1. Will this new course affect a current program?  
   If "yes", has a Program Revision Form been submitted concurrently?  
   Yes □ No □

2. Teaching Department:  
   Mathematics & Statistics

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: MATH 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  
    Lecture 3  Project 3
    Total Hours per Week: 6

11. Projected Enrolment:  
    20
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
☑ Yes ☐ N/A
Computer Science use of COMP 362

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.
Not open to students who have taken or are taking COMP 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

**To be completed by the Faculty**
- Slot Course: [ ] Yes  [ ] No
- Thesis Component: [ ] Yes  [ ] No

**To be completed by ARR**
- CIP Code

**For Continuing Education Use**
- CE Admin. Unit: 
- CE Non-Grant Courses: 
- Flat Rate: CdnFlat Rate: [ ] Yes  [ ] N/A

### 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>
<th>Faculty</th>
<th>SCTP</th>
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<tbody>
<tr>
<td>Name</td>
<td>G. Schmidt</td>
<td>K. Gowri Sankaran</td>
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**Departmental Contact Person (name/phone/email)**  
gschmidt@math.mcgill.ca