The Apprentice School Curriculum

For apprentices who began their apprenticeship PRIOR to July 27, 2020

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World Class Shipbuilder Curriculum (WCSC)

SUBJECT	ACADEMIC TERMS			
TECHNICAL MATHEMATICS	TECHNICAL MATH I M111	TECHNICAL MATH II M112		
DRAFTING, ENGINEERING AND DESIGN		DRAFTING D111		MECHANICS M121
MARINE ENGINEERING AND NAVAL ARCHITECTURE		SHIP CONSTRUCTION I N111	SHIP CONSTRUCTION II N222	
PHYSICAL SCIENCE			PHYSICAL SCIENCE I P221	PHYSICAL SCIENCE II P222
TECHNICAL COMMUNICATIONS	TECHNICAL COMMUNICATIONS I C111		SAFESTART S101	
BUSINESS PROCESSES	INTRODUCTION TO COMPUTERS C211		BUSINESS OPERATIONS AND LEADERSHIP B122	PROBLEM SOLVING B112

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Trade Related Education Curriculum (TREC)

COATINGS SPECIALIST
Paint and Surface Preparation
Blueprint Reading for Painters

DIMENSIONAL CONTROL TECHNICIAN
Industrial Measurement–Instrumentation Industrial Measurement–Trades Processing
Industrial Measurement–Processing

ELECTRICIAN
Applied Theory I: DC Concepts
Applied Theory II: AC Concepts
Applied Theory III: Polyphase Systems and Controls
Programmable Logic Controllers

HEATING & AIR CONDITIONING WORKER
All Electrical Theory Courses
Air Conditioning and Refrigeration I

HEAVY METAL FABRICATOR
Hull Construction Theory I
Fundamentals of Fabrication

INSULATOR
Blueprint Reading for Insulators
Theory of Insulation

MACHINIST
Machinist Shop Theory
Computer Numerical Control Programming

MILLWRIGHT
Machinist Shop Theory
Hydraulics I (Introduction)

MODELING & SIMULATION
Introduction to Modeling and Simulation
Modeling and Simulation Applied

MOLDER
Foundry Processes
Blueprint Reading for Molders

NON-DESTRUCTIVE TESTER
NDT Theory

OUTSIDE MACHINIST
Machinery Installation Theory
Hydraulics I (Introduction)
Ship Systems

PATTERNMAKER
Foundry Processes

PIPEFITTER
Introduction to Pipefitting
Blueprint Reading Fundamentals and Procedures
Sketching and Bending Fundamentals
Piping Systems

RIGGER
Stagebuilding, Blocking, and Shoring Theory
Lifting and Handling Equipment Theory
Mooring and Ventilation Theory

SHEET METAL WORKER
Blueprint and Group Sheet Reading
Materials, Machine Processes, and Tapping
Sheet Metal Layout
Advanced Print Reading

SHIPFITTER
Hull Construction Theory I
Hull Construction Theory II-CVN Drawings
Hull Construction Theory II-VCS Drawings
Hull Construction Theory III

WELDER
Hull Construction Theory I
Shielded Metal Arc Welding
Gas-Metal Arc Welding
Introduction to Non-Destructive Testing

WELDING EQUIPMENT REPAIRER
All Electrical Theory Courses

Pre-Advanced Optional Curriculum

SUBJECT	ACADEMIC SEMESTERS *		
	1	2	3
GENERAL EDUCATION	COLLEGE SUCCESS SKILLS S100 / SDV 100 (T)		
MATHEMATICS	PRECALCULUS I M161 / MTH 161 (T)	PRECALCULUS II M162 / MTH 162 (T)	CALCULUS I M263 / MTH 263 (T) *OR* APPLIED CALCULUS I M261 / MTH 261 (T)
ENGLISH	COLLEGE COMPOSITION I E111 / ENG 111 (T)		
SOCIAL SCIENCE AND HUMANITIES	PRINCIPLES OF MACROECONOMICS E201 / ECO 201 (T)	UNITED STATES HISTORY I H121 / HIS 121 (T)	INTRO TO LITERATURE E126 / ENG 125 (T)

