



COE – MANUFACTURING PROGRAMS - CATALOG YEAR 2017 - 2018

Find the Right Educational Degree Plan

There are two distinctly different ways to pursue your education at HCC. Each pattern has its own particular purpose, and its own advantages and disadvantages. Read the descriptions carefully to make an informed choice. You must choose one of the two following patterns: The *Academic Transfer* pattern of education **OR** The *Workforce Career* pattern of education. For more information, visit our [College and Career Planner Guide](#).

MANUFACTURING

MACHINING TECHNOLOGY

- Machining Technology - AAS 2-3
- Machining Technology - Basic Manufacturing/Machining - Certificate: Level I 4
- Machining Technology - Machining Technology - Certificate: Level II. 5

MANUFACTURING ENGINEERING TECHNOLOGY

- Manufacturing Engineering Technology - AAS 6-7
- Manufacturing Engineering Technology - Technician - Certificate: Level II . . . 8
- Manufacturing Engineering Technology - Helper - Certificate: Level I 9
(Deactivation pending SACSCOC Approval)
- Manufacturing Technology - High Value Manufacturing - Certificate: Level II 10

**HOUSTON COMMUNITY COLLEGE SYSTEM
EDUCATIONAL PLAN/TRANSFER SUBSTITUTION PETITION**

___ FA ___ VA

NAME:	SID#:	TEL#:	EMAIL:	DATE:
COLLEGE:	COU/ADV:	TEL#:	EMAIL:	CAT YR: 8/15/17-8/14/18

MACHINING TECHNOLOGY - ASSOCIATE OF APPLIED SCIENCE

HCCS Course Requirement	cr hr	Transfer Institution	Substitute Course	Substitute (SU) Transfer (TR)	Term	Credits	Grade	Approval Signature	Date
					Comment/Disapproval				
TSI testing required prior to first enrollment.									
FIRST YEAR									
FIRST SEMESTER									
EDUC 1300 Learning Framework ^A	3								
MCHN 1343 Machine Shop Mathematics	3								
MCHN 1302 Print Reading for Machining Trades	3								
ENTC 1347 Safety and Ergonomics	3								
MCHN 1338 Basic Machine Shop I	3								
SEMESTER TOTAL	15								
SECOND SEMESTER									
HYDR 1345 Hydraulics and Pneumatics	3								
MCHN 1308 Basic Lathe	3								
MCHN 1313 Basic Milling Operations	3								
MCHN 1320 Precision Tools and Measurement	3								
MCHN 1305 Metals and Heat Treatment	3								
SEMESTER TOTAL	15								
SECOND YEAR									
FIRST SEMESTER									
MCHN 2333 Advanced Lathe Operations	3								
MCHN 2337 Advanced Milling Operations	3								
INMT 1370 Lean Manufacturing-Machinist	3								
MCHN 2331 Operation of CNC Turning Centers <i>OR</i>									
INMT 1345 Computer Numerical Controls	3								
SEMESTER TOTAL	12								
SECOND SEMESTER									
XXXX #3## Social/Behavioral Sciences Elective ^D	3								
HUMA 1301 Introduction to Humanities <i>OR</i>									
XXXX #3## Fine Arts/Humanities Elective ^C	3								
XXXX #3## General Education Elective ^E	3								

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MACHINING TECHNOLOGY - ASSOCIATE OF APPLIED SCIENCE

HCCS Course Requirement	cr hr	Transfer Institution	Substitute Course	Substitute (SU) Transfer (TR)	Term	Credits	Grade	Approval Signature	Date
<i>(Continued from page 1)</i>									
XXXX #3## General Education Elective ^E	3								
XXXX #3## Math/Natural Science Elective ^B	3								
SEMESTER TOTAL	15								
THIRD SEMESTER									
MCHN 2341 Advanced Machining I [#]	3								
SEMESTER TOTAL	3								
PROGRAM TOTAL	60								
# CAPSTONE COURSE									

