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Course Syllabus

SCPS 695: Research methodology, management, communication, and grantsmanship

Credit 2(2-0-4)

Academic Year 2/2024

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Course Coordinator: Associate Professor Dr. Arthit Chairoungdua

Department of Physiology (Room Pr.414)

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Course Schedule: Jan 13, 2025 - May 1, 2025

Curriculum: Doctor of Philosophy Program in Physiology (Required course)

Semester Offering: Second semester

Prerequisite: None

Course Description:

Research methodology, management skills in research, scientific communication skills, guidelines and techniques for scientific presentations, key factors for successful in scientific communication, guidelines and techniques for grant proposals writing and pitching.

Alignment of Expected Learning Outcome (ELOs) of the program with specific and generic learning outcomes for SCPS695

ELOs		Expected Skills
ELO1	Demonstrate ethics, morality and professional ethics	K2. Human and animal rights K3. Research ethics
ELO2	Integrate knowledge in physiology and related fields for knowledge transfer/innovation and problem solving	GS5. English Writing GS6. Critical thinking
ELO3	Create research in physiology and related fields to produce international publications, patents or innovations	GS5. English Writing GS7. Critical and analytical thinking GS8. Scientific literature search K6. Principles of research methodology
ELO4	Demonstrate responsibility, leadership, and the ability to work with the others	GS1. Working group
ELO5	Deliver specific and generalizable knowledge effectively by using various means of communication	GS5. English Writing GS9. English Speaking GS10. Communication skills K12. Public speaking

Course Learning Outcome (CLOs)

CLO 1: Demonstrate ethics and professional ethics related to scientific communication
CLO 2: Criticize and discuss the key steps for writing a standout proposal in the context of physiology or related fields
CLO 3: Criticize and discuss the key factors for successful in grant proposal writing
CLO 4: Discuss and demonstrate the key steps for scientific communication
CLO 5: Discuss advanced methodology for research on physiology and related fields

Constructive Alignment of CLOs and Program's ELOs

CLO	ELO	SS/GS/K	T/L approach	Assessment
CLO 1	1	K2. Human and animal rights K3. Research ethics	Reading assignment, Class discussion	Rubric for class participation
CLO 2	2, 3, 5	GS5. English Writing GS6. Critical thinking GS7. Critical and analytical thinking GS8. Scientific literature search	Lecture and class discussion	Rubric for class participation
CLO 3	2, 3, 5	GS5. English Writing GS6. Critical thinking GS7. Critical and analytical thinking GS8. Scientific literature search	Activity assignment and class discussion	Rubric for class participation and activity assignment
CLO 4	2, 3, 4, 5	GS5. English Writing GS6. Critical thinking GS7. Critical and analytical thinking GS8. Scientific literature search GS9. English Speaking GS10. Communication skills K12. Public speaking	Activity assignment and class discussion	Rubric for class participation and activity assignment
CLO 5	3	K6. Principles of research methodology	Lecture and class discussion	Rubric for class participation

Course Assignments:
- Reading assignments before the class
- Discussion topics, case study, original/research articles, review articles
- Class or activity assignments

Assessment evaluation:
Formative evaluation
- Feedback after class activity

Summative evaluation
- Class attendance and participation 40%
- Class assignments (presentation, writing) 60%

Grading
Students will be graded (A, B+, B, C+) based on student's score from the whole course. To pass this course, students must receive score equal or above 65%.

z	Score
A	$\geq$85
B+	$\geq$75
B	$\geq$65
C+	$\geq$55
C	<55

References:
- Assigned reading materials

Appeal Procedure:
Students can appeal about the assessment, grade or any issues directly to the instructors and/or course coordinator by direct contact, email or telephone.

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Credit 2(2-0-4)
Department of Physiology, Faculty of Science, Mahidol University
Room: Pr 408
Course coordinator: Arthit Chairoungdua, Ph.D.

