

シラバス参照

④ 科目ナンバリング	TCH-BIO305J
④ 開講年度	2023
④ 科目名	化学・バイオ工学Ⅱ
④ 科目名(英語)	Chemical and Biomolecular Engineering II
④ 単位数	2
④ 担当教員	伊野 浩介 北川 尚美 大野 肇之 青木 秀之 石丸 泰寛 中澤 光亨 中山 亨
④ メディア授業科目 /Course of Media Class	

④ 開講言語	English
④ 授業の目的・概要及び達成方法等	<p>----- Google Classroom用のクラスコードは「lbbkvtr」です。 -----</p> <p>Chemical and Biomolecular Engineering II refers to any technological applications of chemical and biological systems, such as biomolecules and environmental materials to make or modify products or green processes for specific purposes. This class focuses on biomaterials, biomedical engineering, membrane transport, protein engineering, environmentally benign materials and reactions, biomass conversion, fluid dynamics, green process and industrial processes. Students will learn some basic aspects of engineering for biotechnology, biological and environmental materials.</p>
④ 授業の目的・概要及び達成方法等 (E)	<p>----- Google Classroom code: lbbkvtr -----</p> <p>Chemical and Biomolecular Engineering II refers to any technological applications of chemical and biological systems, such as biomolecules and environmental materials to make or modify products or green processes for specific purposes. This class focuses on biomaterials, biomedical engineering, membrane transport, protein engineering, environmentally benign materials and reactions, biomass conversion, fluid dynamics, green process and industrial processes. Students will learn some basic aspects of engineering for biotechnology, biological and environmental materials.</p>
④ 他の授業科目との関連及び履修上の注意	Knowledge of organic chemistry and biochemistry will be required.
④ 他の授業科目との関連及び履修上の注意 (E)	Knowledge of organic chemistry and biochemistry will be required.

<p>④ 授業計画</p>	<p>1 Protein engineering by Hikaru NAKAZAWA 1-1 Protein engineering of enzyme 1-2 Protein engineering and synthetic biology</p> <p>2 Electrochemical biosensing by Kosuke INO 2-1 Probe device for sensing 2-2 Chip device for sensing</p> <p>3 Metabolism biotechnology by Toru NAKAYAMA 3-1 Microbial metabolism and biotechnology 3-2 Plant metabolism and biotechnology</p> <p>4 Plant membrane biotechnology by Yasuhiro ISHIMARU 4-1 Application of plant membranes to biotechnology 4-2 Application of plant membranes to agriculture</p> <p>5 Process evaluation by Hajime OHNO 5-1 Process simulation for innovative technologies 5-2 Process evaluation based on lifecycle thinking</p> <p>6 Energy process engineering by Hideyuki AOKI 6-1 An introduction to energy conversion and management 6-2 An application of energy conversion and management</p> <p>7 Reaction engineering for sustainable process by Naomi SHIBASAKI-KITAKAWA 7-1 Process engineering for biofuel production 7-2 Process engineering for biobased materials production</p>
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<p>④ 授業時間外学修</p>	<p>Preparation: If students are asked to read some textbooks and handouts, they should read them before the lecture and understand the theories of not being clear. This gives you more from the lecture. Review: Students should study the handouts supplied in lecture again.</p>
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<p>④ 成績評価方法及び基準</p>	<p>レポート、課題、授業で実施する小テスト等により学修目標への達成度を総合的に評価する。</p>
<p>④ 成績評価方法及び基準 (E)</p>	<p>Grades are comprehensively evaluated by reports, assignments, quizzes conducted in classes, etc.</p>
<p>④ 教科書および参考書</p>	
<p>④ 関連 URL</p>	
<p>④ 添付ファイル</p>	
<p>④ オフィスアワー</p>	<p>10:00-20:00. Making an appointment is required.</p>
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 備考	
 実務・実践的授業 / Practical business ※○は、実務・実践的授業であることを示す。 / Note: "○" Indicates the practical business	○
 その他	
 更新日付	2023/03/17 16:59

1単位の授業科目は、45時間の学修を必要とする内容をもって構成することを標準としています。1単位の修得に必要な学修時間の目安は、「講義・演習」については15～30時間に授業および授業時間外学修(予習・復習など)30～15時間、「実験・実習及び実技」については30～45時間の授業および授業時間外学修(予習・復習など)15～0時間です。

One-credit courses require 45 hours of study. In lecture and exercise-based classes, one credit consists of 15-30 hours of class time and 30-15 hours of preparation and review outside of class. In laboratory, practical skill classes, one credit consists of 30-45 hours of class time and 15-0 hours of preparation and review outside of class.