



## Lakehead University Faculty of Engineering

### REQUEST REPORT

**Request Tracking Number:** 2014-ENG-3054  
**Request Title:** ENGI 3338 and 3438

[DeAcTerm[EffectiveDate]] [DeAc[RequestEffectiveDate]]  
**Request Status:** In Workflow  
Request can't be split

### Request Contents

Type		Title
1.	New Version of a Course	Mass Transfer Separations
2.	New Version of a Course	Laboratory Investigations in Mass Transfer Separations

### Request History

Workflow Step	Workflow Action	User	Change Made	Comments	Date
Initiator	Approved	Laura Parker	Yes	Submitted to workflow	01/28/2014
Dean and Faculty Council Review Stage	Approved	Laura Parker	No	Approved Jan 20/2014 at Fac. Council	01/29/2014

### Supporting Documents

File Name	Uploaded By	Upload Date	Size
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### Supporting Documents Audit Trail

File Name	User	Date	Action
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### Notes

Date	User	Note
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1.	New Version of a Course	Engineering 3338 - Mass Transfer Separations
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### Course Details

CURRENT VERSION	PROPOSED VERSION
Engineering 3338 - Mass Transfer Separations I <b>Start Term:</b> Fall 2012 <b>End Term:</b> No Specified End Date	Engineering 3338 - Mass Transfer Separations-I <b>Start Term:</b> Fall <del>2012</del> 2014 <b>End Term:</b> No Specified End Date

<u>Course Details</u>	
CURRENT VERSION	PROPOSED VERSION
<b>Code</b> Engineering 3338	<b>Code</b> Engineering 3338
<b>Title</b> Mass Transfer Separations I	<b>Title</b> Mass Transfer Separations-I
<b>Description</b> This course and Engineering 3438 - Mass Transfer Separations II, form a sequence in which the unit operations concerned with the separation of chemical mixtures are examined. The first term concentrates on principles of diffusion and interphase mass transfer and stage process operations as applied to gas absorption, liquid-liquid extraction. The second term deals with the unit operations of distillation, humidification, drying, membrane separations and leaching. Emphasis is placed on laboratory experiments, report writing and oral presentations.	<b>Description</b> This course <del>and Engineering 3438 – Mass Transfer Separations II, form a sequence in which the unit operations concerned with the separation of chemical mixtures are examined. The first term concentrates on</del> covers the principles of diffusion and interphase mass transfer <del>and stage process operations as applied to</del> . The design of the following mass transfer operations is addressed in detail: gas absorption, liquid-liquid extraction. <del>The second term deals with the unit operations of</del> , distillation, humidification, drying, membrane separations and leaching. <del>Emphasis is placed on laboratory experiments, report writing and oral presentations.</del>
<b>End Term</b> No Specified End Date	<b>End Term</b> No Specified End Date
<b>Institution</b> Lakehead University	<b>Institution</b> Lakehead University
<b>Faculty</b> Faculty of Engineering	<b>Faculty</b> Faculty of Engineering
<b>CreditWeight</b> 0.5	<b>CreditWeight</b> 0.5
<b>Rationale</b>	<b>Rationale</b> <i>There is currently some overlap between topics covered in Engineering 2331 (Unit Operations II), Engineering 3338 (Mass Transfer Separations 1) and Engineering 3438 (Mass Transfer Separations 2). At present, Engineering 3338 and 3438 provide a total of <math>2 \times 3 \times 12 = 72</math> hours of lecture in Mass Transfer Separations. The proposed changes would reduce the number of lecture hours in Mass Transfer Separations to <math>3 \times 12 = 36</math> hours but would add <math>1.5 \times</math></i>

	<i>12 = 18 hours of tutorials. All these hours will be in Engineering 3338 and will concentrate on material that does not overlap with Engineering 2331.</i>
<b>Requiredor Elective</b>	<b>Requiredor Elective</b> Required
<b>Cross List</b>	<b>Cross List</b>
<b>Offering</b> 3-3; 0-0	<b>Offering</b> 3- <del>3</del> 1.5; 0-0
<b>Prerequisites</b>	<b>Prerequisites</b>
<b>Corequisites</b>	<b>Corequisites</b>
<b>Notes</b>	<b>Notes</b>
<b>SpecialTopicDropdown</b>	<b>SpecialTopicDropdown</b>
<b>GradeSchemePF</b>	<b>GradeSchemePF</b>
<b>EffectonEnrolmentINIT</b>	<b>EffectonEnrolmentINIT</b> <i>No</i>
<b>EffectonEnrolmentOTHER</b>	<b>EffectonEnrolmentOTHER</b> <i>No</i>
<b>AdditionalTeachingSpace</b>	<b>AdditionalTeachingSpace</b> <i>No</i>
<b>EffectonTeachingLoads</b>	<b>EffectonTeachingLoads</b> <i>No</i>
<b>EffectonServices</b>	<b>EffectonServices</b> <i>No</i>
<b>DirectinkindSupport</b>	<b>DirectinkindSupport</b> <i>No</i>