	Date	Time	Topics	Instructors
	Jan 13	08:30-09:00	Course orientation	Arthit
1	Jan 13	09:00-11:00	Fundamental and ethical guideline of scientific communication	Nattapon
2	Jan 20	09:00-11:00	The key components of proposal writing	Sunhapas
3	Jan 27	09:00-11:00	**Workshop 1**: Steps for writing a standout proposal	Narattaphol
4	Feb 3	09:00-11:00	Expressing ideas through graphical illustration	Tai
5	Feb 10	09:00-10:00	Steps for professional oral presentation	Tai/Panan
		10:00-11:00	How to use Turnitin/Endnote	Benjamin
6	Feb 17	09:00-11:00	**Workshop 2**: Oral presentation 1	Panan/Tai
7	Feb 24	09:00-11:00	**Workshop 3**: Oral presentation 2	Panan/Tai
8	March 3	13:00-15:00	Steps for professional poster presentation	Nittaya/Arthit
9	March 10	13.00-15:00	**Workshop 4**: Poster presentation	Nittaya/Arthit
10	March 17	13:00-15:00	What do you have to know before writing proposal for grant hunting?	Chatchai (RA)
11	March 31	09:00-11:00	Guidelines on presenting proposal to venture capitalists	Kanit
12	April 21	08:30-10:30	**Workshop 5**: Business pitching	Kanit
		10:30-11:00	Meeting with granting agency	Sunhapas
13	April 24	09:00-11:00	International grant proposal	Narattaphol
14	April 28	09:00-11:00	**Special lecture**: Omics technology for future physiology research	Nattawadee (BC)
15	May 1	09:00-11:00	Smarter work management	Nuttawee (BT)
16	May 1	13:00-15:00	Grant proposal feedback	Sunhapas

Rubric for Class Participation

	Poor (1)	Fair (2)	Good (3)	Excellent (4)	Score
Preparation (20%)	**Almost never** prepared for class	**Rarely** prepared for class	**Often** prepared for class	**Well** prepared for class	
Participation (40%)	**Almost no** contribution to the class by offering ideas and/or asks questions	**Rarely** contributes to the class by offering ideas and/or asks questions	**Often** contributes to the class by offering ideas and/or asks questions	**Proactive** contribution to the class by offering ideas and/or asks questions	
Listening (20%)	**Almost never** listen carefully and respectfully	Listen carefully and respectfully **sometimes**	Listen carefully and respectfully **most of the time**	Listen carefully and respectfully **all the time**	
Question Handling (20%)	**Almost never** responses to questions	**Inappropriate/ ineffective** in responses	**Appropriate & quite effective** responses to questions	**Effective** responses with integrative view	
Total score……………………… (100%)					

Rubric for Presentation

	Poor (1)	Fair (2)	Good (3)	Excellent (4)	Score
Slide Design (20%)	- Color, text types and sizes are mostly inappropriate	- Some inappropriate color, text types and sizes	- Color, text types and sizes are mostly appropriate	- Well-designed color, text types and size	
Organization (30%)	- The flow was unclear and confusing - Insufficient information	- Some parts of the flow were confusing - Contain most of the information	- The flow was clear, concise and easy to follow - Contain all essential information	- Well-organized flow of presentation - Fully engage with all information	
Language (10%)	- Incorrect and inappropriate vocabulary and grammar	- Some incorrect and inappropriate vocabulary and grammar	- Mostly used correct and appropriate vocabulary and grammar	- Minimal incorrect or inappropriate vocabulary and grammar	
Delivery (30%)	- Inappropriate speed and volume of speaking	- Irregular speed with uneven volume of speaking	- Appropriate speed and volume of speaking	- Speak with fluctuation in volume and emphasize key points	
Gestures (10%)	- No eye contacts - Inappropriate gestures distracting the presentation	- Occasionally eye contact - Some appropriate gestures supporting the presentation	- Eye contact in important points - Gestures support overall presentation	- Properly engage with audience - Gestures contribute nicely to the presentation	
				Total score………………………… (100%)	