

Tamkang University Academic Year 110, 2nd Semester Course Syllabus

Course Title	REVIEW ON PHOTONICS	Instructor	HSI-AN PAN
Course Class	TSPCB1A DEPARTMENT OF PHYSICS (SECTION OF ELECTRO-OPTICAL PHYSICS), 1A	Details	<ul style="list-style-type: none"> ◆ General Course ◆ Selective ◆ One Semester
Relevance to SDGs	SDG4 Quality education		
Departmental Aim of Education			
<p>I. Conveying professional knowledge: Teach the students to learn the core knowledge of physics, to obtain the basic skills needed for physics research, and to apply the professional knowledge to physics related technologies.</p> <p>II. Analyzing and solving problems: Guide the students to analyze problems, and to acquire the mathematical ability to quantify conceptual models and also the capability needed to think and to innovate in solving various scientific and engineering problems.</p> <p>III. Training for experimental techniques: Teach the students on how to carry out and to verify various experiments, and at the same time to have the mentality of working cautiously and the awareness in operating safely.</p> <p>IV. Expressing personal characteristics: Help the students to use their personal characteristics, like resolution, sincerity, and concentration, plus their professional skills to gain recognition among the executives and their peers.</p> <p>V. Cultivating team spirit: Train the students to have the organizational ability and the communicational skills to let them have the adaptability to integrate into a professional team, and to obtain the ability to bring out and to put to use the strength of the team to solve professional problems.</p> <p>VI. Building international views: Comply to the trends of globalization to build an international learning environment and opportunities in order to educate the students to continue in their self-advancements, to absorb new worldwide knowledge, and to become a professional with international views in their future perspective careers.</p>			
Subject Departmental core competences			
<p>B. To understand the overall features of specific fields of physics.(ratio:50.00)</p> <p>G. To comprehend the trend of technological development and to acquire the knowledge and skills of other fields needed in their professional career.(ratio:50.00)</p>			
Subject Schoolwide essential virtues			
<p>2. Information literacy. (ratio:50.00)</p> <p>5. Independent thinking. (ratio:50.00)</p>			

Course Introduction	The course will introduce the basics of Optics and the technology of Opto-electronics. Career development discussions will also be carried out during the course in order to encourage students to start planning their career path as early as possible.
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The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

- I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.
- II. Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.
- III. Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	Understand the basics of Optics and the technology of Opto-electronics.	Cognitive

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	BG	25	Lecture, Discussion	Testing, Discussion(including classroom and online), Report(including oral and written), Activity Participation

Course Schedule

Week	Date	Course Contents	Note
1	111/02/21 ~ 111/02/25	Introduction of the course 課程介紹	
2	111/02/28 ~ 111/03/04	History of light 光的歷史	
3	111/03/07 ~ 111/03/11	Geometrical and wave optics 幾何與波動光學	
4	111/03/14 ~ 111/03/18	Geometrical and wave optics 幾何與波動光學	

5	111/03/21~ 111/03/25	Career development discussion 光電、科技、及物理職涯 發展討論	
6	111/03/28~ 111/04/01	Light sources and emitting 光源與發光原理 & Chromatics 色彩學	
7	111/04/04~ 111/04/08	清明節假(放假一天)	
8	111/04/11~ 111/04/15	Career development discussion 光電、科技、及物理職涯 發展討論	
9	111/04/18~ 111/04/22	Career development discussion 光電、科技、及物理職涯 發展討論	
10	111/04/25~ 111/04/29	Midterm Exam Week	
11	111/05/02~ 111/05/06	Optical fiber 光纖	
12	111/05/09~ 111/05/13	Semiconductor and LED 半導體與發光二極體	
13	111/05/16~ 111/05/20	Laser 雷射原理	
14	111/05/23~ 111/05/27	Student presentations 學生口頭報告	
15	111/05/30~ 111/06/03	Student presentations 學生口頭報告	
16	111/06/06~ 111/06/10	Career development discussion 光電、科技、及物理職涯 發展討論	
17	111/06/13~ 111/06/17	Career development discussion 光電、科技、及物理職涯 發展討論	
18	111/06/20~ 111/06/24	Final Exam Week	
Requirement			
Teaching Facility	Computer, Projector		
Textbooks and Teaching Materials	None.		
References	None.		
Number of Assignment(s)	(Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : % ◆ Mark of Usual : % ◆ Midterm Exam : 35.0 % ◆ Final Exam : 35.0 % ◆ Other 〈participation/report〉 : 30.0 %		

Note	<p>This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php .</p> <p>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</p>
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