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Advanced Optional Curricula

ELECTRICAL ENGINEERING TECHNOLOGY *					
SUBJECT	**ACADEMIC SEMESTERS ****				
	4	**5**	**6**	**7**	**8**
GENERAL EDUCATION			WORKPLACE STRESS MANAGEMENT H210 / HLT 210 (T)		
LABORATORY SCIENCE	GEN COLLEGE PHYSICS II P202 / PHY 202 (T)				
TECHNICAL COMMUNICATIONS & HUMANITIES				TECHNICAL COMM II C232	
ELECTRICAL AND ELECTRONICS TECHNOLOGY	AMPLIFIERS AND INTEGRATED CIRCUITS ETR 148	DIGITAL PRINCIPLES, TERMS, AND APPLICATIONS E279 / ETR 279 (T)	MICROPROCESSOR APPLICATION I E261 / ETR 261 (T)	SOLID STATE CIRCUITS ETR 250 (T)	

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MECHANICAL ENGINEERING TECHNOLOGY *					
SUBJECT	**ACADEMIC SEMESTERS ****				
	4	**5**	**6**	**7**	**8**
GENERAL EDUCATION			WORKPLACE STRESS MANAGEMENT H210 / HLT 210 (T)		
DRAFTING, DESIGN, AND MECHANICAL TECHNOLOGY	ADVANCED TECHNICAL DRAFTING I D211 / CAD 211 (T)	MATERIALS AND PROCESSES OF INDUSTRY M113 / MEC113 (T) MECHANICS I M131 / MEC 131 (T)	MECHANICS II M132 / MEC 132 (T)		APPLIED HYDRAULICS, PNEUMATICS AND HYDROSTATICS M165 / MEC 165 (T)
TECHNICAL COMMUNICATIONS & HUMANITIES				TECHNICAL COMM II C232	
MARINE ENGINEERING AND NAVAL ARCHITECTURE		DYNAMICS FOR ENGINEERING TECHNOLOGY Dynamics M133 / MEC 133 (T)	MECHANISMS M155 / MEC 155 (T)		
BUSINESS PROCESSES				SHIPBUILDING OPERATIONS O233	
LABORATORY SCIENCE	GEN COLLEGE PHYSICS II P202 / PHY 202 (T)			COLLEGE CHEMISTRY I C221 / CHM 111 (T)	

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BUSINESS ADMINISTRATION *				
SUBJECT	**ACADEMIC SEMESTERS ****			
	4	**5**	**6**	**7**
SOCIAL SCIENCE		INFORMATION LITERACY I119 / ITE 119		PRINCIPLES OF MICROECONOMICS E202 / ECO 202 (T)
ACCOUNTING		PRINCIPLES OF ACCOUNTING I A211 / ACC 211 (T)	PRINCIPLES OF ACCOUNTING II A212 / ACC 212 (T)	
LABORATORY SCIENCE	GEN COLLEGE PHYSICS II P202 / PHY 202 (T)			
BUSINESS	PROBABILITY & STATISTICS FOR BUSINESS & ECONOMICS B216 / BUS 216 (T)		ORGANIZATIONAL BEHAVIOR B201 / BUS 201 (T)	TOTAL QUALITY MANAGEMENT B209 / BUS 209 (T)
COMPOSITION, TECHNICAL COMMUNICATIONS, AND HUMANITIES	TECHNICAL COMMUNICATIONS III C243	COLLEGE COMPOSITION II E112 / ENG 112 (T)		ETHICS P220 / PHI 220 (T)

