

# MANUFACTURING PROGRAMS OFFERED FOR YEAR 2013 - 2014



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## CORROSION TECHNOLOGY

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## MANUFACTURING ENGINEERING TECHNOLOGY

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Updated: 6/18/2014

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**MANUFACTURING ENGINEERING TECHNOLOGY - CORROSION SCIENCE TECHNOLOGY - ASSOCIATE IN APPLIED SCIENCE**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
TSI testing required prior to first enrollment.						
<b>FIRST YEAR</b>						
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
METL 1313 Introduction to Corrosion						
ENGL 1301 Composition I						
ENTC 2331 Manufacturing Materials						
MATH 1314 College Algebra						
<b>SECOND SEMESTER</b>						
XXXX #3## Natural Science Elective						
METL 1301 Introduction to Metallurgy						
METL 2441 Cathodic Protection						
DFTG 1305 Technical Drafting						
<b>SECOND YEAR</b>						
<b>FIRST SEMESTER</b>						
XXXX #3## Humanities/Fine Arts Elective						
INMT 1311 Computer Integrated Manufacturing						
HYDR 1345 Hydraulics and Pneumatics						
NDTE 1405 Introduction to Ultrasonics						
ENTC 1347 Safety and Ergonomics <b><i>OR</i></b>						
OSHT 1301 Introduction to Safety and Health						
<b>SECOND SEMESTER</b>						
INMT 1343 Computer Aided Design/Computer Aided Manufacturing (CAD-CAM)						
METL 2405 Atmospheric Corrosion Control						
INMT 1317 Industrial Automation						
CETT 1409 DC-AC Circuits						
XXXX #3## Social/ Behavioral Science Elective						

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**CORROSION TECHNOLOGY - ATMOSPHERIC TECHNOLOGY - CERTIFICATE**

HCCS Course Requirement	Transfer / Substitution Institution	Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>FIRST YEAR</b>						
<b>FIRST SEMESTER</b>						
LEAD 1200		Workforce Development with Critical Thinking				
METL 1313		Introduction to Corrosion				
OSHT 1301		Introduction to Safety and Health				
DFTG #3##		<u>OR</u> Drafting Elective				
WLDG 1407		<u>OR</u> Introduction to Welding Using Multiple Processes				
ITSC 1309		Integrated Software Applications I				
DFTG 1305		Technical Drafting				
<b>SECOND SEMESTER</b>						
METL 2405		Atmospheric Corrosion Control				
METL 1301		Introduction to Metallurgy				
NDTE 1405		Introduction to Ultrasonics				

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**CORROSION TECHNOLOGY - CATHODIC PROTECTION - CERTIFICATE**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>FIRST YEAR</b>						
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
METL 1313 Introduction to Corrosion						
DFTG 1305 Technical Drafting						
CETT 1409 DC - AC Circuits <i><b>OR</b></i>						
ELPT 1311 Basic Electrical Theory						
ITSC 1309 Integrated Software Applications I						
<b>SECOND SEMESTER</b>						
METL 2441 Cathodic Protection						
METL 1301 Introduction to Metallurgy						
NDTE 1405 Introduction to Ultrasonics						

**HOUSTON COMMUNITY COLLEGE SYSTEM  
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**MACHINING TECHNOLOGY - ASSOCIATE IN APPLIED SCIENCE**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
TSI testing required prior to first enrollment.						
<b>FIRST YEAR</b>						
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
TECM 1301 Industrial Mathematics						
MCHN 1302 Print Reading for Machining Trades						
ENTC 1347 Safety and Ergonomics						
MCHN 1338 Basic Machine Shop I						
<b>SECOND SEMESTER</b>						
MCHN 1308 Basic Lathe						
MCHN 1313 Basic Milling Operations						
ITSC 1309 Integrated Software Applications I						
MCHN 1320 Precision Tools and Measurement						
ARTS 1316 Foundation Drawing I						
<b>SECOND YEAR</b>						
<b>FIRST SEMESTER</b>						
MCHN 2433 Advanced Lathe Operations						
MCHN 2437 Advanced Milling Operations						
MCHN 2447 Specialized Tools and Fixtures						
MCHN 1305 Metals and Heat Treatment <u>OR</u>						
ENTC 2331 Manufacturing Materials						
XXXX #3## Social/Behavioral Science/General Ed. Elective						
<b>SECOND SEMESTER</b>						
HUMA 1301 Introduction to Humanities <u>OR</u>						
XXXX #3## General Education Elective						
ARTS 2341 Art Metals I <u>OR</u>						
XXXX #3## General Education Elective						
XXXX #3## Math/Natural Science General Ed. Elective						
MCHN 2331 Operation of CNC Turning Centers <u>OR</u>						
INMT 1345 Computer Numerical Controls						
MCHN 1370 Lean Manufacturing-Machinist**						

The \*\*capstone course is MCHN 1370 - Lean Manufacturing - Machinist.

