

# New Curriculum or Curricular Change EFD Template



College of Engineering

Engineering Faculty Document No.:

EFD#120-25

January 28, 2025

**TO:** The Engineering Faculty  
**FROM:** The Faculty of the School of Mechanical Engineering  
**RE:** New Engineering Concentration

The Faculty of the School of Mechanical Engineering has approved the following new Concentration from the College of Engineering. This action is now submitted to the Engineering Faculty with a recommendation for approval.

**TITLE:**

Sports Engineering

**DESCRIPTION:**

The proposed concentration will be listed under the existing MSME (Master of Science in Mechanical Engineering) degree option of Mechanical Engineering (ME). It will require twelve credit hours of core course work with an emphasis on Sports Engineering.

**RATIONALE:**

The Sports Engineering concentration is applicable for students to learn skills that are in high demand in practical sports engineering, such as sports entrepreneurship, biomechanics, data analytics and management, immediately after completion of their bachelor's degree in an engineering program or for industry professionals wishing to resume their studies to complete a Master's degree. The program is not intended to lead to PhD research.

The target audience consists but is not limited to: former collegiate, Olympic, and professional athletes looking to enhance their career and gain engineering and managerial skills; current undergraduate and recent graduates wishing to undertake graduate studies, but still wanting to enter industry quickly; domestic and international students who want an engineering degree that is more industry-oriented; practicing professionals who wish to attain additional technical or specialized expertise in order to improve their career pathways.

This concentration program will only be offered to graduate students admitted to the Indianapolis campus and allow students to take advantage of the opportunities provided by the association with the Ray Ewry Sports Engineering Center. As this professional concentration moves to the School of Mechanical Engineering, enrollment is expected to grow significantly from: brand recognition, increased resources including access to our students and faculty, dedicated program management, and marketing & communications campaigns, while still having an interdisciplinary flavor.

A handwritten signature in black ink, appearing to read 'Eckhard A. Groll'.

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Eckhard A. Groll, Department Head of the School of Mechanical Engineering

Link to Curriculog entry: <https://purdue.curriculog.com/proposal:31958/form>

Core Course—12 credits required	Title	Credits
BME 54200	Cell Tissue Mechanics	3
BME 58100	Fund. Of MEMS & Micro-Integrated Systems	3
ECE 56200	Introduction to Data Management	
ECE 57000	Artificial Intelligence	3
IE 57700	Human Factors in Engineering	3
ME 55300	Product & Process Design	3
ME 57700	Human Motion Kinetics	3
MSE 52400	Mechanical Behavior of Polymers	3
MSE 60000	Materials Engineering Fundamentals	3

Sample POS for Sports Engineering Concentration: 12 credits of specific technical courses are required.

Course	Title	Semester	Credits
ME 55300	Product & Process Design	Fall	3
Prof. Dev course	From list of allowable Prof. Dev courses	Fall	3
Tech Elective course	From list of allowable tech elective	Fall	3
BME 58100	Fund. Of MEMS & Micro-Integrated Systems	Spring	3
Prof. Dev course	From list of allowable Prof. Dev courses	Spring	3
Tech Elective course	From list of allowable tech elective	Spring	3
Math course	From list of allowable math courses	Summer	3
ECE 57000	Artificial Intelligence	Fall	3
MSE 52400	Mechanical Behavior of Polymers	Fall	3
Prof. Dev course	From list of allowable Prof. Dev courses	Fall	3
		Total Credits	30