

- Request for New Concentration
- Request for Revision of Existing Concentration
- Request for Deletion of Existing Concentration

**PURDUE UNIVERSITY
GRADUATE SCHOOL**

Request for a Concentration

Heads of graduate programs may request that one or more concentration(s) be established within their majors, to allow a specialized area of graduate study to be reflected on a student's final transcript.

Graduate Program (Major) Technology Major Code TECH

Title of Concentration Motorsports

Effective Session: Fall Spring Summer Academic year: 201 4 - 201 5

Degrees to which this concentration applies:

- Master of Science
- Master of Arts
- Doctor of Philosophy
- Other _____

Campus(s) at which this concentration applies:

- Calumet
- Fort Wayne
- Indianapolis
- North Central
- West Lafayette

Justification: Please address the following topics (in order) when requesting a concentration: (Attach additional sheets as necessary.)

- Statement of the mission of the proposed concentration including, but not limited to, the need for the concentration, the target audience, the relationship to the major under which the concentration will be listed, and the relationship to other concentrations in the degree program
- Focus of the research or professional program
- Participating faculty, including name, academic rank, and departmental affiliation
- Currently enrolled or expected number of students
- Core courses and a description of how they fit into and support the degree program. List only the courses required for this concentration.
- Learning outcomes (e.g., unique knowledge or abilities, capacity to identify and conduct original research, ability to communicate to peer audiences, critical thinking and problem-solving skills, etc.).

Recommended by:

John E. Hill 02/02/2015
 Head of the Graduate Program Date

John E. Hill 03/03/2015
 Academic Dean Date

Approved by:

Phillip L. Pope 3/11/15
 Graduate School Dean (West Lafayette) Date

Concentration Code X091
(To be assigned by the Office of the Registrar if this request is for a new concentration)

Additional Authorizing Signature (if applicable)

Date

Ms. Valerie Lim Diemer, wvlim@iupui.edu
Contact person (& e-mail address) for questions regarding form

Please submit this form to the Graduate School, PWL. An approved copy will be returned to the department and academic college/school at the campus recommending the request.

Justification to Accompany Form GS-25

Motorsports is an existing Concentration under the Master of Science in Technology graduate program in the Purdue School of Engineering and Technology at IUPUI.

Presently, the Core academic requirements included:

<u>Course</u>	<u>Project Option</u>	<u>Course-Only Option</u>
TECH 50700 – Measurement & Evaluation in Industry	Yes	Yes
TECH 50800 – Quality and Productivity in Industry & Tech.	Yes	Yes
TECH 64600 – Analysis of Research in Industry & Tech.	Yes	Yes
TECH 58100 - Directed Project with Motorsports Theme	Yes	

This proposal seeks to alter the Core by replacing TECH 64600 with TECH 50400. This is necessary because TECH 50400 includes components of TECH 64600 “Analysis of Research in Industry and Technology” that are specific to the discipline of Motorsports and will therefore be of greater value and benefit to our graduate students. The proposed Core academic requirements include:

<u>Course</u>	<u>Project Option</u>	<u>Course-Only Option</u>
TECH 50700 – Measurement & Evaluation in Industry	Yes	Yes
TECH 50800 – Quality and Productivity in Industry & Tech.	Yes	Yes
TECH 50400 – Motorsports Project Management	Yes	Yes
TECH 58100 - Directed Project with Motorsports Theme	Yes	

The current course, TECH 64600, focuses primarily on the differences in qualitative and quantitative research approaches as applied to a non-technical research project. It does not particularly aid a student who is interested in performing technical research such as an engineer or technician in the motorsports industry is most likely to become involved with. Furthermore, it does not particularly aid the students in the MS-TECH Motorsports Concentration who are pursuing the Project Option and performing a Directed Study Project on a technical research topic related to motorsports performance, safety, reliability, or advanced research.

It is therefore desired to replace TECH 64600 in the program core with TECH 50400, which focuses on technical project management, as performed by engineers and technicians in the motorsports industry, encompassing both industrial-based projects and race-team based projects. This course will be directly applicable to students pursuing the MS-TECH Motorsports Concentration and the types of projects they are likely to find themselves managing in industry. It will also aid students pursuing the Project Option and performing a Directed Study Project to plan, scope, budget, and execute their research project using approaches common to the motorsports industry.

Assuming approval, a MS-TECH Plan of Study with a Concentration in Motorsports would be as follows:

Master of Science in Technology – Motorsports

(with proposed change to core)

<u>MS TECH Core Courses</u>	Option 1 (w/ project)	Option 2 (classes only)
TECH 50700 – Measurement & Evaluation in Industry (campus & on-line)	3 credits	3 credits
TECH 50800 – Quality and Productivity in Industry & Technology (ditto)	3 credits	3 credits
TECH 50400 – Motorsports Project Management	3 credits	3 credits
TECH 58100 - Directed Project with Motorsports Theme	3 credits	

Student Selected Courses:

minimum of:	9 credits	12 credits
maximum of:	21 credits	24 credits

Motorsports Core Courses - Choose from

MSTE 48200 * - Motorsports Aerodynamics (3cr)

MSTE 47200 * – Vehicle Dynamics (3cr)

MSTE 42600 * – IC Engines (3cr)

ME 50400 – Automotive Controls (3cr)

TECH 50400 - Motorsports Project Management (3cr)

A course exploring leadership and decision making aspects of project management.

TECH 52100 - Practicum in Motorsports Design and Application (4cr)

Study conducted while the student is working with a race team. The student’s experience will be overseen and monitored by IUPUI faculty.

TECH 53100 - Motorsports Topics Seminar (2cr)

Featuring a variety of special topics and guest speakers tying together the concepts of design, modeling, and testing from an undergraduate program in motorsports engineering.

TECH 58200 – Motorsports Special Topics (1-3cr)

A variety of special topics courses are offer, including, but not limited to: Advanced Vehicle Dynamics, Advanced Aerodynamics, Continuous Combustion Engines with others to be added – you may take multiple classes under this number

* = maximum of 6 credit hours of 400 level courses allowed

Other Courses – select from:

remaining credits

TECH 58100 – Advanced Computational Methods for Engr Tech (3cr)

MATH 53700, MATH 52800, or MATH 57800 (3cr)

Adv Stress Analysis (TECH 58100, ME 55000 or equivalent) (3cr)

Adv Vibrations (TECH 58100, ME 56300 or equivalent) (3cr)

Adv Materials (TECH 58100, ME 55800 or equivalent) (3cr)

alternate courses with approval of advisor

Total:	33 credits	33 credits
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