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**MACHINING TECHNOLOGY - BASIC - CERTIFICATE**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
TECM 1301 Industrial Mathematics						
MCHN 1302 Print Reading for Machining Trades						
ENTC 1347 Safety and Ergonomics						
MCHN 1338 Basic Machine Shop I						
<b>SECOND SEMESTER</b>						
MCHN 1308 Basic Lathe						
MCHN 1313 Basic Milling Operations**						
ARTS 1316 Foundation Drawing I						
MCHN 1320 Precision Tools and Measurement						

The \*\*capstone is MCHN 1313 - Basic Milling Operations.

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**MACHINING TECHNOLOGY - INTERMEDIATE - CERTIFICATE**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>FIRST YEAR</b>						
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
TECM 1301 Industrial Mathematics						
MCHN 1302 Print Reading for Machining Trades						
ENTC 1347 Safety and Ergonomics						
MCHN 1338 Basic Machine Shop I						
<b>SECOND SEMESTER</b>						
MCHN 1308 Basic Lathe						
MCHN 1313 Basic Milling Operations						
ARTS 1316 Foundation Drawing I						
MCHN 1320 Precision Tools and Measurement						
<b>SECOND YEAR</b>						
<b>FIRST SEMESTER</b>						
MCHN 2433 Advanced Lathe Operations						
MCHN 2437 Advanced Milling Operations						
MCHN 1305 Metals and Heat Treatment <i><b>OR</b></i>						
ENTC 2331 Manufacturing Materials						
MCHN 2447 Specialized Tools and Fixtures**						

The \*\*capstone is MCHN 2447 - Specialized Tools and Textures.

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**MANUFACTURING ENGINEERING TECHNOLOGY - ASSOCIATE IN APPLIED SCIENCE**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
TSI Testing required prior to first enrollment.						
<b>FIRST YEAR</b>						
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
TECM 1301 Industrial Mathematics						
MCHN 1302 Print Reading for Machining Trades						
ENTC 1347 Safety and Ergonomics						
MCHN 1338 Basic Machine Shop I						
<b>SECOND SEMESTER</b>						
ITSC 1309 Integrated Software Applications I						
HYDR 1345 Hydraulics and Pneumatics						
INMT 1319 Manufacturing Processes						
MCHN 1341 Basic Machine Shop II						
ARTS 1316 Foundation Drawing I						
<b>SECOND YEAR</b>						
<b>FIRST SEMESTER</b>						
XXXX #3## Social/Behavioral Science Elective						
ENTC 2331 Manufacturing Materials						
ELPT 1311 Basic Electrical Theory						
INMT 1345 Computer Numerical Controls						
XXXX #3## Humanities/Fine Arts Elective						
XXXX #3## Natural Science Elective						
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### HOUSTON COMMUNITY COLLEGE SYSTEM EDUCATIONAL PLAN/TRANSFER SUBSTITUTION PETITION

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**CATALOG YEAR: 8/15/13-8/14/14**

#### MANUFACTURING ENGINEERING TECHNOLOGY - ASSOCIATE IN APPLIED SCIENCE

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>SECOND SEMESTER</b>						
ELPT 1341 Motor Control						
ARTS 2341 Art Metals I <b>OR</b>						
XXXX #3## General Education Elective						
MCHN 2331 Operation of CNC Turning Centers						
INMT 1343 Computer Aided Design/Computer Aided Manufacturing (CAD/CAM)						
INMT 1370 Lean Manufacturing-Manufacturing Engineering						

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**MANUFACTURING ENGINEERING TECHNOLOGY - CERTIFICATE - MANUFACTURING ENGINEERING TECHNOLOGY**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
TECM 1301 Industrial Mathematics						
MCHN 1302 Print Reading for Machining Trades						
ENTC 1347 Safety and Ergonomics						
MCHN 1338 Basic Machine Shop I						
ELPT 1311 Basic Electrical Theory						
<b>SECOND SEMESTER</b>						
ITSC 1309 Integrated Software Applications I						
HYDR 1345 Hydraulics and Pneumatics						
INMT 1319 Manufacturing Processes						
MCHN 1341 Basic Machine Shop II						
ARTS 1316 Foundation Drawing I						
ELPT 1341 Motor Control						

