

## Engineering Dual Degree Requirements

### Motorsports Engineering & Computer Science

University Core Curriculum				Common Engineering			
<b>Common Core Requirements</b>				<b>Mathematics</b>			
FYS	101	First Year Seminar	Credits	MA	106	Calculus & Analytical Geometry 1 <sup>+</sup>	Credits
FYS	102	First Year Seminar	3	MA	107	Calculus & Analytical Geometry 2 <sup>+</sup>	4
GHS	201-209	Global and Historical Studies	3	MA	208	Calculus & Analytical Geometry 3	4
GHS	201-209	Global and Historical Studies	3	MA	215	Linear Algebra <sup>+</sup>	3
GHS	201-209	Global and Historical Studies	3	MA	334	Differential Equations	3
<b>General Core Requirements</b>				<b>Science</b>			
TI	Text and Ideas (TI 244-PL) <sup>1</sup>		Credits	CH	105	General Chemistry 1	Credits
TI	Text and Ideas (TI 244-PL) <sup>1</sup>		3	CH	106	General Chemistry 2	5
PCA	Perspectives in the Creative Arts		3	PH	201	Introduction to Analytical Physics 1	5
SW	The Social World		3	PH	202	Introduction to Analytical Physics 2	5
AR	<i>Analytical Reasoning (exempt)</i>		3				
NW	<i>The Natural World (exempt)</i>		5				
PWB	Physical Well-Being		1				
			Core Credits				
			22(30)				
<b>Additional Core Requirements</b>				<b>Engineering</b>			
BCR	Butler Cultural Requirement		8 events	DD	190	Elementary Engineering Design	Credits
BCR	Butler Cultural Requirement		8 events	DD	297	MATLAB	3
ICR	Indianapolis Community Requirement		1 course	CS	142	Intro to Computer Science & Prog	1
SAC	Speaking Across the Curriculum		1 course	CS	142	Intro to Computer Science & Prog	3
WAC	Writing Across the Curriculum		1 course				
<b>Liberal Arts and Science Requirements</b>				<b>Other</b>			
Foreign Language (min 6 cr 200 level or above)			Credits	COM	101	Rhetoric and the American Demo	Credits
Spanish, French, German, Chinese, Latin			6-14	TCM	250	Career Planning for Engineers	3
			Credits	TCM	360	Comm in Engineering Practice (WAC/SAC)	1
			28-36	ENGR	200	Engineering Internship	2
			Credits	ENGR	200	Engineering Internship	1
			28-36	Credits 52			
<b>Computer Science</b>				<b>Motorsports Engineering</b>			
CS	151	Foundations of Computing I	Credits	PHIL	120	<i>Ethics</i> <sup>1</sup>	Credits
CS	151	Foundations of Computing I	3	PHIL	120	<i>Ethics</i> <sup>1</sup>	-
CS	248	Object-Oriented Prog & Data Structures	5	PH	351	Analog Electronics (WAC)	4
CS	248	Object-Oriented Prog & Data Structures	5	MA	359	Probability and Statistics	3
CS	252	Foundations of Computing II	3	ME	200	Thermodynamics	3
CS	252	Foundations of Computing II	3	ME	270	Basic Mechanics I	3
CS	321	Computer Organization	3	ME	272	Mechanics of Materials	3
CS	321	Computer Organization	3	ME	274	Basic Mechanics II	3
CS	333	Database Systems	3	ME	310	Fluid Mechanics	3
CS	333	Database Systems	3	ME	325	Fluids Lab	1
CS	351	Algorithms	3	ME	344	Intro to Engineering Materials	3
CS	351	Algorithms	3	ME	482	Control Systems	3
CS	383	EPICS (ICR)	3	MET	338	Manufacturing Processes	4
CS	383	EPICS (ICR)	3	MSTE	272	Introduction to Motorsports	3
CS	452	Parallel Algorithm Design & Prog	3	MSTE	297	Modeling for Motorsports	2
CS	452	Parallel Algorithm Design & Prog	3	MSTE	298	Computer Modeling & Programming	2
CS	473	Topics in Computer Science <sup>2</sup>	-	MSTE	298	Computer Modeling & Programming	2
CS	473	Topics in Computer Science <sup>2</sup>	-	MSTE	312	Business of Motorsports	3
CS	485	Computer Ethics (WAC)	1	MSTE	317	Motorsports Practicum II	1
CS	485	Computer Ethics (WAC)	1	MSTE	317	Motorsports Practicum II	1
SE	361	Object-Oriented Design (SAC)	3	MSTE	320	Motorsports Design I	3
SE	361	Object-Oriented Design (SAC)	3	MSTE	320	Motorsports Design I	3
Theory Course			3	MSTE	330	Data Acquisition in Motorsports I	2
CS	441	Organization of Prog Languages	3	MSTE	331	Data Acquisition in Motorsports II <sup>2</sup>	3
CS	441	Organization of Prog Languages	3	MSTE	331	Data Acquisition in Motorsports II <sup>2</sup>	3
CS	447	Computer Graphics	3	MSTE	340	Dynamic Systems and Signals	3
CS	447	Computer Graphics	3	MSTE	340	Dynamic Systems and Signals	3
CS	451	Theory of Computation	3	MSTE	350	Comp Aided Design & Analysis	3
CS	451	Theory of Computation	3	MSTE	350	Comp Aided Design & Analysis	3
CS	458	Intro to Cryptography and Cryptanalysis	3	MSTE	414	Motorsports Design II	3
CS	458	Intro to Cryptography and Cryptanalysis	3	MSTE	414	Motorsports Design II	3
Systems Course			3	MSTE	417	Motorsports Practicum III	1
CS	431	Theory of Operating Systems*	3	MSTE	417	Motorsports Practicum III	1
CS	431	Theory of Operating Systems*	3	MSTE	426	Internal Combustion Engines	3
CS	431	Theory of Operating Systems*	3	MSTE	426	Internal Combustion Engines	3
CS	435	Computer Networks	3	MSTE	472	Vehicle Dynamics	3
CS	435	Computer Networks	3	MSTE	472	Vehicle Dynamics	3
SE	461	Managing Software Development	3	MSTE	482	Motorsports Aerodynamics	3
SE	461	Managing Software Development	3	MSTE	482	Motorsports Aerodynamics	3
			Credits	Tech Electives (*credits used toward 6 cr req)			
			36	Tech Electives (*credits used toward 6 cr req)			
			36	Credits 74			
<b>190 - 198 Total Credits</b>							

<sup>1-2</sup> used as equivalents for degree requirements<sup>+</sup> also required for Computer Science major