- A. Student Success Course:** Students are required to complete **EDUC 1300** within their first 12 semester credit hours of instruction. Students enrolling at HCC with 12 or more hours completed should consult with an academic advisor to select an appropriate course substitution.
- B. Math/Natural Science:** *May choose from* – **ANTH** 2301 (with or without 2101 = lab), 2302, **ASTR** 1303, 1304, 1403, 1404, **BIOL** 1308, 1309, 1322, 1406, 1407, (*2301, 2302 – restricted to Engineering, Science, and Health Sciences majors*), **CHEM** 1305, 1405, 1411, 1412, **COSC** 1436, **GEOG** 1301, **GEOL** 1305, 1345, 1347, 1403, 1404, **MATH** 1314, 1316, 1324, 1325, 1332, 1342, 1350, 2318, 2320, 2412, 2413, 2414, 2415, **PHYS** 1305, 1401, 1402, 2325 (*with or without 2125= lab*), 2326 (*with or without 2126 = lab*), **PSYC** 2317.
- C. Humanities/Fine Arts:** *May choose from* – **ARTS** 1301, 1303, 1304, **COMM** 2366, **DANC** 2303, **DRAM** 1310, 2316, 2366, **ENGL** 2322, 2323, 2327, 2328, 2332, 2333, 2342, 2343, 2351, **HIST** 1301, 1302, 2311, 2312, 2321, 2322, 2301, 2327, 2328, 2381, **HUMA** 1301, 1305, 1311, 2319, 2323, **MUSI** 1306, 1310, **PHIL** 1301, 1304, 2306, 2307, 2316, World Languages (**ARAB** 1411, 1412, **CHIN** 1411, 1412, **FREN** 1411, 1412, **GERM** 1411, 1412, **JAPN** 1411, 1412, **KORE** 1411, 1412, **SPAN** 1411, 1412).
- D. Social/Behavioral Sciences:** *May choose from* – **ANTH** 2346, 2351, **ECON** 1301, 2301, 2302, **EDUC** 1300, **GEOG** 1302, 1303, **GOVT** 2305, 2306, **PSYC** 2301, 2314, 2316, 2319, **SOCI** 1301, 1306, 2301, 2336, **TECA** 1354.
- E. General Education:** *May choose from* – **ANTH** 2301 (*with or without 2101 = lab*), 2302, 2346, 2351, **ARTS** 1301, 1303, 1304, **ASTR** 1303, 1304, 1403, 1404, **BIOL** 1308, 1309, 1322, 1406, 1407, (*2301, 2302 – restricted to Engineering, Science, and Health Sciences majors*), **CHEM** 1305, 1405, 1411, 1412, **COMM** 2366, **COSC** 1436, **DANC** 2303, **DRAM** 1310, 2316, 2366, **ECON** 1301, 2301, 2302, **EDUC** 1300, **ENGL** 2322, 2323, 2327, 2328, 2332, 2333, 2342, 2343, 2351, **GEOG** 1301, 1302, 1303, **GEOL** 1305, 1345, 1347, 1403, 1404, **GOVT** 2305, 2306, **HIST** 1301, 1302, 2311, 2312, 2321, 2322, 2301, 2327, 2328, 2381, **HUMA** 1301, 1305, 1311, 2319, 2323, **MATH** 1314, 1316, 1324, 1325, 1332, 1342, 1350, 2318, 2320, 2412, 2413, 2414, 2415, **MUSI** 1306, 1310, **PHIL** 1301, 1304, 2306, 2307, 2316, **PHYS** 1305, 1401, 1402, 2325 (*with or without 2125 = lab*), 2326 (*with or without 2126 = lab*), **PSYC** 2301, 2314, 2316, 2317, 2319, **SOCI** 1301, 1306, 2301, 2336, **TECA** 1354, World Languages (**ARAB** 1411, 1412, **CHIN** 1411, 1412, **FREN** 1411, 1412, **GERM** 1411, 1412, **JAPN** 1411, 1412, **KORE** 1411, 1412, **SPAN** 1411, 1412).

