### PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION, OR REVISION OF A GRADUATE COURSE
(50000-60000 LEVEL)

**DEPARTMENT**: Engineering Technology  
**EFFECTIVE SESSION**: Fall 2012

**INSTRUCTIONS**: Please check the items below which describe the purpose of this request.

- [x] New course with supporting documents (complete proposal form)
- [ ] Add existing course offered at another campus
- [ ] Expiration of a course
- [ ] Change in course number
- [ ] Change in course title
- [ ] Change in course credit type
- [ ] Change in course attributes
- [ ] Change in instructional hours
- [ ] Change in course description
- [ ] Change in course requisites
- [ ] Change in semesters offered
- [ ] Transfer from one department to another

#### PROPOSED:

<table>
<thead>
<tr>
<th>Subject Abbreviation</th>
<th>TECH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number</td>
<td>52100</td>
</tr>
<tr>
<td>Long Title</td>
<td>Practicum in Motorsports Design and Application</td>
</tr>
<tr>
<td>Short Title</td>
<td>Motorsports Practicum</td>
</tr>
</tbody>
</table>

**EXISTING:**

<table>
<thead>
<tr>
<th>Subject Abbreviation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Number</td>
<td></td>
</tr>
<tr>
<td>Long Title</td>
<td></td>
</tr>
<tr>
<td>Short Title</td>
<td></td>
</tr>
</tbody>
</table>

**TERMS OFFERED**

- Check All That Apply:
  - [x] Fall
  - [x] Spring
  - [ ] Summer

**CAMPUS(ES) INVOLVED**

- Calumet
- Cont Ed
- N. Central
- Tech Statewide
- Ft. Wayne
- W. Lafayette
- [x] Indianapolis

**CREDIT TYPE**

- Fixed Credit: Cr. Hrs. 4
- Variable Credit Range:
  - Minimum Cr. Hrs. (Check One)
    - [ ] To
    - [ ] Or
    - [x] No
  - Maximum Cr. Hrs. 4
- Equivalent Credit: Yes
- Thesis Credit: [x] Yes  
  - No

**COURSE ATTRIBUTES**

- Pass/Not Pass Only
- Satisfactory/Unsatisfactory Only
- Repeatable
- Maximum Repeatable Credit
- Credit by Examination
- Special Fees
- Registration Approval Type
- Instructor
- Variable Title
- Honors
- Full Time Privilege
- Off Campus Experience

**COURSE DESCRIPTION**

INCLUDE REQUISITES/RESTRICTIONS:

P: Permission of Instructor. This course comprises a study conducted while the student is working with a race team. The student's experience will be overseen and monitored by IUPUI faculty.

**Cross-Listed Courses**

- 
- 
- 
- 

**Office of the Registrar**

Calumet Department Head  
Calumet School Dean  
Calumet Undergrad Curriculum Committee  
Calumet School Dean  
Calumet Undergrad Curriculum Committee  

Ft. Wayne Department Head  
Ft. Wayne School Dean  
Ft. Wayne Chancellor  
Ft. Wayne School Dean  
Ft. Wayne Undergrad Curriculum Committee  

Indianapolis Department Head  
Indianapolis School Dean  
Undergrad Curriculum Committee  
Indianapolis School Dean  
Undergrad Curriculum Committee  

North Central Department Head  
North Central School Dean  
Date Approved by Graduate Council  
North Central School Dean  
Graduate Council Secretary  

West Lafayette Department Head  
West Lafayette College/School Dean  
Date  
West Lafayette Registrar  
West Lafayette Registrar  

Graduate Area Committee Convener  
Graduate Dean  
Date  
Graduate Registrar  
Graduate Registrar  

OFFICE OF THE REGISTRAR
Supporting Document for a New Graduate Course

To: Purdue University Graduate Council
From: Faculty Member: Pete Hylton
      Department: Engineering Technology
      Campus: IUPUI
Date: 5/3/11
Subject: Proposal for New Graduate Course-Documentation Required by the Graduate Council to Accompany Registrar's Form 40G

Contact for information if questions arise:
Name: Pete Hylton
Phone Number: 317-274-7192
E-mail: phylton@iupui.edu
Campus Address: ET201T

Course Subject Abbreviation and Number: TECH 52100
Course Title: Practicum in Motorsports Design and Application

A. Justification for the Course:

- Provide a complete and detailed explanation of the need for the course (e.g., in the preparation of students, in providing new knowledge/training in one or more topics, in meeting degree requirements, etc.), how the course contributes to existing majors and/or concentrations, and how the course relates to other graduate courses offered by the department, other departments, or interdisciplinary programs.