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MECHANICAL ENGINEERING*						
SUBJECT	**ACADEMIC SEMESTERS ****					
	4	**5**	**6**	**7**	**8**	**9**
ENGINEERING	INTRO TO ENGINEERING E120 / EGR 120 (T)	ENGINEERING GRAPHICS E110 / EGR 110 (T)	INTRO TO ENGINEERING METHODS E125 / EGR 125 (T)	ENGINEERING MECHANICS - STATICS E140 / EGR 140 (T)	ENGINEERING MECHANICS - DYNAMICS E245 / EGR 245 (T)	MECHANICS OF MATERIALS E246 / EGR 246 (T) & E247 / EGR 247 (T)
MATHEMATICS	CALCULUS II M264 / MTH 264 (T)	CALCULUS III M265 / MTH 265 (T)	DIFFERENTIAL EQUATIONS M279 / MTH 279 (T)	PROBABILITY AND STATISTICS M283 / MTH 283 (T)		
LABORATORY SCIENCE		COLLEGE CHEMISTRY I C221 / CHM 111 (T)			UNIVERSITY PHYSICS I P241 / PHY 241 (T)	UNIVERSITY PHYSICS II P242 / PHY 242 (T)
TECHNICAL COMMUNICATIONS & HUMANITIES				ETHICS P220 / PHI 220 (T)		TECHNICAL COMM II C232

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ELECTRICAL ENGINEERING *

SUBJECT	ACADEMIC SEMESTERS **					
	4	5	6	7	8	9
ENGINEERING	INTRO TO ENGINEERING E120 / EGR 120 (T)	ENGINEERING GRAPHICS E110 / EGR 110 (T)	INTRO TO ENGINEERING METHODS E125 / EGR 125 (T)	ENGINEERING MECHANICS - STATICS E140 / EGR 140 (T)	CIRCUIT THEORY I E271 / EGR 271 (T)	FUNDAMENTALS OF COMPUTER ENGINEERING E270 / EGR 270 (T) CIRCUIT THEORY II E272 / EGR 272 (T)
MATHEMATICS	CALCULUS II M264 / MTH 264 (T)	CALCULUS III M265 / MTH 265 (T)	DIFFERENTIAL EQUATIONS M267 / MTH 267 (T)			
LABORATORY SCIENCE		COLLEGE CHEMISTRY I C221 / CHM 111 (T)			UNIVERSITY PHYSICS I P241 / PHY 241 (T)	UNIVERSITY PHYSICS II P242 / PHY 242 (T)
TECHNICAL COMMUNICATIONS & HUMANITIES				ETHICS P220 / PHI 220 (T)		TECHNICAL COMM II C232

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MODELING AND SIMULATION *

SUBJECT	ACADEMIC SEMESTERS **						
	4	5	6	7	8	9	10
ENGINEERING	INTRO TO ENGINEERING E120 / EGR 120 (T)	ENGINEERING GRAPHICS E110 / EGR 110 (T)	INTRO TO ENGINEERING METHODS E125 / EGR 125 (T)	INTRO TO MOD & SIM E218 / EGR 218			DISCREET EVENT SIMULATION E230 / EGR 230
MATHEMATICS	CALCULUS II M264 / MTH 264 (T)		DIFFERENTIAL EQUATIONS M267 / MTH 267 (T)	PROBABILITY & STATISTICS M283 / MTH 283 (T)			
LABORATORY SCIENCE		COLLEGE CHEMISTRY I C221 / CHM 111 (T)			UNIVERSITY PHYSICS I P241 / PHY 241 (T)	UNIVERSITY PHYSICS II P242 / PHY 242 (T)	
TECHNICAL COMMUNICATIONS & HUMANITIES				ETHICS P220 / PHI 220 (T)		TECHNICAL COMM II C232	
COMPUTER SCIENCE		PROGRAMMING WITH C++ C210 / CSC 210					

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Professional Development Programs

