



Course Documentation Outline

School of Business, Biosciences and Justice Studies

SECTION I

1. Program (s): Chemical Engineering
2. Course Name: Industrial Processes
3. Course Code: BIOS 1004
4. Credit Value: 3
5. Course Hours: 45

Class	Lab	Field	Other	Total
15	3	27		45

6. Prerequisites/Core requisites/Equivalent Courses: **None**

PR/CO/EQ	Course Code	Title
N/A		
N/A		

7. Faculty: Joe Mullin Date: Jan 11, 2010 Effective Date: Jan 12, 2010
8. Dean/Chair Approval: *Jim Whiteway* Date: January, 2010
9. Revision Number: Date: Effective Date:
10. Notes: A passing grade is 60%.

Section II

11. Calendar Description:

This is an introductory course looking at industrial processes in a variety of manufacturing environments. The focus will be on unit operations, flow sheets and integrated processes. Visits to several local manufacturing operations will be scheduled to observe the many various processes and process controls used in the sector. The tools used in process design, namely mass and heat balances, will be also be discussed. Economic and environmental issues in the design and operation of industrial processes will also be reviewed.

12. Provincial Context:

This course meets the following Ministry of Education and Training requirements:

a). Prior Learning Assessment (PLA)

Students may apply to receive credit by demonstrating achievement of the course learning outcomes through previous life and work experiences.

This course is eligible for challenge through the following method(s) indicated by *

Challenge Exam	Portfolio	Interview	Other	Not Eligible
*				

PLAR Contact:

13. Employability Skills emphasized in this course

	communication - written		communication - visual		communication - oral
X	analytical	X	creative thinking	X	decision making
	interpersonal		numeracy		organizational
X	problem solving	X	technological		other (specify)

14. Required Texts, Materials, Resources or Technical Materials Required:

There is no required text for this course – **SAFETY SHOES & GLASSES WILL BE REQUIRED** as many employers require this protective equipment to be worn, while in their facilities.

15. **Evaluation Plan**

Students will demonstrate learning in the following ways:

Assignment Description	Evaluation Methodology	Due Date
Attendance	15% - Students are expected to show up for class regularly and on time	
Field Trip Reports (9 reports due)	40% - Students will be required to submit a field trip report answering specific questions about the various industries visited and describing their individual learning aspects	The week following plant visit
Presentations (6 Presentations)	40% - Students will be required to work/present individually and in groups. The group work/presentations will involve students designing virtual industrial processes/facilities. This will include a water filtration plant process showing process layout, key equipment components, chemical processes involved and automated process controls (Such as PLC's) used in modern facilities. Students will also learn about unit operations in industrial food plants and the importance of the process/plant design to ensure Food Safety is not compromised.	Each In-Class/Lab session
Quiz Assignment (Mass Balance)	5% - Students will be assigned an individual quiz where they will need to calculate Inputs/Outputs of a production facility including; raw materials, finished goods, energy and waste. (breaking down solid waste, air emissions and effluent)	April 21, 2010

16. **Other**

Loyalist College has a Violence Prevention policy:

- **All College members have a responsibility to foster a climate of respect and safety, free from violent behaviour and harassment.**
- **Violence (e.g. physical violence, threatening actions or harassment) is not, in any way, acceptable behaviour.**
- **Weapons or replicas of weapons are not permitted on Loyalist College property.**
- **Unacceptable behaviour will result in disciplinary action or appropriate sanctions.**
- **More information can be found in the "Student Manual and Guide - Rights & Responsibilities".**

Section III

17. Curriculum Delivery, Learning Plan and Learning Outcomes:

Course Components/Content	Related Learning Outcomes	Learning Activities/Resources
General Principles a) process b) design c) control	This is largely conceptual and the student should understand the jargon and the basic tools of chemical/food process design.	Lectures and assignments using library and internet resources
Flow Diagrams a) inputs b) outputs c) waste streams mass balance	This section explores the basic design and operational tools in chemical/food process.	Lectures and assignments using library and internet resources,
Industrial Processes a) Chemical b) Metallurgical c) Food	This section will reinforce the previous sections and expose the student to a variety of processes and process industries	Lectures and assignments using library and internet resources. The students will make short presentations on assigned processes.