

# AMGS Cross Mentoring Research Activity 2017-2018

## - Research Syllabus



### I . Mentor

#### 1. Personal Information

Name	NGUYEN Trinh Hoang Anh
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School or Institute	University of Science and Technology of Hanoi
E-mail	hoanganhelec@gmail.com
Major	Energy Science and Modelling

#### 2. Education

	Year	Name of University	Major	Degree	Nation
Bachelor's degree	2005	Hanoi University of Technology	Electric Engineering	Bachelor of Science	Vietnam
Master's degree	2010	University of Flensburg	Energy and Environment Management	Master of Engineering	Germany
Doctorate	2015	University of Paris Diderot	Energy Economics	Doctor of Philosophy	France
Dissertation	Sustainable development in Electricity Sector: A transition to low carbon economy in Vietnam				

#### 3. Experiences

Duration	Position	Institute or University
01.2006 - 12.2008	Lecturer / researcher	Electric Power University - Vietnam
03.2009 – 07.2009	Teaching assistant	University of Flensburg – Germany
01.2013 –	Teaching/research assistant	University of Science and Technology of

12.2015		Hanoi -Vietnam International Center for Environment and Development - France
01.2016 - present	Lecturer / researcher	University of Science and Technology of Hanoi (USTH) -Vietnam

#### 4. Honors and Awards

Year	Title	Remarks
2016-2017	Fellow in Sustainable Energy for ASEAN	ASEAN US Science and Technology Fellowship
2005	Certificate of merit for the first-rank study achievements	Hanoi University of Science and Technology
2005	Industrial Grants for Excellent student research	Hanoi University of Science and Technology
1997, 1999, 2000	Second Prize, Fourth Prize, Thirst Prize in the National Olympic of Physics	Vietnam

#### 5. Professional Societies

1. The European Association of Environmental and Resource Economists (EAERE): member
2. Vietnam Sustainable Energy Alliance (VSEA): sustainable energy advisor
3. GANES - German Asian Alumni Network for Energy and Sustainability: committee member
4. Association of Energy Economist of France: member

## II . Syllabus

### 1. Course Title & Criteria

Course Title	<b>Solar PV systems: design and assessment</b>
Criteria	[ ] Biology & Applied Biology
	[ ] Chemistry
	[X] Energy & Environmental Science
	[ ] Integrated Science

	<input type="checkbox"/> Medicinal Science
	<input type="checkbox"/> Nano Science
	<input type="checkbox"/> Physics
	<input type="checkbox"/> Others

## 2. Course Objectives & Description

At the end of the course, students will be able to

- Describe the various methods of converting solar energy into electricity and heat
- Describe and design solar PV systems for household application
- Implement technical and socio-economic assessment of a solar (and renewable energy) projects
- Present their own projects to the public and publish it on the journal

## 3. Required Textbook or papers:

- Rik DeGunther, Solar Power Your Home For Dummies, Hoboken, N.J., Wiley, 2008
- International Energy Agency, Technology Roadmap Solar Photovoltaic Energy, 2014

## 4. Final Outcome

Mid-term Report	<input type="checkbox"/> Due date:
Final Report	<input type="checkbox"/> Due date:
Research Article for APEC Youth Scientist Journal	<input type="checkbox"/> Due date:

## 5. Schedule

Week	Date	Topics and Activities	Assignments & Other Instructions
Week 1		Introduction to Renewable Energies	
Week 2		Overview of solar energy technologies and its application	
Week 3		Electricity from solar energy	
Week 4		Solar cooling technologies	
Week 5		Solar technology trends and innovations	

Week 6		Solar energy systems for households	
Week 7		Designing a simple solar system without battery	
Week 8		Designing a simple solar system with battery	
Week 9		HOMER: A computer tool to simulate a solar PV system	
Week 10		Environmental assessment of solar energy projects	
Week 11		Socio-economic assessment of solar energy projects	
Week 12		Life-cycle assessment of a renewable energy project	
Week 13		Scientific writing and communication skills: application to a renewable energy project	
Week 14		Research Article for APEC Youth Scientist Journal	
Week 15		Research Article for APEC Youth Scientist Journal	
	March	Mentee should submit their research article to AMGS admin team	