**HOUSTON COMMUNITY COLLEGE SYSTEM
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MACHINE TECHNOLOGY - BASIC MANUFACTURING /MACHINING - CERTIFICATE: LEVEL I

HCCS Course Requirement	cr hr	Transfer Institution	Substitute Course	Substitute (SU) Transfer (TR)	Term	Credits	Grade	Approval Signature	Date
					Comment/Disapproval				
FIRST SEMESTER									
ENTC 1347 Safety and Ergonomics	3								
MCHN 1302 Print Reading for Machining Trades	3								
MCHN 1338 Basic Machine Shop I	3								
MCHN 1343 Machine Shop Mathematics	3								
SEMESTER TOTAL	12								
SECOND SEMESTER									
HYDR 1345 Hydraulics and Pneumatics	3								
MCHN 1308 Basic Lathe	3								
MCHN 1313 Basic Milling Operations #	3								
SEMESTER TOTAL	9								
PROGRAM TOTAL	21								
# CAPSTONE COURSE									

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MACHINING TECHNOLOGY - CERTIFICATE: LEVEL II

HCCS Course Requirement	cr	Transfer	Substitute	Substitute (SU)	Term	Credits	Grade	Approval	Date
FIRST YEAR									
FIRST SEMESTER									
EDUC 1300 Learning Framework ^A	3								
MCHN 1343 Machine Shop Mathematics	3								
MCHN 1302 Print Reading for Machining Trades	3								
ENTC 1347 Safety and Ergonomics	3								
MCHN 1338 Basic Machine Shop I	3								
SEMESTER TOTAL	15								
SECOND SEMESTER									
HYDR 1345 Hydraulics and Pneumatics	3								
MCHN 1308 Basic Lathe	3								
MCHN 1313 Basic Milling Operations	3								
MCHN 1320 Precision Tools and Measurement	3								
MCHN 1305 Metals and Heat Treatment	3								
SEMESTER TOTAL	15								
SECOND YEAR									
FIRST SEMESTER									
MCHN 2337 Advanced Milling Operations	3								
MCHN 2333 Advanced Lathe Operations	3								
INMT 1370 Lean Manufacturing	3								
MCHN 2331 Operation of CNC Turning Centers <i>OR</i>									
INMT 1345 Computer Numerical Controls	3								
MCHN 2341 Advanced Machining I [#]	3								
SEMESTER TOTAL	15								
PROGRAM TOTAL	45								
# CAPSTONE COURSE									

A. Student Success Course: Students are required to complete **EDUC 1300** within their first 12 semester credit hours of instruction. Students enrolling at HCC with 12 or more hours completed should consult with an academic advisor to select an appropriate course substitution.

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MANUFACTURING ENGINEERING TECHNOLOGY - ASSOCIATE OF APPLIED SCIENCE

HCCS Course Requirement	cr hr	Transfer Institution	Substitute Course	Substitute (SU) Transfer (TR)	Term	Credits	Grade	Approval Signature	Date
TSI Testing required prior to first enrollment.									
FIRST YEAR									
FIRST SEMESTER									
EDUC 1300 Learning Framework ^A	3								
MCHN 1343 Machine Shop Mathematics	3								
MCHN 1302 Print Reading for Machining Trades	3								
ENTC 1347 Safety and Ergonomics	3								
MCHN 1338 Basic Machine Shop I	3								
SEMESTER TOTAL	15								
SECOND SEMESTER									
HYDR 1345 Hydraulics and Pneumatics	3								
ELPT 1311 Basic Electrical Theory	3								
MCHN 1308 Basic Lathe	3								
MCHN 1313 Basic Milling Operations	3								
INMT 1345 Computer Numerical Controls	3								
SEMESTER TOTAL	15								
SECOND YEAR									
FIRST SEMESTER									
INMT 1317 Industrial Automation	3								
MCHN 2335 Advanced CNC Machining	3								
MCHN 2331 Operation of CNC Turning Centers	3								
INMT 1343 Computer Aided Design/Computer Aided Manufacturing (CAD/CAM)	3								
INMT 1370 Lean Manufacturing [#]	3								
SEMESTER TOTAL	15								