- Justify the level of the proposed graduate course (50000- or 60000-level) including statements on, but not limited to: (1) the target audience, including the anticipated number of undergraduate and graduate students who will enroll in the course; and (2) the rigor of the course.

B. Learning Outcomes and Method of Evaluation or Assessment:

- Describe the course objectives and student learning outcomes that address the objectives (i.e., knowledge, communication, critical thinking, ethical research, etc.).

- Describe the methods of evaluation or assessment of student learning outcomes. (Include evidence for both direct and indirect methods.)

- Grading criteria (select from dropdown box); include a statement describing the criteria that will be used to assess students and how the final grade will be determined.

| Criteria | Papers and Projects |
• Identify the method(s) of instruction (select from dropdown box) and describe how the methods promote the likely success of the desired student learning outcomes.

  **Method of Instruction**: Experiential

C. **Prerequisite(s):**

• List prerequisite courses by subject abbreviation, number, and title.

• List other prerequisites and/or experiences/background required. If no prerequisites are indicated, provide an explanation for their absence.

D. **Course Instructor(s):**

• Provide the name, rank, and department/program affiliation of the instructor(s).

• Is the instructor currently a member of the Graduate Faculty?  × Yes — No (If the answer is no, indicate when it is expected that a request will be submitted.)

E. **Course Outline:**

• Provide an outline of topics to be covered and indicate the relative amount of time or emphasis devoted to each topic. If laboratory or field experiences are used to supplement a lecture course, explain the value of the experience(s) to enhance the quality of the course and student learning. For special topics courses, include a sample outline of a course that would be offered under the proposed course.

F. **Reading List (including course text):**

• A primary reading list or bibliography should be limited to material the students will be required to read in order to successfully complete the course. It should not be a compilation of general reference material.

• A secondary reading list or bibliography should include material students may use as background information.

G. **Library Resources**

• Describe the library resources that are currently available or the resources needed to support this proposed course.

H. **Example of a Course Syllabus** (While not a necessary component of this supporting document, an example of a course syllabus is available, for information, by clicking on the link below, which goes to the Graduate School’s Policies and Procedures Manual for Administering Graduate Student Programs. See Appendix K.)


(Revised and Approved by the Graduate Council 10/10)
A. Justification for Course

The Industry Advisory Board for the Motorsports Engineering program has made it clear that they consider real-world, hands-on experience to be imperative in the training of undergraduates, and therefore BS-MSTE students are required to perform and industry internship. When students return to complete an MS degree, a more in-depth industry practicum experience will be required. Students will be expected to perform a session in which they are imbedded in a race team environment to thoroughly prepare them for performance in this industry at the highest level.

B. Learning Outcomes and Method of Evaluation or Assessment

Outcomes:

1. Students will demonstrate their ability to operate effectively while imbedded in a race team, or equivalent, situation, analyzing data, synthesizing conflicting inputs, integrating the various needs of the organization and making appropriate technical decisions.
2. Students will integrate their theoretical and practical learning and apply it to a real world motorsports industry scenario.
3. Students will communicate effectively, in both oral and written communications.
**Evaluation Mechanisms:**

Individual project reports, interim and final, evaluated using industry-type assessment approaches plus evaluation by the industrial organization where the student is imbedded.

