Course Syllabus

1. **Program of Study**   Bachelor of Science Program
                                     Bachelor of Arts Program
                                     Bachelor of Business Administration Program
                                     Bachelor of Nursing Science Program
   Faculty/Institute/College   Mahidol University International College

2. **Course Code**   ICNS   131
   Course Title   Fundamental Physics

3. **Number of Credits**   4 (Lectures/Lab/Self-Study) (4-0-8)

4. **Prerequisite** *(s)*   none

5. **Type of Course**   General Education Course

6. **Session**   1st and 3rd trimesters

7. **Conditions**   -

8. **Course Description**

   An introduction to the basic concepts of physics that impact individuals and society on a daily basis; physical quantities, electricity, magnetism, light and sound, with a focus on applying the information learned to everyday life.

9. **Course Objective** *(s)*

   After successful completion of this course, students should be able to
   9.1   to describe basic natural phenomena and physical ideas. No previous background in high school physics is required, but basic knowledge of algebra and trigonometry is essential.

10. Course Outline

Week	Topic	Hour			Instructor
		Lecture	**Lab**	**Self-Study**	
1	The systems of Units: the Metric system, the CGS system, the MKS system, the MKSA system and the Standard International System Unit conversions	4	0	8	Wannapong
2	Significant figures: Measurements and error; Calculations involving the significant figures; Precision vs accuracy	4	0	8	Wannapong
3	Scalar and Vector quantities: Addition and subtraction of vectors; some important applications in everyday life	4	0	8	Wannapong
4	Linear Motion: the concept of displacement, distance, speed, velocity, acceleration; the graphic methods for solving linear motion problems	4	0	8	Wannapong
5	The Laws of Motion: the first, second, and third Newtonian laws of motion; Mass and inertial; the forces and acceleration; tension in the strings; systems of two or more masses; the apparent weight	4	0	8	Wannapong
6	Review session and midterm exam	4	0	8	Wannapong
7	The inclined planes (with no friction); frictions; Inclined planes with frictions	4	0	8	Wannapong
8	The equilibrium; the center of mass/ center of gravity	4	0	8	Wannapong

9-11	Free falling motion; Motion under the influence of earth's gravity; work and energy; the work-energy theorem; momentum and collisions; impulse and impulsive force	4	0	8	Wannapong
	Total	44	0	88	Wannapong
Final Examination					

11. Teaching Method *(s)*
11.1 Lecture
11.2 Classroom discussion

12. Teaching Media
12.1 Transparencies
12.2 Handouts

13. Measurement and evaluation of student achievement
Student achievement is measured and evaluated by

13.1 the ability to describe basic natural phenomena and physical ideas. No previous background in high school physics is required, but basic knowledge of algebra and trigonometry is essential.

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

Students must have attended at least 80% of the total class hours of this course.

MUIC standard grading criteria: 90% and above is grade A

Ratio of mark

Component	%
1. Midterm exam	50
2. Final exam	50
Total	100

Final letter grades will be assigned on a curve

14. Course evaluation

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

15. Reference *(s)*
    TBA

16. Instructor *(s)*
    16.1 Wannapong Triampo

17. Course Coordinator
    Assistant Professor Srisuda Varamit