1. Will this new course affect a current program?  
   If "yes", has a Program Revision Form been submitted concurrently?  
   □ Yes □ No  
2. Teaching Department:  School of Computer Science  
3. Administering  
   Faculty/Unit:  Science  
4. Campus  
   (Downtown, Macdonald,  
   Off Campus, Distance  
   Ed, Other – specify)  
   Downtown  
5. Effective Term of Implementation  
   (Ex. Sept. 2004 = 200409)  
   Term:  200509  
6. Course Title (Limit 30 Characters) - required for all courses:  
   Combinatorial Optimization  
7. Course Number(s)  
   Indicate course number & the number of terms spanned:  
   (tick all that apply)  
   Subject/course number:  COMP 552  
   Course(s) Span:  
   □ 1 term  
   □ 2 consecutive terms (D1, D2)  
   □ 2 non-consecutive terms (N1, N2)  
   □ 3 terms (J1, J2, J3)  
8. Course Title to Appear in the Calendar (optional)  
   (Limit 59 characters):  
   Note: This can ONLY be an expansion of word(s) abbreviated in the  
   30 character course title above.  
9. Credit Weight  
   (or CEU's for non-credit CE courses):  
   4  
10. Schedule Type(s):  
    (Enter all that apply – see form, STVSCHD in Banner for a complete list.)  
    (i.e. Lecture, Labs, Tutorial)  
    | Hours per Week | Hours per Week | Hours per Week |  
    | Lecture        | Project       |                |  
    | 3             | 3             |                |  
    Total Hours per Week:  6  
    Total Number of Weeks:  13  
11. Projected Enrolment:  
   20  

Academic Calendar 2005-2006
12. Prerequisite(s) (Courses or Tests)
Specify course number(s) or name(s) of test(s):

MATH 350 or COMP 362 (or equivalent)

If the student does not have a prerequisite should web registration be blocked?

☐ Yes ☐ No

If “Yes” complete A and B:

A. Indicate minimum grade or test score(s) the student must attain in prerequisite course(s) or test(s):

B. Can the prerequisite course(s) or test(s) be taken in the same term as this course?

☐ Yes ☐ No

13. Corequisite(s) Course Number(s):
Specify course number(s) and title(s):

If the student does not register for the corequisite in the same term should web registration be blocked?

☐ Yes ☐ No

14. Consultation Reports Attached

X Yes ☐ N/A


15. Additional Course Charges (must be approved by the Fee Policy Committee)

Description of Fee (e.g. screening fee) Amount

16. Requires Teaching, Physical, or Financial Resources
Not Currently Available (attach explanation)

☐ Yes ☐ No

17. Other Information (specify):

18. Course Description
(as it will appear in the Calendar [maximum 50 words]):
(N.B. Faculty of Medicine must append complete course outline)

Algorithmic and structural approaches in combinatorial optimization with a focus upon theory and applications. Topics include: Polyhedral methods, network optimization, the ellipsoid method, graph algorithms, matroid theory and submodular functions.

19. Supplementary information to appear in the Calendar in addition to the course description.
Such as: registration restriction(s), prerequisite(s), corequisite(s), equivalent course(s), contact hours, enrolment limitations, language of instruction etc.
Please enter the information as it should appear in the calendar notes.

This course is reserved for undergraduate honours students and graduate students. Not open to students who have taken or are taking Math 552.

20. Rationale

Combinatorial optimization concerns problems formulated on sets of combinatorial objects. The field is closely related to both discrete mathematics and theoretical computer science. A sound knowledge of combinatorial optimization is essential for any student interested in algorithm design and analysis. This motivates offering an inter-departmental course aimed at graduate students and upper level honours students in mathematics or computer science. Currently there are no courses at any level in combinatorial optimization at McGill and this proposal aims to rectify this situation.

The course will serve as a serious introduction to the field for honours undergraduate students, and will be a first step in familiarizing graduate students with research in the area. The course will involve a research project in addition to assignments and exams.
### INFORMATION FOR ADMISSIONS, RECRUITMENT & REGISTRAR'S OFFICE

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<th>To be completed by ARR</th>
<th>For Continuing Education Use</th>
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### Thesis Component:

- Yes
- No

### 21. Approvals:

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<tr>
<th>Routing Sequence</th>
<th>Departmental Meeting</th>
<th>Departmental Chair</th>
<th>Other Faculty</th>
<th>Curric/Academic Committee</th>
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<tbody>
<tr>
<td>Name</td>
<td>Denis Thérien</td>
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**Departmental Contact Person**

- Judy Kenigsberg  ext. 00895