DECISION ACADEMIC

Lakehead University
Faculty of Science and Environmental Studies

REQUEST REPORT

Request Tracking Number: 2015-SCI-4687
Request Title: Courses Modification UG Computer Science

[DeAcTerm[EffectiveDate]] [DeAc[RequestEffectiveDate]]
Request Status: In Working Folder
Request can be split

Request Contents

Type		Title
1.	New Version of a Course	Database Management Systems
2.	New Version of a Course	Algorithm Design and Analysis
3.	New Version of a Course	Theory of Computing
4.	New Version of a Course	Game Programming

Request History

Workflow Step	Workflow Action	User	Change Made	Comments	Date

Supporting Documents

File Name	Uploaded By	Upload Date	Size

Supporting Documents Audit Trail

File Name	User	Date	Action

Notes

Date	User	Note

Printed: 01/06/2015

1.	New Version of a Course	Computer Science 3413 - Database Management Systems

Course Details

CURRENT VERSION	PROPOSED VERSION
Computer Science 3413 - Database Management Systems **Start Term:** Fall 2012 **End Term:** No Specified End Date	Computer Science 3413 - Database Management Systems **Start Term:** ~~Fall 2012~~*2014-15* **End Term:** No Specified End Date

Course Details

CURRENT VERSION	PROPOSED VERSION
Code Computer Science 3413	**Code** Computer Science 3413
Title Database Management Systems	**Title** Database Management Systems
Description The data base concept. The relational model. SQL and other database manipulation languages. Experience with a modern database environment. Normalization and logical database design. Database administration, physical database design.	**Description** The ~~data base concept. The~~ *database concept, the* relational model~~. SQL~~, *normalization* and ~~other~~ *logical* database ~~manipulation languages. Experience with a modern database environment. Normalization and logical database design. Database administration, physical database design~~*design. SQL, triggers, transactions. Experience with multi-level database environment. Data warehousing concepts including datamarts, ETL, star Schemas and fact tables. Limitations of the Relational model on Big or Unstructured Data and how they are addressed in Not Only SQL (NoSQL) and Hadoop. Database administration, authorization, backup and recovery features*.
End Term No Specified End Date	**End Term** No Specified End Date
Institution Lakehead University	**Institution** Lakehead University
Faculty Faculty of Science and Environmental Studies	**Faculty** Faculty of Science and Environmental Studies
CreditWeight 0.5	**CreditWeight** 0.5
Rationale	**Rationale** *Updating content based on suggestions from IQAP review*
Requiredor Elective	**Requiredor Elective** Required

Cross List	**Cross List** *no*
Offering 3-1; 0-0	**Offering** 3-1; 0-0
Prerequisites Computer Science 2412 and 2477	**Prerequisites** Computer Science 2412 and 2477
Corequisites	**Corequisites**
Notes	**Notes**
SpecialTopicDropdown	**SpecialTopicDropdown** No
GradeSchemePF	**GradeSchemePF** Other
EffectonEnrolmentINIT	**EffectonEnrolmentINIT** *No*
EffectonEnrolmentOTHER	**EffectonEnrolmentOTHER** *No*
AdditionalTeachingSpace	**AdditionalTeachingSpace** *No*
EffectonTeachingLoads	**EffectonTeachingLoads** *No impact. It has been given for years*
EffectonServices	**EffectonServices** *None*
DirectinkindSupport	**DirectinkindSupport** *No*

2.	New Version of a Course	Computer Science 4433 - Algorithm Design and Analysis

Course Details

CURRENT VERSION	PROPOSED VERSION
Computer Science 4433 - Algorithm Design and Analysis **Start Term:** Fall 2012 **End Term:** No Specified End Date	Computer Science 4433 - Algorithm Design and Analysis **Start Term:** ~~Fall 2012~~*2014-15* **End Term:** No Specified End Date