**Grading Criteria:** Papers and Projects with a scale of

90-10=A, 80-90=B, 70-80=C, 60-70=D, Below 60=F

**Method of Instruction:** Experiential

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C. Prerequisites

Permission of the Instructor

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D. Course Instructor:

Pete Hylton  
Associate Professor & Director of Motorsports Engineering  
Indiana University Purdue University Indianapolis  
799 W. Michigan St. - ET201T  
Indianapolis, IN 46202  
317-274-7192  
phylton@iupui.edu  
or another suitable member of the Motorsports Engineering faculty.

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E. Course Outline

As an experiential learning course of a practicum nature, this activity more closely reflects an internship environment, and as such each student’s activities and involvements will differ, based on situation, and producing a common course outline is not practical.

However, there are common aspects expected to be contained in all such student practicum experiences in motorsports. The student must be able to integrate into the motorsports team or organization in which they are imbedded, adapting to the organization’s policies, procedures, purposes, and activities. They must be able to operate effectively within the organizational structure of that entity, interfacing with internal and external individuals appropriate to the specific position. They must synthesize the skills developed in their university studies for application in the real world environment that they face, applying appropriate problem solving methodologies and analysis skills.
Examples of engagements that would qualify as a practicum experience could include 1.) An assignment as an assistant race engineer for a professional or semi-professional race team for the entire race season, running from pre-season preparation through the competition events, overseeing the technical preparations of a major system or subsystem. 2.) An assignment with a business supporting the teams in a professional or semi-professional race series, interfacing with them to assess their needs, and analyzing those needs and designing means of meeting those technical needs. 3.) Functioning as the technical team manager for an amateur or semi-professional race team overseeing and coordinating all technical aspects of the operation including project management.

F. Reading List


Required Readings from:
Racecar Engineering magazine
Subscription available for either printed or on-line subscription at http://www.racecar-engineering.com/

Automotive Engineering International magazine
Subscription available for either printed or on-line subscription at http://www.sae.org/mags/aei/


G. Library Resources

Motorsports Engineering department currently maintains a library of pertinent motorsports industry magazines and design resource texts.

H. Course Syllabus

Attached as separate document
Indiana University Purdue University Indianapolis (IUPUI)
School of Engineering & Technology
Department of Engineering Technology
Master of Science in Technology (MS-TECH) – Motorsports Concentration

Syllabus

Course Number: TECH 52100

Course Title: Practicum in Motorsports Design and Application

Credit Hours: 4

Class Times: tbd

Class Location: tbd

Instructor: Pete Hylton
Phone: 317-274-7192
email: phylton@iupui.edu
Office: E201T

Prerequisites: Permission of instructor.

Course Description:

This course comprises a study conducted while the student is working with a race team or associated motorsports industry organization. The student’s experience will be overseen and monitored by IUPUI faculty.

A project relevant to the student’s individual situation will be determined by mutual agreement between the student, supervising faculty member, and industrial supervisor. The project will integrate and synthesize the various aspects of the motorsports industry in which the student has been imbedded. An industry quality technical presentation and technical report will be required.

This activity is consistent with the recommendations of the IUPUI Motorsports Engineering Industrial Advisory Board which has made it clear that graduates of this program need and in-depth, hands-on, real-world experiential learning activity in the motorsports industry.

Educational Objectives/Course Outcomes:
1. Students will demonstrate their ability to operate effectively while imbedded in a race team, or equivalent, situation, analyzing data, synthesizing conflicting inputs, integrating the various needs of the organization and making appropriate technical decisions.

2. Students will integrate their theoretical and practical learning and apply it to a real world motorsports industry scenario.

3. Students will communicate effectively, in both oral and written communications.

**Course Content/Topics:**

As an experiential learning course of a practicum nature, this activity more closely reflects an internship environment, and as such each student’s activities and involvements will differ, based on situation, and producing a common course outline is not practical.

However, there are common aspects expected to be contained in all such student practicum experiences in motorsports. The student must be able to integrate into the motorsports team or organization in which they are imbedded, adapting to the organization’s policies, procedures, purposes, and activities. They must be able to operate effectively within the organizational structure of that entity, interfacing with internal and external individuals appropriate to the specific position. They must synthesize the skills developed in their university studies for application in the real world environment that they face, applying appropriate problem solving methodologies and analysis skills.

