

Chemical Process Design

2 units (selection)

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Target To understand the balance calculation and basic design method of chemical processes.

Outline Balance calculation and property estimation will be explained. Students will experience balance calculation using a process simulation software.

Keyword *process design, reaction engineering*

Fundamental Lecture “Introduction to Chemical Reaction Engineering”(1.0), “Chemical Reaction Engineering”(1.0)

Relational Lecture “Catalytic Science and Technology”(0.8), “Introduction to Chemical Reaction Engineering”(0.5), “Automatic Control”(0.2)

Requirement 2年後期の「化学反応工学」を修得していることが望ましい。

Goal

1. To calculate mass and energy balance of simple chemical processes
2. To be able to estimate some physical properties including vapour pressure and latent heat
3. To be able to carry out a basic design of chemical reactors

Schedule

1. Introduction to process design
2. Unit operations
3. Process flow
4. Basics of balance calculation
5. Processes with recycles
6. Processes with reactors
7. Estimation of vapour pressure and boiling point
8. Heat of reaction and equilibrium
9. Heat of phase change
10. Basics of reactor design
11. Reaction process design
12. Catalytic processes
13. Basics of process simulator
14. Balance calculation using process simulator
15. Process design using process simulator
16. Examination

Evaluation Criteria 小テスト 20 点, 中間試験 30 点, 定期試験 50 点を加算し, 60 点以上を合格とする。

Relation to Goal 本学科学習・教育目標 (A:○), (B:◎) に対応する。

Reference 授業中に紹介する。

Contents <http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216270>

Student Able to be taken by night course student of same department

Contact

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Note 特に無し。