Course Details	
CURRENT VERSION	**PROPOSED VERSION**
Code Computer Science 4433	**Code** Computer Science 4433
Title Algorithm Design and Analysis	**Title** Algorithm Design and Analysis
Description Design of algorithms and analysis of required time and space resources for execution. Lower bounds for resource requirements. Problems in arithmetic, order statistics, set manipulation, string matching, graph theory. Polynomial time, P, and non-deterministic polynomial time, NP, computable algorithms. NP complete problems.	**Description** Design of algorithms and analysis of required time and space resources for execution. Lower bounds for resource requirements. Problems in arithmetic, order statistics, set manipulation, string matching, graph theory. Polynomial time, P, and non-deterministic polynomial time, NP, computable algorithms. NP complete problems.
End Term No Specified End Date	**End Term** No Specified End Date
Institution Lakehead University	**Institution** Lakehead University
Faculty Faculty of Science and Environmental Studies	**Faculty** Faculty of Science and Environmental Studies
CreditWeight 0.5	**CreditWeight** 0.5
Rationale	**Rationale** *Mathematics requirements for program are being revised and MATH1272 is no longer required in the program.*
Requiredor Elective	**Requiredor Elective**
Cross List	**Cross List** *no*
Offering 0-0; 3-0	**Offering** 0-0; 3-0

Prerequisites Computer Science 2412 and Mathematics 1271, 1272	**Prerequisites** Computer Science 2412 and Mathematics 1271~~, 1272~~
Corequisites	**Corequisites**
Notes	**Notes**
SpecialTopicDropdown	**SpecialTopicDropdown** No
GradeSchemePF	**GradeSchemePF** Other
EffectonEnrolmentINIT	**EffectonEnrolmentINIT** *no*
EffectonEnrolmentOTHER	**EffectonEnrolmentOTHER** *no*
AdditionalTeachingSpace	**AdditionalTeachingSpace** *none*
EffectonTeachingLoads	**EffectonTeachingLoads** *no impact, it has been given for years (on an alternating basis)*
EffectonServices	**EffectonServices** *no change*
DirectinkindSupport	**DirectinkindSupport** *no*

3.	New Version of a Course	Computer Science 4451 - Theory of Computing

Course Details

CURRENT VERSION	PROPOSED VERSION
Computer Science 4451 - Theory of Computing **Start Term:** Fall 2012 **End Term:** No Specified End Date	Computer Science 4451 - Theory of Computing **Start Term:** ~~Fall 2012~~*2014-15* **End Term:** No Specified End Date

Course Details	
CURRENT VERSION	**PROPOSED VERSION**
Code Computer Science 4451	**Code** Computer Science 4451
Title Theory of Computing	**Title** Theory of Computing
Description Abstract computation devices, finite automata, pushdown, and linear-bounded automata. Turing Machines, or equivalent, as transducers and as acceptors. Connections with classes of languages and term-rewriting systems. Deterministic and non-deterministic computability. Introduction to logic programming via resolution-unification algorithms.	**Description** Abstract computation devices, finite automata, pushdown, and linear-bounded automata. Turing Machines, or equivalent, as transducers and as acceptors. Connections with classes of languages and term-rewriting systems. Deterministic and non-deterministic computability. Introduction to logic programming via resolution-unification algorithms.
End Term No Specified End Date	**End Term** No Specified End Date
Institution Lakehead University	**Institution** Lakehead University
Faculty Faculty of Science and Environmental Studies	**Faculty** Faculty of Science and Environmental Studies
CreditWeight 0.5	**CreditWeight** 0.5
Rationale	**Rationale** *Updating prerequisites to match new mathematics requirements in program following IQAP recommendations*
Requiredor Elective	**Requiredor Elective**
Cross List	**Cross List** *no*
Offering 0-0; 3-0	**Offering** 0-0; 3-0
Prerequisites	**Prerequisites**

