



School of Bioinnovation and Bio-based Product Intelligence (SCIN)
 Program in Bioinnovation (International Program, Multidisciplinary Program)
 Course: SCIN 494 Senior Project in Bioinnovation II

Degree Bachelor Master Doctoral
 Faculty of Science

TQF 3

Course Code and Course Title	English: SCIN 494 Senior Project in Bioinnovation II Thai: วนทว ๔๙๔ โครงการศึกษาระดับพิเศษ ๒
Number of Credits	3 (0-9-3)
Curriculum and Course Type	Program of Study Bachelor's Degree Program in Science and Technology (International Program, Multidisciplinary Program) Course Type Specific Course
Course Coordinator	Tatpong Tulyananda, Ph.D Address: School of Bioinnovation & Bio-based Product Intelligence, Faculty of Science, Mahidol University, Salaya email: tatpong.tul@mahidol.edu
Semester/Year of Study	First semester, 4 th Year
Prerequisite	SCIN 394
Co-requisite	None
Day/Time/Study Site Location	TBA, Faculty of Science, Mahidol University
Date of Latest Revision	1 July 2023

Course Learning Outcomes (CLOs)

After successful completion of this course, students are able to

- CLO 1 Can design and conduct innovative research project
- CLO 2 Can analyze research instrumental and key technology
- CLO 3 Be able to collect data and analysis
- CLO 4 Discuss and evaluate research results
- CLO 5 Can prepare a proper research presentation as well as a research article draft

Objectives of Development / Revision

First revision

Course Description

Planning and proceeding for a case study of research in bioinnovation; research instrumental analysis and key technology; data collection and analysis; results evaluation and discussion; research writing; research presentation

Credit Hours / Trimester

Theory (Hours)	Addition Class (Hours)	Laboratory/Field trip/ Internship (Hours)	Self-study (Hours)
-	-	135 Hours/Semester (9 Hours x 15 Weeks)	45 Hours/Semester (3 Hours x 15 Weeks)



Number of Hours per Week for Individual Advice

By appointment at SC1-308 Faculty of Science, Mahidol University, Salaya Campus

Evaluation of the CLOs

Course Learning Outcomes	Measurement Method			Weight (%)
	Class Attendance	Written Exam	Research Project	
CLO1 Can design and conduct innovative research project	-	-	5%	5%
CLO2 Can analyze research instrumental and key technology	-	-	5%	5%
CLO3 Be able to collect data and analysis	-	-	25%	25%
CLO4 Discuss and evaluate research results	-	-	35%	35%
CLO5 Can prepare a proper research presentation as well as a research article draft	-	-	30%	30%
Total	-	-	100%	100%

Measurement and evaluation

After completion of the evaluation process each student is assigned a criterion-referenced grade (as shown in the table below). Evaluation and achievement will be justifying according to Faculty and University code, conducted by grading system of A, B+, B, C+, C, D and F. To pass this course, student must earn a grade of a least D.

Total Percentage of Evaluation	Below 50	50-54	55-59	60-64	65-69	70-74	75-79	80-100
Grade	F	D	D+	C	C+	B	B+	A



School of Bioinnovation and Bio-based Product Intelligence (SCIN)
 Program in Bioinnovation (International Program, Multidisciplinary Program)
 Course: SCIN 494 Senior Project in Bioinnovation II

Degree Bachelor Master Doctoral
 Faculty of Science

Week	Date	Topic	Hour		Instructor
			Lecture	Lab	
1	TBA	Introduction, getting ready for research project	0	9	Tatpong Tulyananda
2	TBA	Senior project finalization	0	9	Tatpong Tulyananda
3	TBA	Conducting experiment	0	9	
4	TBA		0	9	
5	TBA		0	9	
6	TBA		0	9	
7	TBA		0	9	
8	TBA	Progress update 1	0	9	Tatpong Tulyananda
Midterm examination (no exam)					
9	TBA	Conducting experiment	0	9	
10	TBA		0	9	
11	TBA		0	9	
12	TBA	Progress update 2, final discussion	0	9	Tatpong Tulyananda
13	TBA	Conducting experiment	0	9	
14	TBA		0	9	
15	TBA		0	9	
Senior project presentation					