Examples of engagements that would qualify as a practicum experience could include 1.) An assignment as an assistant race engineer for a professional or semi-professional race team for the entire race season, running from pre-season preparation through the competition events, overseeing the technical preparations of a major system or subsystem. 2.) An assignment with a business supporting the teams in a professional or semi-professional race series, interfacing with them to assess their needs, and analyzing those needs and designing means of meeting those technical needs. 3.) Functioning as the technical team manager for an amateur or semi-professional race team overseeing and coordinating all technical aspects of the operation including project management.

Required Readings from:
Racecar Engineering magazine
Subscription available for either printed or on-line subscription at http://www.racecar-engineering.com/

Automotive Engineering International magazine
Subscription available for either printed or on-line subscription at http://www.sae.org/mags/aei/

Recommended Text: Hands-On Race Car Engineering, by John Glimmerveen,
published by Society of Automotive Engineers (SAE), ISBN: 0-7680-0898-0

Evaluation:

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Project Report</td>
<td>60%</td>
</tr>
<tr>
<td>Interim Report</td>
<td>20%</td>
</tr>
<tr>
<td>Performance Evaluation</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

The final report details all activities of the student’s involvement in the practicum experience, including tasks performed analyses performed, and problems solved. The interim report will cover the same material as the final report, but at an intermediate stage so that student and faculty member can ensure that the practicum is on the right track. The rubric which follows will be used for both. The first line of the rubric deals with the understanding of the goals for the practicum experience. In other words, does the student understand the organization's role and purpose in the motorsports industry and his/her role within the organization during the practicum. The second line addresses the fact that the student is certain to have multiple responsibilities/assignments during the practicum. Does he/she demonstrate a clear understanding of those activities, how they relate to the overall operation and objectives of the organization, and does he/she understand his/her role/responsibility relative to those activities. The third line of the rubric deals with the execution of those activities. This is different from merely understanding them, but relates to how well the student carries them off, independently, and to the benefit of the organization. The forth line of the rubric deals with how well the student demonstrated the ability to lead, or at least function independently in their role. And the last two rubric lines deal with the mechanics of the written report. Good technical communication is key to success in an engineering organization.

Based on experience with the undergraduate Motorsports Engineering program, there is a need to be fairly flexible with regard to the configuration of practicum’s. The internship and placement office will work with the motorsports engineering faculty to try to arrange placements for students. However, some students will likely come to the program with significant motorsports industry connections as well, and should their connections yield a viable placement, it would be agreeable to use those, so long as the faculty member involved concurs that the activity is meaningful for the student’s education. Whether the placement is paid or unpaid may well vary between industry organizations, as it has been
found to do in motorsports engineering undergraduate program. The policies and procedures already in place through the internship and placement office will be utilized (perhaps with minor modifications) for the MS program. For each specific student placement, an outline of expectations will be established before beginning the practicum, to ensure that the student, the faculty member, and the organization are on the same page

**Rubric for Assessment of Individual Project**

<table>
<thead>
<tr>
<th>EXCELLENT</th>
<th>HIGH</th>
<th>MODERATE</th>
<th>LOW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong understanding of goals of the experience</td>
<td>Good understanding of goals of the experience</td>
<td>Average understanding of goals of the experience</td>
<td>Inadequate understanding of goals of the experience</td>
</tr>
<tr>
<td>Thoroughly understand multiple practicum related activities.</td>
<td>Thoroughly understand at least two practicum related activities.</td>
<td>Thoroughly understand at least one practicum related activity.</td>
<td>Demonstrate inadequate understanding of practicum related activities.</td>
</tr>
<tr>
<td>Thoroughly execute multiple practicum related activities.</td>
<td>Thoroughly execute at least one practicum related activity.</td>
<td>Assist with execution of multiple practicum related activities.</td>
<td>Assist with execution of at least one practicum related activity.</td>
</tr>
<tr>
<td>Show how participation exhibited organizational leadership.</td>
<td>Show how participation led to organization productivity.</td>
<td>Show how participation supported organization productivity.</td>
<td>Participation had minimal effect on organization productivity</td>
</tr>
<tr>
<td>No mechanical, grammar, or typographical errors.</td>
<td>Few mechanical, grammar, or typographical errors.</td>
<td>Effectively communicated despite mechanical, grammar, or typographical errors.</td>
<td>Ineffectively communicated due to mechanical, grammar, or typographical errors.</td>
</tr>
<tr>
<td>Understanding of concepts is clearly communicated.</td>
<td>Understanding of concepts is adequately communicated.</td>
<td>Understanding of concepts is hindered by presentation.</td>
<td>Understanding of concepts is not clearly communicated.</td>
</tr>
</tbody>
</table>

