Course Outline

1. Course Code and Title

In Thai วทศน ๑๑๐ เคมีในชีวิตประจำวัน

In English SCGI 110 Chemistry in Everyday Life

2. Number of Credits 3 (3 - 0 - 6)

(Theory 3 hrs. Practice 0 hrs. Self-study 6 hrs. / week)

3. Course Schedule **Mondays 15.30-16.20**

Tuesdays 10.30-12.20

4. Course Coordinator and Instructor

4.1 Course Coordinator

Assoc. Prof. Dr.Panya Sunintaboon
Department of Chemistry, Faculty of Science
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4.2 Instructors

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2) Assoc.Prof. Dr.Taweechai Amornsakchai **(TA)**
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3) Assoc. Prof. Dr.Anyarat Watthanaphanit **(AW)**
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4) Assist. Prof. Dr.Thanchanok Ratvijitvech **(TR)**
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5) Instructors from Department of Chemistry, Faculty of Science

5. Study Site Location Salaya Campus, Faculty of Science

6. Lesson Plan

Date	Topic/Details	Number of hours		Teaching activities/ media	Instructor(s)
		Classroom sessions	Practice sessions		
Aug 5	**Course orientation**	2			PS
Aug 18, 19	**Acid-base:** Acid and base, pH, relationship between molecular structure and acidity or basicity, indicators, acid rain	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	TR
Aug 25, 26	**Nutritions:** Fats and oils, carbohydrates, proteins, vitamins and minerals, energy from food	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	TR
Sep 1, 2	**Polymers:** Properties of polymers, natural and synthetic polymers, polymer recycling	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	TR
Sep 8, 9	**Air we breathe and air pollution**: chemical properties of air and air pollution	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	PS
Sep 15, 16	**Water for life:** Properties of water, aqueous solutions, ionic and covalent compounds	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	PS
Sep 22, 23	**Water for life (cont.):** Concentration, water treatment and purification **& Class review** for Midterm examination	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media	PS

Date	Topic/Details	Number of hours		Teaching activities/ media	Instructor(s)
		Classroom sessions	Practice sessions		
				PowerPoint slides	
To be announced	**Midterm examination**	3	0	-	PS & TR
Oct 14,20	**Nuclear energy:** Balancing nuclear reaction, radioactive nuclear decay, fission nuclear for electricity, nuclear fusion, radioactive isotopes, biological effects of radiation	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	TA
Oct 21,27	**Energy from electron transfer:** Batteries and galvanic cells, fuel cells, photovoltaic, energy issues and policies	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	TA
Oct 28, Nov 3	**Food and cooking: Chemicals in kitchen, chemical reactions related to cooking processes**	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	TA
Nov 4,10	**Ozone depletion:** Chemical reaction, ozone production, photochemistry of molecules, atomic number and isotopes, basic spectroscopic chemistry	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	AW
Nov 11,17	**Global warming:** The Earth's energy balance, greenhouse effect, stoichiometry, chemical energy	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning Media PowerPoint slides	AW
Nov 18,24	**Energy from combustion:** Fossil fuels, chemical energy changes, some alternative energy sources & **Class review** for Final	3	0	Teaching activities - Lecture - Individual assignment - Discussion - Cooperative Learning	AW

Date	Topic/Details	Number of hours		Teaching activities/ media	Instructor(s)
		Classroom sessions	Prac-tice ses-sions		
	examination			Media PowerPoint slides	
To be an-nounced	**Final Examination**	3	0	-	TA & AW
	Total (excluding exam weeks)	**38**	**0**		

7. Evaluation and Grading

(1) Evaluation

Individual/Group assignments	50
Midterm examination	20
Final examination	20
Attendance	10
Total	100

(2) **Grading**

Score (percentage)	Symbols
80–100	A
75-79	B+
65–74	B
55–64	C+
45-54	C
35-44	D+
30-34	D
≤ 29	F

To pass this course, student must earn a grade of D (minimum)

(3) **Re-examination** (if the course allows any)

None

8. Program Administration

Salaya Campus

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Phayathai Campus

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Tel: 02-2015050-54

9. Teaching Resources

- Required Texts

1) Catherine H. Middlecamp, et al. Chemistry in Context: Applying Chemistry to Society. 7th ed., New York: McGraw-Hill; 2012.
2) Chang, R. Chemistry 9th, 10th, 11th ed. (International ed.). USA: McGraw-Hill, Inc.; 2007.

3) Olmsted, J. A. and Williams, G. W. *Chemistry*. 4th ed. USA: John Wiley & Sons, Inc.; 2005.
4) McMurry, J. and Fay, R.C. *Chemistry*. 4th ed. USA: Prentice Hall; 2004.
5) Oxtoby, D. W.; Gillis, H. P. and Campoin, A. *Principles of Modern Chemistry*. 7th ed. USA: Thomson Brooks; 2012.
6) Hill, J.W. and Petrucci, R.H. General Chemistry, An Integrated Approach. 3rd edition. USA: Prentice Hall; 2002.
7) Atkin, P.W. Atkin's Molecules. 2nd edition. UK: Cambridge University Press. 2003. Middle- camp, C.H. et al. Chemistry in Context: Applying Chemistry to Society. 7th edition. USA: McGraw-Hill. 2012.

- Suggested Materials

1) All teaching documents
2) Books in General Chemistry
3) Websites; http://www.rsc.org/