

<b>Course number</b>	U-LAS70 10002 SE50				
<b>Course title (and course title in English)</b>	ILAS Seminar-E2 :Biochemistry Principles ( 生化学の塾 ) ILAS Seminar-E2 :Biochemistry Principles	<b>Instructor's name, job title, and department of affiliation</b>	Graduate School of Medicine Assistant Professor,Erik WALINDA		
<b>Group</b>	Seminars in Liberal Arts and Sciences	<b>Number of credits</b>	2	<b>Number of weekly time blocks</b>	1
<b>Class style</b>	seminar (Face-to-face course)	<b>Year/semesters</b>	2024 · Second semester	<b>Quota (Freshman)</b>	12 (12)
<b>Target year</b>	Mainly 1st year students	<b>Eligible students</b>	For all majors	<b>Days and periods</b>	Fri.5
<b>Classroom</b>	21, Yoshida-South Campus Bldg. No. 1			<b>Language of instruction</b>	English
<b>Keyword</b>	Biochemistry / Molecular Biology / Chemistry / Physiology				
<b>[Overview and purpose of the course]</b>					
<p>The content of the seminar will overall follow the course of that lecture. The difference is that, here we will take time to review and discuss the contents of the lecture. We will answer questions to make sure every student could understand everything they wanted to understand. We will do a lot of quizzes and exercises to dive deeper into the topic to deepen our understanding of the matter. This means that this seminar could be called a "tutorial" to the lecture. The Japanese subtitle 生化学の塾 emphasizes these points.</p> <p>Students are welcome to ask any question at any time. Preferably in class, but also by e-mail, or in additional meetings with me or the teaching assistant (who isa Ph. D student).</p> <p>This seminar is given in English and active student participation is highly encouraged. It is not intended to be a passive class where the student just listens to the instructor's talk.</p>					
<b>[Course objectives]</b>					
As all matter is composed of atoms, modern life science aims to explain all aspects of life comprehensively from the atomic level to that of the entire organism. In this seminar, students will attain a profound understanding of the atomic design of life, that is how biomolecules work and join forces to fulfill virtually all actions exerted by living beings.					
<b>[Course schedule and contents]</b>					
<ol style="list-style-type: none"> <li>1. Introduction to biochemistry</li> <li>2. DNA, genes, and genomes</li> <li>3. DNA replication and gene expression</li> <li>4. Proteins</li> <li>5. Protein structure</li> <li>6. DNA isolation and analysis</li> <li>7. DNA cloning and PCR</li> <li>8. Protein methods</li> <li>9. Enzymes</li> <li>10. Enzyme kinetics</li> <li>11. Carbohydrates</li> </ol>					
Continue to ILAS Seminar-E2 :Biochemistry Principles ( 生化学の塾 ) (2)					

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12. Lipids  
13. Metabolism  
14. Citric acid cycle and oxidative phosphorylation

Total:14 classes and 1 feedback

**[Course requirements]**

To take this seminar, it is recommended to have some prior knowledge of either general chemistry, organic chemistry, biology or biochemistry or take the lecture [Introduction to biochemistry] given by Prof. Thumkeo or Dr. Candeias on Tuesday. Otherwise, the student will be required to prepare very well before each class using the instructor's notes, the textbook, or handouts of that lecture.

**[Evaluation methods and policy]**

Attendance and active participation [60%]  
Homework assignments [40%]

**[Textbooks]**

Berg, Tymoczko and Stryer 『Biochemistry (any edition)』 ( W. H. Freeman and Co. ) ISBN:978-1-4292-7635-1

You do not have to buy the textbook as it is available at the library.

**[Study outside of class (preparation and review)]**

Biochemical problem questions will be given as homework. In addition, students are invited to prepare their own questions to the instructor in advance.

**[Other information (office hours, etc.)]**

Office hour: any time (please send an email before coming to the office) or online (zoom etc.)