

Course Application for E-Cube-I Scholarship 2021

Course name	Ph.D. Program in Applied Chemistry										
Course Details	<p>The Doctor of Philosophy in Applied Chemistry is a research-intensive graduate program focused on intellectual development and creation of novel technology or innovation for sustainable change in three fields of specialization:</p> <p>(1) Materials Chemistry and Nanotechnology:</p> <ul style="list-style-type: none"> - Functional Polymers, Polymerization in aqueous dispersed systems - Polymer Microcapsules and Microspheres, Biopolymer - Photoelectrocatalysis, Thin-film fabrication, Energy and Environmental application - Photocatalytic nanomaterials - Theoretical and Computational Chemistry, Heterogeneous Catalysis <p>(2) Analytical Chemistry and Environment:</p> <ul style="list-style-type: none"> - Chemical sensor, Biosensor, Electrochemistry, Nanomaterials - Wastewater Treatment - Sample preparation, Environmental and Analytical Chemistry, Chromatography <p>(3) Biochemicals:</p> <ul style="list-style-type: none"> - Plant biochemistry, Bio-active compounds, Protein structure , and functional - Biochemistry, Proteomics and Protein mechanism - Fluorescence sensors, Nanomaterials, and Natural product <p>Duration of Course: 3 years</p> <p>Language of Instruction: Thai/English</p> <p>Course Content</p> <p>Total of Credit: 48 Credit</p> <p>Type 1.1 (Doctoral Dissertation only):</p> <table style="width: 100%;"> <tr> <td style="text-align: right;">Doctoral Dissertation</td><td style="text-align: right;">48 credit</td></tr> </table> <p>Type 2.1(Doctoral Dissertation and coursework):</p> <table style="width: 100%;"> <tr> <td style="text-align: right;">Compulsory Course</td><td style="text-align: right;">9 credit</td></tr> <tr> <td style="text-align: right;">Elective Courses</td><td style="text-align: right;">3 credit</td></tr> <tr> <td style="text-align: right;">Doctoral Dissertation</td><td style="text-align: right;">36 credit</td></tr> <tr> <td style="text-align: right;">Total</td><td style="text-align: right;">48 credit</td></tr> </table>	Doctoral Dissertation	48 credit	Compulsory Course	9 credit	Elective Courses	3 credit	Doctoral Dissertation	36 credit	Total	48 credit
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Program Structure

1. Compulsory Course (9 credit)

Type 1.1 5 Credit*

Type 2.1 9 Credit

09-211-601	Research Methodology in Applied Chemistry*	3(3-0-6)
09-211-602	Advanced Instruments for Analysis	4(2-6-6)
09-211-603	Seminar 1*	1(0-3-1)
09-211-701	Seminar 2*	1(0-3-1)

* **Remarks:** Type 1.1 Select those courses, the academic performance is measured by grades of Satisfactory or Unsatisfactory (S or U)

2. Elective Courses (3 credit)

Type 2.1 select one of the following courses

2.1 Materials Chemistry and Nanotechnology

09-212-601	Polymer Synthesis and Characterizations	3(3-0-6)
09-212-603	Semiconductor and Photocatalysis	3(3-0-6)
09-212-606	Polymerization in Dispersed Systems	3(3-0-6)
09-212-607	Nanoscience and Nanotechnology	3(3-0-6)
09-212-701	Advanced Organic Materials	3(3-0-6)
09-212-702	Thin Film Technology	3(3-0-6)
09-212-703	Biopolymer	3(3-0-6)
09-212-707	Computational Chemistry	3(2-3-5)

2.2 Environmental and Analytical Chemistry

09-213-601	Trace Analysis	3(3-0-6)
09-213-602	Analytical Method Validation	3(3-0-6)
09-213-603	Waste Reduction and Recycling Technology	3(3-0-6)
09-213-605	Applications of Separation Technique	3(3-0-6)
09-213-701	Green Chemistry	3(1-6-4)
09-213-702	Anaerobic Biotechnology for Bioenergy Production	3(3-0-6)
09-213-703	Biosensor and Applications	3(3-0-6)
09-213-704	Selected Topics in Environmental and Analytical Chemistry	3(3-0-6)

2.3 Biochemicals

09-214-601	Enzymology	3(3-0-6)
09-214-602	Bioorganic Chemistry	3(3-0-6)
09-214-603	Cosmetic Technology	3(3-0-6)
09-214-701	Frontiers in Medicinal Chemistry	3(3-0-6)

	09-214-702 Nutraceutical 3(3-0-6) 09-214-703 Selected Topics in Biochemistry 3(3-0-6) 3. Doctoral Dissertation 09-219-801 Doctoral Dissertation for Type 1.1 48(0-0-144) 09-219-802 Doctoral Dissertation for Type 2.1 36(0-0-108)
Required-number of Undergraduate-Student	-
Required-number of Graduate-Student	5
Course conditions	-
Applicant qualifications (Specific qualifications)	<ol style="list-style-type: none"> 1. To hold a Bachelor's degree in Chemistry or related from an accredited institution comparable to the degree offered at RMUTT, or expected to acquire such a degree before the RMUTT enrollment date. 2. To have an excellent academic record from reputable universities. 3. To have the aim, satisfactory knowledge, and research skill to work in the research field of this program 4. Application documents <ul style="list-style-type: none"> - Resume - Original bachelor's degree and master's degree academic transcripts in English (Include date of issue) or their photocopies verified and bears FRESH school stamp by the graduated university or by a notary public. The transcript must contain all the courses studied each year, including the marks or grades for each course and GPA if the applicants are still studying for a master's degree, providing a temporary academic transcript. - Briefly the thesis in English and list of publications (if available). - Research proposal (1-2 pages in length): A detail of the research plan related to the program's interesting research fields and topics.
Contact person	Name: Assoc. Prof. Dr.Amorn Chaiyasat Phone/ Mobile Number:+66 98 826 3085 E-mail: a_chaiyasat@mail.rmutt.ac.th https://www.facebook.com/AppChem