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MANUFACTURING ENGINEERING TECHNOLOGY - ASSOCIATE OF APPLIED SCIENCE

HCCS Course Requirement	cr hr	Transfer Institution	Substitute Course	Substitute (SU) Transfer (TR)	Term	Credits	Grade	Approval Signature	Date
					Comment/Disapproval				
(Continued from page 1)									
SECOND SEMESTER									
XXXX #3## Math/Natural Science Elective ^B	3								
HUMA 1301 Introduction to Humanities <i>OR</i>									
XXXX #3## Humanities/Fine Arts Elective ^C	3								
XXXX #3## Social/Behavioral Sciences Elective ^D	3								
XXXX #3## General Education Elective ^E	3								
XXXX #3## General Education Elective ^E	3								
SEMESTER TOTAL	15								
PROGRAM TOTAL	60								
# CAPSTONE COURSE									

- A. Student Success Course:** Students are required to complete **EDUC 1300** within their first 12 semester credit hours of instruction. Students enrolling at HCC with 12 or more hours completed should consult with an academic advisor to select an appropriate course substitution.

- B. Math/Natural Science: *May choose from*** – ANTH 2301 (with or without 2101 = lab), 2302, **ASTR** 1303, 1304, 1403, 1404, **BIOL** 1308, 1309, 1322, 1406, 1407, (*2301, 2302 – restricted to Engineering, Science, and Health Sciences majors*), **CHEM** 1305, 1405, 1411, 1412, **COSC** 1436, **GEOG** 1301, **GEOL** 1305, 1345, 1347, 1403, 1404, **MATH** 1314, 1316, 1324, 1325, 1332, 1342, 1350, 2318, 2320, 2412, 2413, 2414, 2415, **PHYS** 1305, 1401, 1402, 2325 (*with or without 2125= lab*), 2326 (*with or without 2126 = lab*), **PSYC** 2317.

- C. Humanities/Fine Arts: *May choose from*** – **ARTS** 1301, 1303, 1304, **COMM** 2366, **DANC** 2303, **DRAM** 1310, 2316, 2366, **ENGL** 2322, 2323, 2327, 2328, 2332, 2333, 2342, 2343, 2351, **HIST** 1301, 1302, 2311, 2312, 2321, 2322, 2301, 2327, 2328, 2381, **HUMA** 1301, 1305, 1311, 2319, 2323, **MUSI** 1306, 1310, **PHIL** 1301, 1304, 2306, 2307, 2316, World Languages (**ARAB** 1411, 1412, **CHIN** 1411, 1412, **FREN** 1411, 1412, **GERM** 1411, 1412, **JAPN** 1411, 1412, **KORE** 1411, 1412, **SPAN** 1411, 1412).

- D. Social/Behavioral Sciences: *May choose from*** – ANTH 2346, 2351, **ECON** 1301, 2301, 2302, **EDUC** 1300, **GEOG** 1302, 1303, **GOVT** 2305, 2306, **PSYC** 2301, 2314, 2316, 2319, **SOCI** 1301, 1306, 2301, 2336, **TECA** 1354.

- E. General Education: *May choose from*** – ANTH 2301 (*with or without 2101 = lab*), 2302, 2346, 2351, **ARTS** 1301, 1303, 1304, **ASTR** 1303, 1304, 1403, 1404, **BIOL** 1308, 1309, 1322, 1406, 1407, (*2301, 2302 – restricted to Engineering, Science, and Health Sciences majors*), **CHEM** 1305, 1405, 1411, 1412, **COMM** 2366, **COSC** 1436, **DANC** 2303, **DRAM** 1310, 2316, 2366, **ECON** 1301, 2301, 2302, **EDUC** 1300, **ENGL** 2322, 2323, 2327, 2328, 2332, 2333, 2342, 2343, 2351, **GEOG** 1301, 1302, 1303, **GEOL** 1305, 1345, 1347, 1403, 1404, **GOVT** 2305, 2306, **HIST** 1301, 1302, 2311, 2312, 2321, 2322, 2301, 2327, 2328, 2381, **HUMA** 1301, 1305, 1311, 2319, 2323, **MATH** 1314, 1316, 1324, 1325, 1332, 1342, 1350, 2318, 2320, 2412, 2413, 2414, 2415, **MUSI** 1306, 1310, **PHIL** 1301, 1304, 2306, 2307, 2316, **PHYS** 1305, 1401, 1402, 2325 (*with or without 2125 = lab*), 2326 (*with or without 2126 = lab*), **PSYC** 2301, 2314, 2316, 2317, 2319, **SOCI** 1301, 1306, 2301, 2336, **TECA** 1354, World Languages (**ARAB** 1411, 1412, **CHIN** 1411, 1412, **FREN** 1411, 1412, **GERM** 1411, 1412, **JAPN** 1411, 1412, **KORE** 1411, 1412, **SPAN** 1411, 1412).