Computer Science 2412 and Mathematics 1271, 1272	Computer Science 2412 and Mathematics 1271~~, 1272~~
Corequisites	**Corequisites**
Notes	**Notes**
SpecialTopicDropdown	**SpecialTopicDropdown** No
GradeSchemePF	**GradeSchemePF** Other
EffectonEnrolmentINIT	**EffectonEnrolmentINIT** *no*
EffectonEnrolmentOTHER	**EffectonEnrolmentOTHER** *no*
AdditionalTeachingSpace	**AdditionalTeachingSpace** *no*
EffectonTeachingLoads	**EffectonTeachingLoads** *no impact, it has been given on an alternating basis for years*
EffectonServices	**EffectonServices** *no*
DirectinkindSupport	**DirectinkindSupport** *no*

4.	New Version of a Course	Computer Science 4478 - Game Programming

Course Details

CURRENT VERSION	PROPOSED VERSION
Computer Science 4478 - Games Design Patterns **Start Term:** Fall 2012 **End Term:** No Specified End Date	Computer Science 4478 - ~~Games Design Patterns~~*Game Programming* **Start Term:** ~~Fall 2012~~*2014-15* **End Term:** No Specified End Date

Course Details

CURRENT VERSION	PROPOSED VERSION
Code Computer Science 4478	**Code** Computer Science 4478
Title Games Design Patterns	**Title** ~~Games Design Patterns~~*Game Programming*
Description A model is presented to support the design and analysis of games through the use of games design patterns. The model consists of a structural framework to describe the components of games, and patterns of interaction that describe how components are used by players (or a computer) to affect various aspects of the game play. Object-oriented game design patterns are used extensively requiring proper abstractions and decoupling. The results are gaming systems that can be easily modified, upgraded or adapted. The student will develop several games (e.g. single, multiplayer and mobile games) through the course assignments and projects.	**Description** A ~~model is presented to support the design and analysis of games through the use of games design patterns. The model consists of a structural framework to describe the components of games, and patterns of interaction that describe how components are used by players (or a computer) to affect various aspects of the game play. Object-oriented game design patterns are used extensively requiring proper abstractions and decoupling. The results are gaming systems that can be easily modified, upgraded or adapted. The student will develop several games (e.g. single, multiplayer and mobile games)~~ *practical introduction to game programming and game design concepts, emphasizing the basic tools of game design. This course provides students with a well-rounded skill set by addressing game design art, storytelling, animation, game play mechanics, game engines and various software production methodologies. Throughout the course, students learn to apply industry standard software tools and techniques for the game production processes. Special emphasis is given to object-oriented games and web games via JavaScript, Flash or other newer programming technologies. Students will develop several games* through the course assignments and projects.
End Term No Specified End Date	**End Term** No Specified End Date
Institution Lakehead University	**Institution** Lakehead University
Faculty Faculty of Science and Environmental Studies	**Faculty** Faculty of Science and Environmental Studies

CreditWeight 0.5	**CreditWeight** 0.5
Rationale	**Rationale** *as directed by the IQAP reviewers. The new course description removes any overlap with other courses*
Requiredor Elective	**Requiredor Elective** Required
Cross List	**Cross List** *no*
Offering 3-0; or 3-0	**Offering** 3-0; or 3-0
Prerequisites Computer Science 2477	**Prerequisites** Computer Science 2477
Corequisites	**Corequisites**
Notes	**Notes**
SpecialTopicDropdown	**SpecialTopicDropdown** No
GradeSchemePF	**GradeSchemePF** Other
EffectonEnrolmentINIT	**EffectonEnrolmentINIT** *no*
EffectonEnrolmentOTHER	**EffectonEnrolmentOTHER** *no*
AdditionalTeachingSpace	**AdditionalTeachingSpace** *no*
EffectonTeachingLoads	**EffectonTeachingLoads** *no impact. It has been given for years even though is has been on our list of electives.*
EffectonServices	**EffectonServices** *no*
DirectinkindSupport	**DirectinkindSupport** *no*

Prerequisites

CURRENT VERSION			PROPOSED VERSION		
R1: ... All Course(s) from the following...			R1: ... All Course(s) from the following...		
Code	**Title**	**Credits**	**Code**	**Title**	**Credits**

Computer Science 2477	Object Oriented Programming		Computer Science 2477	Object Oriented Programming	