15th APEC Cross Mentoring Research Activity
Research Syllabus

Ⅰ. Mentor

1. Personal Information

Name	Melissa Stanfield
Mobile Number	+61409188000
School or Institute	University of Tasmania
E-mail	melissa.stanfield@utas.edu.au
Major	Chemistry

2. Education

	Year	Name of University	Major	Degree	Nation
Bachelor's degree	2017	Deakin University	Chemistry	Bachelor of Science	Australia
Master's degree	2018	Deakin University	Chemistry	Honours	Australia
Doctorate	2022	Deakin University	Chemistry	Doctor of Philosophy	Australia
Dissertation	Multilayer Interfaces for Carbon Fibre Composites				

3. Experiences

Duration	Position	Institute or University
2022-Present	Research Fellow	University of Tasmania, Australia

2016-2017	Research Intern	CSIRO, Australia
2018-2022	Teaching assistant	Deakin University, Australia

4. Honors and Awards

Year	Title	Remarks
2023	Fellowship to attend PPC18	$2000AUD to attend international conference
2021	ASC (American Society of Composites) PhD candidate Award	($1000 USD) awarded to PhD candidate for their research
2018	Capstone Editing Honour's Student Scholarship	($3000 AUD) only recipient

5. Professional Societies

Ⅱ. Syllabus

Course Title	**Green and sustainable chemistry: Bio-based plastic networks**
Criteria	[ ] Biology & Applied Biology
	[X] Chemistry
	[ ] Energy & Environmental Science
	[ ] Integrated Science
	[ ] Medicinal Science
	[ ] Nano Science
	[ ] Physics
	[ ] Others ( )

1. Course Title & Criteria: **Green and sustainable chemistry: Bio-based plastic networks**

2. Course Objectives & Description

After this course, students will be able to:

The goal of this course is to provide students with a foundation of knowledge of green and sustainable chemistry including materials chemistry and polymer science. This course will expose students to current research in the green chemistry space. The students will learn how chem

3. Required Textbook or papers: Provided by the mentor

4. Final Outcome

Quiz	[ ] Due date:
Research plan	[X] Due date: Week 3
Final Report	[X] Due date: Week 10
Research Article for APEC Youth Scientist Journal	[X] Due date: Week 12

5. Schedule

Week	Topics and Activities	Assignments & Other Instructions
Week 1	Introduction to the course: Basics in green chemistry	
Week 2	Fundamentals of Green Chemistry: Focus on polymers	
Week 3	Exploring sustainable chemistry: focus on polymers Guide mentees to write a research plan	Research plan
Week 4	Chemistry of polymer synthesis	
Week 5	Pathways for polymer growth: (ATRP, Click chemistry etc)	
Week 6	Applications of polymers: material properties	
Week 7	Bio-based chemistry alternatives: Guide mentees to write research article	
Week 8	Examining current bio-based chemistries in literature	
Week 9	Guide mentees to write research article	
Week 10	Guide mentees to write research article	Final Report
Week 11	Guide mentees to write research article	
Week 12	Guide mentees to write research article	Research Article for APEC Youth Scientist Journal