BS in Electrical Engineering*				
	JUNIOR YEAR**		SENIOR YEAR**	
	1ST SEMESTER	2ND SEMESTER	1ST SEMESTER	2ND SEMESTER
SUBJECT				
ENGINEERING	LINEAR SYSTEMS ANALYSIS ECE 302	PROBABILITY STATISTICS & RELIABILITY ECE 304	ELECTRICAL ENGINEERING DESIGN I ECE 485W	ECE SENIOR Design II ECE 487
	INTRODUCTION TO ELECTRICAL POWER ECE 303	ELECTROMAGNETICS ECE 323	Preparatory ECE Senior Design II ECE 486	Technical Elective 3
	ELECTRONIC CIRCUITS ECE 313	INTRODUCTION TO DISCRETE-TIME SIGNAL PROCESS ECE 381	TECHNICAL ELECTIVE 1	Technical Elective 4
	MICROELECTRIC MATERIALS & PROCESSES ECE 332	MICROELECTRONICS FABRICATION LAB ECE 387	TECHNICAL ELECTIVE 2	
ENGINEERING MANAGEMENT			ETHICS & PHILOSOPHY IN ENGINEERING ENMA 480	
GENERAL EDUCATION	HUMAN CREATIVITY	LITERATURE	UPPER DIVISION COURSE	HUMAN BEHAVIOR
				UPPER DIVISION COURSE

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BS in Mechanical Engineering*				
	JUNIOR YEAR**		SENIOR YEAR**	
	1ST SEMESTER	2ND SEMESTER	1ST SEMESTER	2ND SEMESTER
SUBJECT				
ENGINEERING	MECHANICS OF FLUIDS MAE 303	THERMODYNAMICS II MAE 312	MECHANICAL ENGINEERING DESIGN II MAE 433	PROJECT DESIGN AND MANAGEMENT II MAE 435
	ME LAB III – THERMODYNAMICS OF FLUIDS MAE 305	MECHANICAL ENGINEERING DESIGN I MAE 332	PROJECT DESIGN AND MANAGEMENT I MAE 434W	TECHNICAL ELECTIVE 2
	THERMODYNAMICS I MAE 311	HEAT AND MASS TRANSFER MAE 315	DYNAMIC SYSTEMS & CONTROLS MAE 436	TECHNICAL ELECTIVE 3
	COMPUTATIONAL METHODS IN ME MAE 340	FUNDAMENTALS OF ENGINEERING REVIEW ENGN 401	TECHNICAL ELECTIVE 1	
GENERAL EDUCATION	LITERATURE	PHILOSOPHY AND ETHICS	UPPER DIVISION COURSE (MGMT 325)	UPPER DIVISION COURSE
	HUMAN CREATIVITY	HUMAN BEHAVIOR		

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BS in Modeling and Simulation*				
	JUNIOR YEAR**		SENIOR YEAR**	
	1ST SEMESTER	2ND SEMESTER	1ST SEMESTER	2ND SEMESTER
SUBJECT				
MOD-SIM	CONTINUOUS SIMULATION MSIM 320	SIMULATION SOFTWARE DESIGN MSIM 331	COMPUTER GRAPHICS & VISUALIZATION MSIM 441	
	CONTINUOUS SIMULATION LAB MSIM 382	SIMULATION SOFTWARE DESIGN LAB MSIM 383	CAPSTONE DESIGN I MSIM 487W	CAPSTONE DESIGN II MSIM 488
			MSIM TECH ELECTIVE I	MSIM TECH ELECTIVE II
ENGINEERING MANAGEMENT	APPROVED PROGRAM ELECTIVE		PROJECT MANAGEMENT ENMA 401	ETHICS & PHILOSOPHY IN ENGINEERING APPLICATIONS ENMA 480
				APPROVED PROGRAM ELECTIVE
COMPUTER SCIENCE	OBJECT ORIENTED PROGRAMMING AND DESIGN CS 330			
	INTRO TO DISCRETE STRUCTURES CS 381			
GENERAL EDUCATION		UPPER DIVISION GEN ED	UPPER DIVISION GEN ED	IMPACT OF TECHNOLOGY

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