**Grading Scale:** 90-100 = A, 80-90 = B, 70-80 = C, 0-70 = F  
+/- may be given at professor’s discretion

**Cheating:**

Cheating is considered to be an attempt to use or provide unauthorized assistance, materials, information, or study aids in any form and in any academic exercise or environment.

a. A student must not use external assistance on any “in-class” or “take-home” examination, unless the instructor specifically has authorized external assistance. This prohibition includes, but is not limited to, the use of tutors, books, notes, calculators, computers, and wireless communication devices.

b. A student must not use another person as a substitute in the taking of an examination or quiz, nor allow other persons to conduct research or to prepare work, without advance authorization from the instructor to whom the work is being submitted.

c. A student must not use materials from a commercial term paper company; files of papers prepared by other persons, or submit documents found on the
Internet. A student must not collaborate with other persons on a particular project and submit a copy of a written report that is represented explicitly or implicitly as the student's individual work.

d. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on fieldwork.

e. A student must not steal examinations or other course materials, including but not limited to, physical copies and photographic or electronic images.

f. A student must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor or program to whom he work is being submitted.

g. A student must not, without authorization, alter a grade or score in any way, nor alter answers on a returned exam or assignment for credit.

Fabrication:

A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citation to the sources of information.

Plagiarism:

Plagiarism is defined as presenting someone else’s work, including the work of other students, as one’s own. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged, unless the information is common knowledge. What is considered “common knowledge” may differ from course to course.

a. A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgment.

b. A student must give credit to the originality of others and acknowledge indebtedness whenever:
   1. Directly quoting another person’s actual words, whether oral or written;
   2. Using another person’s ideas, opinions, or theories;
   3. Paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;
   4. Borrowing facts, statistics, or illustrative material; or
   5. Offering materials assembled or collected by others in the form of projects or collections without acknowledgment.

Facilitating Academic Dishonesty:

Facilitating academic dishonesty is when a student aids or attempts to aid another student in committing academic misconduct. Examples of such activities might be:

- Allowing another student to copy answers on examinations.
- Writing a paper for another student.
Interference:

Interference is when a student prevents another student's work from being completed or evaluated properly. Examples might include:

- Stealing or changing another student's work before it is evaluated.
- Destroying another student's work.
- Stealing or defacing shared necessary resources to deprive others of their use.
- Offering bribes or favors to affect a grade or an evaluation of academic work.
- Making threats to affect a grade or an evaluation of academic work.

Violation of Course Rules:

Violation of course rules is when a student fails to abide by the rules stated in the course syllabus when those rules are related to course content or to enhancement of the learning process in the course. Examples of common violations include:

- Working with a group when a project is intended to be for each individual.
- Using unauthorized materials for examinations or projects.

Faculty Action on Misconduct:

All faculty are required to report academic misconduct to the university and to examine any accusations of academic misconduct from students.

IUPUI Nondiscrimination Policy for People with Disabilities:

Indiana University-Purdue University Indianapolis is committed to the spirit and letter of the Americans with Disabilities Act. Heretofore, the University has been subject to the nondiscrimination provisions of Sections 503 and 504 of the Rehabilitation Act of 1973. Under Sections 503 and 504, the University has instituted various administrative policies, practices and procedures to ensure nondiscrimination against individuals with disabilities. These policies, practices and procedures have been amended to comply with the requirements of the Americans with Disabilities Act.

