Master of Science Program in **Biochemistry**

Research Focus

- Medical Biochemistry and Molecular Biology
- Extraction and Bioassay of Thai Medicinal Plants Related to Human Diseases, including Osteoarthritis, Cancers, Skin Diseases, Alzheimer Disease, and Neuronal Abnormalities
- Recombinant Protein Production for Human Diseases and Biochemical Technology
- Genetic and Biochemistry of Detection for Avian Influenza
- Biochemical Toxicology and Nanotechnology
- Biochemistry of Thalassemia
- Biochemistry and Molecular Biology of Cancer
- Cell Signaling
- Plant Biochemistry, Molecular Biology and Signaling
- Plant Proteomics
- Bioinformatics
- Neuronal Stem Cell
- Bioplastics

Structure of the Program

1. Credit Requirements *

Requirements	Option 1.1	Option 1.2
Coursework	-	24
- Core Courses	-	9
- Electives	-	15
Required Non-credit Courses	5	5

Requirements	Option 1.1	Option 1.2
Thesis	36	12
Total	**36**	**36**

* Minimum credits required

2. Core Courses

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Biochemical Techniques and Instrumentation	-	-	418501	3
Advanced Biochemistry	-	-	418502	3
Biochemistry, Cell and Molecular Biology	-	-	422514	3
Total	**-**	**-**	**3**	**9**

3. Electives

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Research Project in Biochemistry	-	-	418511	2
Protein Studies	-	-	418512	3
Current Topics in Biochemistry and Related Fields	-	-	418513	2
Biochemistry of Human Genetic Disorders	-	-	418521	3
Biochemistry and Molecular Biology of Cancer	-	-	418522	3
Advanced Medical Molecular Biology	-	-	418523	3
Viral Biochemistry	-	-	418524	2
Biochemistry of Nutrition and Chemopreventives	-	-	418525	3
Nutrigenomics	-	-	418526	3
Biochemical Toxicology	-	-	418527	3
Human Molecular Genetics	-	-	418528	3
Plant Biochemistry	-	-	418531	3
Biochemistry and Molecular Biology of Plant Development	-	-	418532	3

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Molecular Biology and Genetics Techniques in Plant Study	-	-	418533	3
Physiological and Molecular Basis of Plant Hormones	-	-	418534	3
Physiological and Molecular Basis of Plant Stress Responses	-	-	418535	3
Chemoinformatics for Biochemical Studies	-	-	418536	3
Bioinformatics for Biochemical and Molecular Biological Studies	-	-	418537	3
Molecular Data Mining	-	-	418538	3
Bioinformatics Programing	-	-	418539	3
Advanced Scientific Instrumentation	-	-	422520	3
Advanced Protein Chemistry and Proteomics	-	-	422522	3
Proteases in Human Diseases	-	-	422526	3
Modern Technologies for Pharmacogenomics	-	-	422527	3
Stem Cells in Health and Therapy	-	-	422528	3
Medical Nanotechnology	-	-	422529	3
Biochemistry of Signal Transduction and Regulation	-	-	422532	3
Cell Culture for Medical Science	-	-	422533	3
Current Topics in Medical Science	-	-	422594	3
Total	**-**	**-**	**≥5**	**≥15**

4. Required Non-credit Courses

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Research Methodology in Health Sciences	422510	3	422510	3
Seminar 1	418596	1	418596	1
Seminar 2	418597	1	418597	1
Total	**3**	**5**	**3**	**5**

5. Thesis Credit Requirements

Requirements	Option 1.1		Option 1.2	
	Course No.	Cr.	Course No.	Cr.
Thesis 1, Option 1.1	418551	9	-	-
Thesis 2, Option 1.1	418552	9	-	-
Thesis 3, Option 1.1	418553	9	-	-
Thesis 4, Option 1.1	418554	9	-	-
Thesis 1, Option 1.2	-	-	418561	4
Thesis 2, Option 1.2	-	-	418562	4
Thesis 3, Option 1.2	-	-	418563	4
Total	**4**	**36**	**3**	**12**