Biochemistry for Nursing Students (303221-Inter)-The Course Syllabus: 3(2-2-5)
Semester 1/2019

Lab class: **Wednesday, 08.00-10.00 a.m., Room MD201 (Floor-2) MD Building**

Lecture class: **Wednesday, 10.00-12.00 a.m., Room 202 (Floor-2) Ratchanakarin Building**

Course coordinator: Assistant Prof. Dr. Jetsada Ruangsuriya; e-mail: jetsada.ruang@cmu.ac.th

Date	Month	Time	Topic	Lecturer
Wed, 7	August	08:00-09:00	Course orientation	Jetsada
		09:00-10:00	Cell and cell components	Porn-Ngam
		10:00-12.00	Chemistry&functions of biomolecules	Jetsada
Wed, 14		08:00-09:00	Introduction to laboratory	Jetsada
		09:00-11:00	*LAB 1:Basic tools and equipment in biochemistry laboratory*	*Jetsada & Staff*
		11:00-12.00	Chemistry&functions of biomolecules	Jetsada
Wed, 21		*08:00-10:00*	*LAB 2: Spectrophotometry*	*Jetsada & Staff*
		10:00-12.00	Enzymes and coenzymes	Woranontee
Wed, 28		*08:00-10:00*	*LAB 3: Chemistry of biomolecules*	*Jetsada & Staff*
		10:00-12.00	TCA cycle & Electron transport chain (ETC)	Pornsiri
Wed, 4	September	*08:00-10:00*	*LAB 4: Enzyme activity & enzyme for clinical diagnosis*	*Woranontee & Staff*
		10:00-12.00	Metabolism of carbohydrates (1)	Pornsiri
Wed, 11		**08:00-10:00**	**EXAMINATION I (16%): 8 hr (Cell - ETC)**	**Jetsada & Woranontee**
		10:00-11.00	Metabolism of carbohydrates (2)	Pornsiri
		11:00-12.00	Metabolism of amino acids and proteins (1)	Woranontee
Wed, 18		*08:00-10:00*	*LAB 5: Blood protein & nitrogen compound analyses*	*Orawan & Staff*
		10:00-11.00	Metabolism of amino acids and proteins (2)	Woranontee
		11:00-12.00	Metabolism of lipids & lipoproteins (1)	Jetsada
Wed, 25		*08:00-10:00*	*LAB 6: Analysis of blood lipid*	*Pornsiri & Staff*
		10:00-12.00	Metabolism of lipids & lipoproteins (2)	Jetsada
Wed, 2	October	**08:00-10:00**	**EXAMINATION II (16%): 8 hr (Met carbo - Met lipoprotein)** **MIDTERM EXAMINATION WEEK**	**Pornsiri & Jetsada**
Wed, 9		*08:00-10:00*	*LAB 7: Metabolism & energy*	*Orawan & Staff*
		10:00-12.00	Hormone & metabolic regulation	Orawan
Wed, 16		08:00-10:00	Nucleotide & nucleic acid metabolism	Woranontee
		10:00-12.00	DNA replication & repair	Orawan
Wed, 30		*08:00-10:00*	*LAB 8: DNA extraction & determination*	*Woranontee & Staff*
		10:00-12.00	RNA synthesis & RNA processing	Porn-Ngam
Wed, 6	November	**08:00-10:00**	**EXAMINATION III (12%): 6 hr (Hormone - DNA repli) + (6%) LAB 1-6**	**Orawan & Woranontee**
		10:00-12:00	Protein synthesis & gene regulation	Porn-Ngam
Wed, 13		*08:00-10:00*	*LAB 9: Determination of hemoglobin & hematocrit*	*Thanyaluck & Staff*
		10:00-12:00	Biochemistry of blood and urine	Thanyaluck
Wed, 20		*08:00-10:00*	*LAB 10: Diseases of biomolecule metabolism-I (PRESENTATION)*	*Jetsada, Pornsiri, Orawan*
		10:00-12.00	*LAB 11: Diseases of biomolecule metabolism-II (PRESENTATION)*	*Porn-Ngam, Thanyaluck, Woranontee*
Wed, 27		08:00-10:00	Applied biochemistry (Toxicology & cancer)	Thanyaluck
Wed, 4	December	**08:00-10:00**	**EXAMINATION IV (16%): 8 hr (RNA syn - Applied biochem) + (5%) LAB 7-11**	**Orawan & Thanyaluck**
		10.00-12.00	**COMPREHENSIVE EXAMINATION (11%)**	**Jetsada & Pornsiri**

Course evaluation

Lecture	**71%**	**Lab (chapter)**	**29%**
Exam-I (8 hr)	16%	Exam Lab 1-6	6%
Exam-II (8 hr)	16%	Exam Lab 7-11	5%
Exam-III (6 hr)	12%	Case presentation	8%
Exam-IV (8 hr)	16%	Report & Quiz	8%
Comprehensive exam	11%	Attendance*	2%

* Students whose lab attendance < 80% are automatically failed in the lab sections

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Criteria for exam grading by norm-referenced system

1. The total score is convereted to a percentage scale
2. Student will pass the exam if their percentage score ≥ minimum passing level (MPL)
3. The MPL is calculated using mean - (1.5×SD) or 60%-1.96×SEM, which must be higher than 30%
4. Students get A, B+, B, C+, C, D+, and D if their percentage scores are ≥ mean + (1.5×SD), mean + SD, mean + (0.5×SD), mean, mean - (0.5×SD), and mean - SD, respectively

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Criteria for other assessment grading by criterion-referenced system

1. The total score is convereted to a percentage scale
2. The coverted scores are converetd to the grade using the below reference range

≥ 85% = A	84.9-80.0% = B+
79.9-75.0% = B	74.9-70.0% = C+
69.9-65.0% = C	64.9-60.0% = D+
59.9-55.0% = D	≤ 55% = F

Calculation of the final grade

1. The grades from each assesment is converted to a reference score of 4

4.0 = A	3.5 = B+
3.0 = B	2.5 = C+
2.0 = C	1.5 = D+
1.0 = D	0 = F

2. The converted referenced score is multiplied by the coresponding weight (%)
3. The summation of all multiplied results (≤ 4.00) is converetd to the final grade using the below reference range

≥ 3.51 = A	3.50-3.01 = B+
3.00-2.51 = B	2.50-2.01 = C+
2.00-1.51 = C	1.50-1.01 = D+
1.00-0.51 = D	≤ 0.50 = F

Weighed criteria for case study presentation (8%)

1. The enthusiasm about the assignment = 3%
2. Quality of the presentation = 5% allocated as followed
   - 2.1) Media quality of the presentation = 1%
   - 2.2) Explanation and communication abilities = 1.5%
   - 2.3) The ability to apply basic knowledge for the assignment = 1.5%
   - 2.4) Answering the question = 1%