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**MANUFACTURING ENGINEERING TECHNOLOGY - CERTIFICATE - MANUFACTURING PROCESSES**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>TSI testing required prior to completion of first enrollment.</b>						
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
ENTC 2431 Manufacturing Materials						
INMT 1443 Computer Aided Design/Computer Aided Manufacturing (CAD-CAM)						
INMT 1445 Computer Numerical Controls						
ENTC 1447 Safety and Ergonomics						
<b>SECOND SEMESTER</b>						
RBTC 1305 Robotics Fundamentals						
INMT 1411 Computer Integrated Manufacturing						
INMT 1380 Cooperative Education-Industrial/Manufacturing Technology						
INMT 1291 Special Topics in Manufacturing Technology /Tech.						
ENTC 1491 Special Topics-Engineering Technology, General						
<i>This certificate will be deactivated as September 1, 2011.</i>						
<i>No new students will be admitted into this certificate program.</i>						

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**MANUFACTURING ENGINEERING TECHNOLOGY - AAS - PLASTIC ENGINEERING TECHNOLOGY SPECIALIZATION**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
TSI testing required prior to first enrollment.						
<b>FIRST YEAR</b>						
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
PLTC 1301 Introduction to Plastics						
ENGL 1301 Composition I						
TECM 1301 Industrial Mathematics						
ENTC 2331 Manufacturing Materials						
<b>SECOND SEMESTER</b>						
XXXX #3## Humanities/Fine Arts General Ed. Elective						
XXXX #3## Math/Natural Science General Ed. Elective						
PLTC 1303 Plastics Composites						
PLTC 1306 Plastic Quality Control						
INMT 1343 Computer Aided Design/Computer Aided Manufacturing (CAD-CAM)						
<b>SECOND YEAR</b>						
<b>FIRST SEMESTER</b>						
ENGL 1302 Composition II <i>OR</i>						
ARTS 1316 Foundation Drawing I						
HYDR 1345 Hydraulics and Pneumatics						
PLTC 1445 Plastic Processes I						
XXXX #3## Social/Behavioral Science General Ed. Elective						
ENTC 1347 Safety and Ergonomics						
<b>SECOND SEMESTER</b>						
INMT 1311 Computer Integrated Manufacturing						
PLTC 1343 Mold Design and Maintenance						
INMT 1317 Industrial Automation						
PLTC 2446 Plastic Processes II						
PLTC 2331 Troubleshooting Plastic Processes						

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**MANUFACTURING ENGINEERING TECHNOLOGY -CERTIFICATE - PLASTIC ENGINEERING TECHNOLOGY**

HCCS Course Requirement	Transfer / Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
PLTC 1301 Introduction to Plastics						
HYDR 1345 Hydraulics and Pneumatics						
TECM 1301 Industrial Mathematics						
ENTC 2331 Manufacturing Materials						
<b>SECOND SEMESTER</b>						
PLTC 1303 Plastics Composites						
PLTC 1306 Plastic Quality Control						
INMT 1343 Computer Aided Design/Computer Aided Manufacturing (CAD-CAM)						
INMT 1317 Industrial Automation						
PLTC 1445 Plastic Processes I						
<b>THIRD SEMESTER</b>						
INMT 1311 Computer Integrated Manufacturing						
PLTC 1343 Mold Design and Maintenance						

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**WELDING TECHNOLOGY - CERTIFICATE - BASIC WELDING HELPER**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
TECM 1301 Industrial Mathematics						
WLDG 1421 Introduction to Welding Fundamentals						
WLDG 1313 Introduction to Blueprint Reading for Welders						
WLDG 1407 Introduction to Welding Using Multiple Process						

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**WELDING TECHNOLOGY - CERTIFICATE - ADVANCED WELDING**

HCCS Course Requirement	Transfer / Substitution Institution	Substitution Course	Substitute (SU) Transfer (TR)	Comment/Disapproval	Approval Signature	Date
<b>FIRST SEMESTER</b>						
LEAD 1200 Workforce Development with Critical Thinking						
TECM 1301 Industrial Mathematics						
WLDG 1421 Introduction to Welding Fundamentals						
WLDG 1313 Introduction to Blueprint Reading for Welders						
WLDG 1407 Introduction to Welding Using Multiple Process						
<b>SECOND SEMESTER</b>						
WLDG 1430 Introduction to Gas Metal Arc MIG Welding (GMAW)						
WLDG 1434 Introduction to Gas Tungsten Arc TIG Welding (GTAW)						
WLDG 1435 Introduction to Pipe Welding						
<b>THIRD SEMESTER</b>						
WLDG 2447 Advanced Gas Metal Arc MIG Welding (GMAW)						
WLDG 2451 Advanced Tungsten Arc Welding (GTAW)						
WLDG 2453 Advanced Pipe Welding						