SAMPLE CURRICULUM 2023-2024 Engineering Science

YEAR 1			<u>YEAR 2</u>		
FALL	WINTER	SPRING	FALL	WINTER	SPRING
ENGR 100 (3 cr) The OSU Engineering Student	ENGR 102 (3 cr) Design Engineering & Problem Solving	ENGR 103 (3 cr) Eng Computation & Algorithmic Thinking	ENGR 211 (3 cr) Statics	ENGR 212 (3 cr) Dynamics	ST 314 (3 cr) Intro to Statistics for Engineers (Taught Spring & Summer)
		Prereq: ENGR 102, MTH	Prereq: MTH 252	Preq: ENGR 211, PH 211	Prereq: MTH 252
CH 201 (3 cr) Chemistry for Engineering Majors	CH 202 (3 cr) Chemistry for Engineering Majors	CH 205 (1 cr) Lab for CH 202	ENGR 201 (3 cr) Electrical Fundamentals I	ENGR 202 (3 cr) Electrical Fundamentals II	PERSPECTIVES (4 cr) Biological Science (see bacc core guide)
Pre-req: MTH 111Z	Prereq: CH 201	Prereq/coreq: CH 202	Prereq: MTH 251 & 252	Prereq: ENGR 201	
MTH 251 (4 cr) Differential Calculus (Taught Fall, Winter & Summer)	MTH 252 (4 cr) Integral Calculus (Taught Winter, Spring & Summer)	MTH 254 (4 cr) Vector Calculus I (Taught Fall, Spring, & Summer)	MTH 256 (4 cr) Applied Differential Equations	MTH 264 (2 cr) Intro to Matrix Algebra	PERSPECTIVES (3 cr) Cultural Diversity (see bacc core guide)
Preq: MTH 112Z or place.	Prereq: MTH 251		Prereq: MTH 254	Prereq: MTH 252	
WR 121Z (4 cr) English Composition (Taught Fall, Winter, & Spring)	PERSPECTIVES Social Processes & Institutions ECON 201 (4 cr)	WR 227Z (4 cr) Technical Writing (Taught Winter, Spring & Summer)	PH 211 (4 cr) General Physics with Calculus	PH 212 (4 cr) General Physics with Calculus	PH 213 (4 cr) General Physics with Calculus Prereq: PH 212 & MTH
	Microeconomics	Preq: WR 121Z	Prereq: MTH 251 & Co-	Preq: PH 211	204
COMM 1112 (4 cr) Public Speaking (Taught Fall & Winter) or COMM 114 (3 cr) Argument & Critical Discourse (Taught Spring)		HHS 231(2 cr) & HHS 241 or PAC (1 cr) (Taught Fall, Winter, Spring) Lifetime Fitness for Health (All)	CS 162 (4 cr) Introduction to Computer Science II Prereq: ENGR 103 or CS 161	PERSPECTIVES (3 cr) Difference, Power & Discrimination (see bacc core guide)	

NOTES: •

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 - ENGR 415 pre-requisites: ENGR 390, ME 311, ESE 330, WR 227Z
 - Restricted electives can be selected from an approved list

SAMPLE CURRICULUM Engineering Science – ESE Option

	<u>YEAR 3</u>			YEAR 4	
FALL	WINTER	SPRING	FALL	WINTER	SPRING
ENGR 390 (3 cr) Engineering Economy	ESC 340 (4 cr) Introduction to Experimentation	IE 471 (3 cr) Project Management in Engineering	ENGR 415 (4 cr) Engineering Capstone Design I	ENGR 416 (4 cr) Engineering Capstone Design II	ESE 450 (4 cr) Energy Generation Systems
	Preq: CS 162, ENGR 202,	Preq: ENGR 390	Preq: See notes	Preq: ENGR 415	Preq: ME 311
ME 311 (4 cr) Introduction to Thermal-Fluid Sciences	ESC 350 (4 cr) Engineering Materials	ECE 322 (3 cr) Electronics I (subs for ENGR 203 req.)	ESC 440/ENGR 499 (4 cr) Computational Methods for Engineers	ESE 430 (4 cr) Feedback Control Systems	ESE 471 (4 cr) Energy Storage Systems
Prereq: ENGR 212, MTH 256		Preq: ENGR 203 or ESE	Preq: MTH 256 & MTH 264	Preq: ESE 330	Preq: ENGR 202, ME 311
ESE 330 (4 cr) Modeling and Analysis of Dynamic Systems	ECE 271/2 (3 cr/1cr) Digital Logic Design & Lab	ESE 355 (4 cr) Energy Regulation	SUS 350 (4 cr) Sustainable Communities (also Contemporary Global Issues course)	PERSPECTIVES (3 cr) Western Culture (see bacc core guide)	PERSPECTIVES (3 cr) Literature & Arts (see bacc core guide)
Preq: ENGR 202 & 212, MATH 256 & 341 or 264	Prereq: MTH 251	Preq: ENGR 390	FREE ELECTIVE (4 cr)	FREE ELECTIVE (4 cr)	SYNTHESIS (3 cr) Science, Technology & Society (see bacc core quide)
Optimization	Decision Support Systems	Systems			
Preq: ST 314, MTH 341 or 264	Preq: ST 314	Preq: ENGR 202, ME 311			

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• ENGR 415 pre-requisites: ENGR 390, ME 311, ESE 330, WR 327

Engineering Science – Approved List of Restricted Electives