Accordingly, "no qualified individual with a disability shall, by reason of such disability, be either excluded from participation in or be denied the benefits of the services, programs, or activities" of Indiana University-Purdue University Indianapolis. Moreover, no qualified individual with a disability shall be discriminated against because of the disability of that individual with regard to job application procedures, the hiring or discharge of employees, compensation, advancement, job training, and other terms, conditions and privileges of employment.

General Classroom Policy:
1. Keep cell phones/pagers on silent mode.
2. If you need to leave the classroom to return a call, or page, or to use the restroom – do so quietly so as not to disturb your classmates.
3. No cell phones, pagers, or PDA’s will be allowed during tests.
4. Anyone caught cheating on a test will receive a zero.
5. Copying from each other on independent projects or lab reports will result in severe penalty to both parties.
6. Late assignments (unless due confirmed circumstances based on circumstances consistent as qualifying as a confirmed absence) will only be accepted with a significant penalty for lateness.
7. Absences – it is your responsibility to be in class and that is where you are expected to be. Acceptable absences for which the instructor will work with you include your illness (with immediate phone or email notification to the instructor and verification afterwards) severe illness of immediate family member (ditto) or mandatory work assignments (with maximum advance notice and verification).
8. On course will be used to inform students of intermediate grades, team grades, schedule changes, etc. when necessary.
New Course  IN TECH 52100
Course Request Key Fields

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<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Requesting Campus: IN-IUPUI</td>
</tr>
<tr>
<td>2</td>
<td>Matching Course: No</td>
</tr>
<tr>
<td>3</td>
<td>School: TECH-Purdue School of Technology</td>
</tr>
<tr>
<td>4</td>
<td>Subject: TECH-Technology</td>
</tr>
<tr>
<td>5a</td>
<td>Course Number: 52100</td>
</tr>
<tr>
<td>5b</td>
<td>Has course number been reserved with <a href="mailto:usssorc@indiana.edu">usssorc@indiana.edu</a>, University Student Services and Systems? Yes</td>
</tr>
<tr>
<td>6</td>
<td>Credit Type: Graduate</td>
</tr>
<tr>
<td>7</td>
<td>Is this a Purdue Course? Yes</td>
</tr>
<tr>
<td>8a</td>
<td>Course Title: Practicum in Motorsports Design and Application</td>
</tr>
<tr>
<td>8b</td>
<td>Recommended Abbreviation (30 characters including spaces): Motorsports Practicum</td>
</tr>
</tbody>
</table>

Course Catalog Attributes

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>9</td>
<td>Academic Career: Graduate</td>
</tr>
<tr>
<td>10</td>
<td>Effective Term (anticipated): Fall 2012</td>
</tr>
<tr>
<td>11</td>
<td>Credit Hours: Fixed at 4</td>
</tr>
<tr>
<td>12</td>
<td>Contact Hours: Fixed at 4</td>
</tr>
<tr>
<td>13</td>
<td>Is S-F grading approval being requested? No</td>
</tr>
<tr>
<td>14</td>
<td>Is variable title approval being requested? No</td>
</tr>
<tr>
<td>15</td>
<td>Prerequisites/Corequisites (Information Only): P: Permission of instructor</td>
</tr>
<tr>
<td>16</td>
<td>Course Description: This course comprises a study conducted while the student is working with a race team. The student's experience will be overseen and monitored by IUPUI faculty.</td>
</tr>
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</table>

Course Attributes for Scheduling

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>17</td>
<td>Equivalent Courses: none</td>
</tr>
<tr>
<td>18a</td>
<td>Repeatable for Credit? No</td>
</tr>
<tr>
<td>18b</td>
<td>Total Career Credit Hours Allowed:</td>
</tr>
<tr>
<td>18c</td>
<td>Total Career Completions Allowed:</td>
</tr>
<tr>
<td>18d</td>
<td>Allow multiple enrollments in term?</td>
</tr>
<tr>
<td>19a</td>
<td>Type of Instructional Experience (Select primary component): Practicum</td>
</tr>
<tr>
<td>19b</td>
<td>Additional component(s) that apply: Field Trip Independent Study Practicum Readings</td>
</tr>
<tr>
<td>20</td>
<td>Instruction Mode (select all that apply): Correspondence</td>
</tr>
<tr>
<td>21</td>
<td>Instructor Name: Prof. Pete Hylton</td>
</tr>
<tr>
<td>22</td>
<td>Estimated Enrollment: 15</td>
</tr>
</tbody>
</table>
Additional Course Information

