# 8/13/2020

# brcc keystone logo

Baton Rouge Community College

*Academic Affairs Master Syllabus*

Date Approved: 28 August 2020

Term and Year of Implementation: Fall 2020

**Course Title:** Process Technology II Unit Systems

**BRCC Course Rubric:** PTEC 2423

**Previous Course Rubric**:

**Lecture Hours per week-Lab Hours per week-Credit Hours**: 3-0-3

**Per semester: Lecture Hours-Lab Hours-Instructional Contact Hours**: 45-0-45

**Louisiana Common Course Number:**

**CIP Code:** 15.0613

**Course Description:** Covers the interrelation of process equipment and process systems. Studies the arrangement of process equipment into basic systems, the purpose and function of specific process systems, the control of factors affecting process systems under normal conditions, and the recognition of abnormal process conditions. This course also introduces the concepts of system and plant economics.

**Prerequisites:** [PTEC 1312 (or PTEC 1313) or (PTEC 131)] and [PTEC 1322] and [PTEC 1612 (or PTEC 1613) or (PTEC 161)] and [PTEC 1622] with grades of "C" or better

**Co-requisites:** PTEC 2421

**Suggested Enrollment Cap:** 15

**Learning Outcomes.** *Upon successful completion of this course, the students will be able to:*

1. Describe process drawings, process controls, and energy/material balances associated with process systems.

2. Identify the combinations of equipment into typical unit operations (reaction and separation systems) and the relationships among the different pieces of the equipment.

3. Identify the combinations of equipment into common utility systems (cooling, heating, gas, etc.) and how they support the various unit operations within a plant.

4. Discuss the specific safety, health, and environmental concerns (relief and flare systems, emergency shutdown, etc.) associated with process systems.

5. Describe an operator's responsibilities to safely and efficiently operate systems, including the interaction among the various pieces of equipment within these systems.

**Assessment Measures.** Assessment of all learning outcomes will be measured using the following methods:

1. Assessment measures may include, but are not limited to, essays, presentations, speeches, portfolios, performances, individual and collaborative projects, in-class activities, lab reports, homework, computer-based training (CBTs) modules, quizzes, exams, industry-based standards, and/or simulated training activities.

**Information to be included on the Instructor’s Course Syllabi:**

* ***Disability Statement*:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.
* ***Grading:*** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor’s and/or the department’s policy for make-up work. For example in a speech course, “Speeches not given on due date will receive no grade higher than a sixty” or “Make-up work will not be accepted after the last day of class”.
* ***Attendance Policy*:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.
* ***General Policies*:** Instructors’ policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.
* ***Cheating and Plagiarism*:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.
* ***Safety Concerns:*** In some courses, this may be a major issue. For example, “No student will be allowed in the lab without safety glasses”. General statements such as, “Items that may be harmful to one’s self or others should not be brought to class”.
* ***Library/ Learning Resources:*** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

**Expanded Course Outline:**

1. Systems Overview, Potable and Fire Water Systems
2. Soft Skills (Employability Skills)
3. Service/Utility and Waste Water Systems
4. Cooling Water Systems
5. Instrument Air, Utility Air and Breathing Air Systems
6. Nitrogen, Natural Gas and Fuel Gas systems
7. Relief and Flare Systems, Electrical Poser Generation and Distribution Systems
8. Material Storage and Blending
9. Refrigeration Systems
10. Steam Generation & Distribution Systems 1
11. Steam Generation & Distribution Systems 2
12. Steam Generation & Distribution Systems 3
13. Steam Generation & Distribution Systems 4
14. Reaction Systems
15. Separation Systems Overview and Extraction Systems
16. Distillation Systems
17. Stripping Systems & Absorption Systems
18. Dehydration and Adsorption Systems
19. Filtration systems, Separation Systems Comparison
20. Systems Procedures and Troubleshooting
21. Control Systems
22. System Economics and Optimization