



School of Bioinnovation and Bio-based Product Intelligence (SCIN)
Program in Bioinnovation (International Program, Multidisciplinary Program)
Course: SCIN 394 Senior Project in Bioinnovation I

Degree Bachelor Master Doctoral
Faculty of Science

Course Code and Course Title	English: SCIN 394 Senior Project in Bioinnovation I Thai: วิชา ๓๙๔ โครงการศึกษาระดับพิเศษ ๑
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	Second semester / 3 rd Year
Prerequisite	None
Co-requisite	None
Day/Time/Study Site Location	Friday 9.30am-10.30pm: Onsite/Google Meet
Date of Latest Revision	19 Dec 2022

Course Learning Outcomes (CLOs)

After successful completion of this course, students are able to

- CLO 1 Learn philosophy and concepts of research and the creation of research innovation.
- CLO 2 Understand methodology, type of research, research procedures, research instruments, research question, background and hypothesis.
- CLO 3 Be able to plan research and research write proposal.
- CLO 4 Understand risk assessment and risk management for research.
- CLO 5 Can conduct research.
- CLO 6 Can conclude and answer research question. Be able to do scientific research presentation.

Course Description

Philosophy and concepts of research and the creation of research innovation; methodology; type of research; research procedures; research instruments; research question; background and hypothesis; research planning; risk assessment and risk management for research; research proposal writing; scientific 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 Faculty of Science, Mahidol University, Salaya Campus or online

Evaluation of the CLOs

Course Learning Outcomes	Measurement Method		
	Class Attendance, Participation and Behavior in Class	Written Exam	Final presentation
CLO1 Learn philosophy and concepts of research and the creation of research innovation	-	-	5%
CLO2 Understand methodology, type of research, research procedures, research instruments, research question, background and hypothesis	-	-	5%
CLO3 Be able to plan research and research write proposal	-	-	20%
CLO4 Understand risk assessment and risk management for research	10%	-	-
CLO5 Can conduct research	20%	-	-
CLO6 Can conclude and answer research question. Be able to do scientific research presentation	20%	-	10%
Total	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 394 Senior Project in Bioinnovation I

Degree Bachelor Master Doctoral
 Faculty of Science

SCIN 394 Senior Project in Bioinnovation I 3 (0-9-3)

Week	Note	Topic	Hour		Instructor
			Lecture	Lab	
1	-	Introduction	0	9	Dr. Tatpong Tulyananda
2	-	Philosophy and concept of research	0	9	Dr. Tatpong Tulyananda/TBA
3	-	Research proposal planning	0	9	
4	-	Research idea discussion I	0	9	
5	-	Research idea discussion II	0	9	
6	-	Lab exploration	0	9	
7	-		0	9	
8	-		0	9	
Midterm examination (no exam)					
9	-	Lab exploration	0	9	TBA
10	-		0	9	
11	-		0	9	
12	-		0	9	
13	-		0	9	
14	-		0	9	
15	-	Final Presentation	0	9	Dr. Tatpong Tulyananda
Final examination (no exam)					