



1. Will this new course affect a current program?
If "yes", has a Program Revision Form been submitted concurrently?

Yes No
 Yes No

2. Teaching Department:

4. Campus
(Downtown, Macdonald,
Off Campus, Distance
Ed, Other – specify)

5. Effective Term of Implementation
(Ex. Sept. 2004 = 200409)

Term:

3. Administering
Faculty/Unit:

6. Course Title (Limit 30 Characters) - required for all courses:

7. Course Number(s)
Indicate course number & the number of terms spanned:
(tick all that apply)

Subject/course number:

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):

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
<input type="text" value="3"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>
Total Hours per Week:		<input type="text" value="3"/>
Total Number of Weeks:		<input type="text" value="13"/>

11. Projected Enrolment:

12. Prerequisite(s) (Courses or Tests)
Specify course number(s) or name(s) of test(s):

COMP-424

MATH-223

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

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):
[Empty box]

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

This course considers issues relevant to the design of robotic and of intelligent systems. How can robots move and interact. Robotic hardware systems. Kinematics and inverse kinematics. Sensors, sensor data interpretation and sensor fusion. Path planning. Configuration spaces. Position estimation. Intelligent systems. Spatial mapping. Multi-agent systems. Applications.

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.

[Empty box]

20. Rationale

Robotics and more generally the integration of hardware systems with computer software represent a key area of both industrial and research significance. There is a widely held belief that robotics technologies will become increasingly available in the next several years, for example via semi-automated vehicle controls. The area also has appealing connections to both theoretical computer science as well as computer systems engineering. The area has wide appeal and is an area of exceptional research strength at McGill, and yet it is not currently represented in our undergraduate program. This course would address that shortcoming.

There are two robotics courses at the 500-level in mechanical engineering: MECH 572, *Introduction to Robotics* and MECH 573, *Mechanics of Robotic Systems* and one course in mechatronics MECH 557, *Mechatronic Design*, but none of these focuses on algorithmic issues or has a syllabus that substantially overlaps with what is proposed here.

INFORMATION FOR ADMISSIONS, RECRUITMENT & REGISTRAR'S OFFICE		
<p><i>To be completed by the Faculty</i></p> <p>Slot Course: <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Thesis Component: <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	<p><i>To be completed by ARR</i></p> <p>CIP Code</p> <div style="border: 1px solid black; height: 20px; width: 100%; margin-top: 5px;"></div>	<p><i>For Continuing Education Use</i></p> <p>CE Admin. Unit : <div style="border: 1px solid black; width: 100%; height: 20px;"></div></p> <p>CE Non-Grant Courses: <div style="border: 1px solid black; width: 100%; height: 20px;"></div></p> <p>Flat Rate: CdnFlat Rate: <input type="checkbox"/> Yes <input type="checkbox"/> N/A</p>

21. Approvals:						
Routing Sequence	Departmental Meeting	Departmental Chair	Other Faculty	Curric/Academic Committee	Faculty	SCTP
Name		Denis Thérien				
Signature						
Date		17 Sept. 2004				
Departmental Contact Person (name/phone/email)	Judy Kenigsberg ext. 00895					