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MANUFACTURING ENGINEERING TECHNOLOGY - TECHNICIAN - CERTIFICATE: LEVEL II

HCCS Course Requirement	cr	Transfer	Substitute	Substitute (SU)	Term	Credits	Grade	Approval	Date
TSI Testing required prior to first enrollment.									
FIRST SEMESTER									
EDUC 1300 Learning Framework ^A	3								
MCHN 1343 Machine Shop Mathematics	3								
MCHN 1302 Print Reading for Machining Trades	3								
ENTC 1347 Safety and Ergonomics	3								
MCHN 1338 Basic Machine Shop I	3								
SEMESTER TOTAL	15								
SECOND SEMESTER									
HYDR 1345 Hydraulics and Pneumatics	3								
ELPT 1311 Basic Electrical Theory	3								
MCHN 1308 Basic Lathe	3								
MCHN 1313 Basic Milling Operations	3								
INMT 1345 Computer Numerical Controls	3								
INMT 1370 Lean Manufacturing [#]	3								
SEMESTER TOTAL	18								
THIRD SEMESTER									
MCHN 2331 Operation of CNC Turning Centers	3								
INCR 1302 Physics of Instrumentation	3								
INMT 1343 Computer Aided Design/Computer Aided Manufacturing (CAD/CAM)	3								
INMT 1317 Industrial Automation	3								
SEMESTER TOTAL	12								
PROGRAM TOTAL	45								
# CAPSTONE COURSE									

A. Student Success Course: Students are required to complete **EDUC 1300** within their first 12 semester credit hours of instruction. Students enrolling at HCC with 12 or more hours completed should consult with an academic advisor to select an appropriate course substitution.

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MANUFACTURING TECHNOLOGY - HIGH VALUE MANUFACTURING - CERTIFICATE: LEVEL II

HCCS Course Requirement	cr hr	Transfer Institution	Substitute Course	Substitute (SU) Transfer (TR)	Term	Credits	Grade	Approval Signature	Date
					Comment/Disapproval				
TSI Testing required prior to first enrollment.									
FIRST YEAR									
FIRST SEMESTER									
ENTC 1347 Safety and Ergonomics	3								
MATH 1314 College Algebra	3								
MCHN 1302 Print Reading for Machining Trades	3								
MCHN 1338 Basic Machine Shop I	3								
PTRT 1301 Introduction to Petroleum Industry	3								
SEMESTER TOTAL	15								
SECOND SEMESTER									
INCR 1302 Physics of Instrumentation	3								
INMT 1345 Computer Numerical Controls	3								
INMT 1371 Materials and Applications	3								
MCHN 1308 Basic Lathe	3								
MCHN 1313 Basic Milling Operations	3								
PTRT 1470 Petroleum Data Management	4								
SEMESTER TOTAL	19								
THIRD SEMESTER									
INMT 1343 Computer Aided Design/Computer Aided Manufacturing (CAD/CAM)	3								
INMT 1372 Quality and Assessment	3								
INMT 1373 Machine Shop Logistics	3								
INMT 2370 Project Management #	3								
PTRT 2370 Petroleum Operations	3								
SEMESTER TOTAL	15								
PROGRAM TOTAL	49								
# CAPSTONE COURSE									