynamic equations	8	-	16	Dr. Udom Robkob
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 Saha's formula, elementary statistical interpretation, guiding center motion. Maxwell's equation approach, Vlasov equations, Magnetohydrodynamic 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:

Bellan PM. Fundamental of plasma physics. UK.: Cambridge University Press; 2006.

16. Instructors:

Dr. Udom Robkob

17. Course Coordinator:

Assistant Professor Dr. Santi Watanayon