2.	New Version of a Course	Engineering 3438 - Laboratory Investigations in Mass Transfer Separations
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### Course Details

CURRENT VERSION	PROPOSED VERSION
Engineering 3438 - Mass Transfer Separations II <b>Start Term:</b> Fall 2012 <b>End Term:</b> No Specified End Date	Engineering 3438 - <i>Laboratory Investigations in</i> Mass Transfer Separations- <del>H</del> <b>Start Term:</b> Fall <del>2012</del> 2014 <b>End Term:</b> No Specified End Date

<u>Course Details</u>	
CURRENT VERSION	PROPOSED VERSION
<b>Code</b> Engineering 3438	<b>Code</b> Engineering 3438
<b>Title</b> Mass Transfer Separations II	<b>Title</b> <i>Laboratory Investigations in</i> Mass Transfer Separations- <del>H</del>
<b>Description</b> See Engineering 3338.	<b>Description</b> <del>See</del> <i>This course applies the theories presented in Engineering 3338. Emphasis is placed on the design of laboratory experiments, testing of hypotheses, error analysis, report writing and oral presentations.</i>
<b>End Term</b> No Specified End Date	<b>End Term</b> No Specified End Date
<b>Institution</b> Lakehead University	<b>Institution</b> Lakehead University
<b>Faculty</b> Faculty of Engineering	<b>Faculty</b> Faculty of Engineering
<b>CreditWeight</b> 0.5	<b>CreditWeight</b> 0.5
<b>Rationale</b>	<b>Rationale</b> <i>Engineering 3438 will focus on teaching investigation and communication skills to our students. Presently, our students are introduced to the formulation and testing of hypotheses and to the analysis of experimental uncertainties in their first year through the laboratory component of Engineering 1554 (Unit Operations 1). However, they do not formally practice these skills in further years, and the instructors have noticed that the students' progress in laboratory investigative skills throughout the curriculum is generally below expectations. The proposed change will ensure that these very important skills are reinforced in the 3rd year of the program. Each student will be required to work on four different experimental setups. For each setup, they will be</i>

	<p><i>asked to do a literature review, formulate hypotheses related to the applicable theory, develop experimental procedures to test their hypotheses, carry out experiments according to their procedures, analyse the experimental data while quantitatively assessing the propagation of experimental uncertainty through their calculations, conclude on the validity of their hypotheses, and provide recommendations on improving the experimental procedures. Engineering 3438 includes a total of 36 hours of laboratory time and 12 hours of lectures. The lecture hours will be devoted to the explanation of the scientific method, uncertainty calculations, and the relationship between the experimental setups and the theory covered in Engineering 3338. We require the offering to be stated as 1-3, 1-3 in the calendar for scheduling purposes because the experiments will be carried out over the fall and winter terms; however, the course carries a credit weight of only 0.5.</i></p>
<b>Requiredor Elective</b>	<b>Requiredor Elective</b> Required
<b>Cross List</b>	<b>Cross List</b>
<b>Offering</b> 0-0; 3-3	<b>Offering</b> <del>0</del> 1- <del>0</del> 3; <del>3</del> 1-3
<b>Prerequisites</b>	<b>Prerequisites</b>
<b>Corequisites</b>	<b>Corequisites</b> <i>Engineering 3338</i>
<b>Notes</b>	<b>Notes</b>
<b>SpecialTopicDropdown</b>	<b>SpecialTopicDropdown</b>
<b>GradeSchemePF</b>	<b>GradeSchemePF</b>
<b>EffectonEnrolmentINIT</b>	<b>EffectonEnrolmentINIT</b> <i>No</i>
<b>EffectonEnrolmentOTHER</b>	<b>EffectonEnrolmentOTHER</b> <i>No</i>
<b>AdditionalTeachingSpace</b>	<b>AdditionalTeachingSpace</b> <i>No</i>
<b>EffectonTeachingLoads</b>	<b>EffectonTeachingLoads</b> <i>No</i>
<b>EffectonServices</b>	<b>EffectonServices</b> <i>No</i>
<b>DirectinkindSupport</b>	<b>DirectinkindSupport</b> <i>No</i>