23. Estimated Enrollment Percent Expected to be Graduate Students: 100
24. Frequency of Schedule: As Needed
25. Course Typically Offered: Summer Term
26. Will this course be required for majors? Yes

27. Justification for New Course:
The Industry Advisory Board for the Motorsports Engineering program has made it clear that they consider real-world, hands-on experience to be imperative in the training of motorsports engineering students. For an MS degree, an in-depth industry practicum experience will be required.

28 a. Does this course overlap with existing courses? No

b. Please explain:

c. Have you contacted the appropriate department, school, etc. affected by the overlap?

29. Are the necessary reading materials currently available in the appropriate library? Yes

30. Do you anticipate this course will require a special fee? (Information Only) No

Essential Syllabus Information

ESI 1. Course Content: As an experiential learning course of a practicum nature, this activity more closely reflects an internship environment, and as such each student's activities and involvements will differ, based on situation, and producing a common course outline is not practical. However, there are common aspects expected to be contained in all such student practicum experiences in motorsports. The student must be able to integrate into the motorsports team or organization in which they are imbedded, adapting to the organization's policies, procedures, purposes, and activities. They must be able to operate effectively within the organizational structure of that entity, interfacing with internal and external individuals appropriate to the specific position. They must synthesize the skills developed in their university studies for application in the real world environment that they face, applying appropriate problem solving methodologies and analysis skills.

Examples of engagements that would qualify as a practicum experience could include 1.) An assignment as an assistant race engineer for a professional or semi-professional race team for the entire race season, running from pre-season preparation through the competition events, overseeing the technical preparations of a major system or subsystem. 2.) An assignment with a business supporting the teams in a professional or semi-professional race series, interfacing with them to assess their needs, and analyzing those needs and designing means of meeting those technical needs. 3.) Functioning as the technical team manager for an amateur or semi-professional race team overseeing and coordinating all technical aspects of the operation including project management.
### Representative Bibliography or Resources:

- Racecar Engineering magazine, subscription available for either printed or on-line subscription at http://www.racecar-engineering.com/
- Automotive Engineering International magazine, subscription available for either printed or on-line subscription at http://www.sae.org/mags/aei/

### Teaching and Learning Methods:

This course comprises a study conducted while the student is working with a race team or associated motorsports industry organization. The student's experience will be overseen and monitored by IUPUI faculty. A project relevant to the student's individual situation will be determined by mutual agreement between the student, supervising faculty member, and industrial supervisor. The project will integrate and synthesize the various aspects of the motorsports industry in which the student has been imbedded. An industry quality technical presentation and technical report will be required. This activity is consistent with the recommendations of the IUPUI Motorsports Engineering Industrial Advisory Board which has made it clear that graduates of this program need an in-depth, hands-on, real-world experiential learning activity in the motorsports industry.

### Learning Outcome/Objectives:

1. Students will demonstrate their ability to operate effectively while imbedded in a race team, or equivalent, situation, analyzing data, synthesizing conflicting inputs, integrating the various needs of the organization and making appropriate technical decisions.
2. Students will integrate their theoretical and practical learning and apply it to a real world motorsports industry scenario.
3. Students will communicate effectively, in both oral and written communications.

### Learning Assessment:

- Individual Project Report 60%
- Interim Report 20%
- Performance Evaluation 20%

The final report details all activities of the student's involvement in the practicum experience, including tasks performed, analyses performed, and problems solved. The interim report will cover the same material as the final report, but at an intermediate stage so that student and faculty member can ensure that the practicum is on the right track. The rubric shown in the syllabus will be used for both.
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