Mandarin

MAND 1 Elementary Mandarin (First Quarter) 5 Units
(See general education pages for the requirement this course meets.)
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Five hours lecture, one hour laboratory.
Introduction to the language and cultures of Mandarin-speaking countries and communities. Basic speaking, listening, reading, and writing of Mandarin will be introduced and practiced within a cultural framework. Mandarin will be the primary language of instruction. Emphasis will be on language as an expression of culture and a medium of communication. Language laboratory practice will be part of the regular instruction to reinforce pronunciation, grammar, syntax, and conversation.

MAND 2 Elementary Mandarin (Second Quarter) 5 Units
(See general education pages for the requirement this course meets.)
Prerequisite: Mandarin 1.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Five hours lecture, one hour laboratory.
Further development of material presented in Mandarin 1. Continuation of introduction to the language and cultures of Mandarin-speaking countries and communities. Speaking, listening, reading, and writing of Mandarin will be continued and practiced within a cultural framework. Mandarin will be the primary language of instruction. Emphasis will be on language as an expression of culture and a medium of communication. Language laboratory practice will be part of the regular instruction to reinforce pronunciation, grammar, syntax, and conversation.

MAND 3 Elementary Mandarin (Third Quarter) 5 Units
(See general education pages for the requirement this course meets.)
Prerequisite: Mandarin 2.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Five hours lecture, one hour laboratory.
Further development of material presented in Mandarin 1 and 2. Completion of introduction to the language and cultures of Mandarin-speaking countries and communities. Speaking, listening, reading, and writing of Mandarin will be introduced and practiced within a cultural framework. Mandarin will be the primary language of instruction. Emphasis will be on language as an expression of culture and a medium of communication. Language laboratory practice will be part of the regular instruction to reinforce pronunciation, grammar, syntax, and conversation.

MAND 4 Intermediate Mandarin (First Quarter) 5 Units
(Formerly Mandarin 94.)
(See general education pages for the requirement this course meets.)
Prerequisite: Mandarin 3 or demonstrated proficiency in the language competency description of level three.
Five hours lecture, one hour laboratory.
Read and discuss texts dealing with geography, history, social and cultural practices of the Chinese-speaking world. Review the linguistic functions and grammatical structures of first-year Chinese. Speaking, listening, reading, and writing of Mandarin will be introduced and practiced within a cultural framework. Mandarin will be the primary language of instruction. Emphasis will be on language as an expression of culture and a medium of communication. Develop reading, listening, speaking and writing skills at the high intermediate level. Language laboratory practice will be part of the regular instruction to reinforce pronunciation, grammar, syntax, and conversation.

MAND 5 Intermediate Mandarin (Second Quarter) 5 Units
(Formerly Mandarin 95.)
(See general education pages for the requirement this course meets.)
Prerequisite: Mandarin 4 or demonstrated proficiency in the language competency description of level four.
Five hours lecture, one hour laboratory.
Continuation of Mandarin 4. Read and discuss texts dealing with geography, history, social and cultural practices of the Chinese-speaking world. Review the linguistic functions and grammatical structures of intermediary Chinese. Speaking, listening, reading, and writing of Mandarin will be introduced and practiced within a cultural framework. Mandarin will be the primary language of instruction. Emphasis will be on language as an expression of culture and a medium of communication. Develop reading, listening, speaking and writing skills at the low advanced level. Language laboratory practice will be part of the regular instruction to reinforce pronunciation, grammar, syntax, and conversation.

LING 1 Introduction to Linguistics 4 Units
(See general education pages for the requirement this course meets.)
Advisory: English Writing 1A or English as a Second Language 5.
(Also listed as English Literature 25. Student may enroll in either department, but not both, for credit.)
Four hours lecture.
Introduction to the nature of language. Origin and development of spoken and written languages, how people learn languages, and how languages change, with emphasis on the history of English. Basics of linguistic description including systems of phonetics and phonology, semantics, morphology and syntax. Study of general linguistic principles as they apply across languages.
MAND 6 Intermediate Mandarin (Third Quarter) 5 Units
(Formerly Mandarin 96.)
(See general education pages for the requirement this course meets.)
Prerequisite: Mandarin 5 or demonstrated proficiency in the language competency description of level five.
Five hours lecture, one hour laboratory.
Continuation of Mandarin 5. Read, discuss and analyze texts dealing with arts, geography, history, literature, social and cultural practices of the Chinese-speaking world. Review the linguistic functions and grammatical structures of intermediary Chinese. Speaking, listening, reading, and writing of Mandarin will be introduced and practiced within a cultural framework. Mandarin will be the primary language of instruction. Emphasis will be on language as an expression of culture and a medium of communication. Develop reading, listening, speaking and writing skills at the advanced level. Language laboratory practice will be part of the regular instruction to reinforce pronunciation, grammar, syntax, and conversation.

MAND 50A Intermediate Conversation (First Quarter) 3 Units
Prerequisite: Mandarin 90C or equivalent.
Three hours lecture.
The first course in the intermediate conversation Mandarin course sequence, following Mandarin 90C. Continues the introduction to the language and cultures of Mandarin-speaking countries and communities. The vocabulary and grammatical structures mastered in Mandarin 90C will be consolidated and further developed, in conjunction with elements of Chinese culture. Elements of Chinese for business are further introduced. Mandarin 13A is focused on speaking and comprehension proficiency near native speaker level.

MAND 50B Intermediate Conversation (Second Quarter) 3 Units
Prerequisite: Mandarin 50A or equivalent.
Three hours lecture.
The next course in the intermediate conversation Mandarin course sequence, following Mandarin 50A. Continues the introduction to the language and cultures of Mandarin-speaking countries and communities. The vocabulary and grammatical structures mastered in Mandarin 50A will be consolidated and further developed, in conjunction with elements of Chinese culture. Elements of Chinese for business are further introduced including a meeting conversation. Mandarin 50B is focused on speaking and comprehension proficiency near native speaker level.

MAND 50C Intermediate Conversation (Third Quarter) 3 Units
Prerequisite: Mandarin 50B or equivalent.
Three hours lecture.
The advanced level of conversation, following Mandarin 50B. Continues the introduction to the language and cultures of Mandarin-speaking countries and communities. The vocabulary and grammatical structures mastered in Mandarin 50B will be consolidated and further developed, in conjunction with elements of Chinese culture. Elements of Chinese for business are further introduced including make business presentations, conducting simple business negotiations, and travel Chinese. Mandarin 50C is focused on speaking and comprehension proficiency at native speaker level.

MAND 90A Introductory Conversation (First Quarter) 3 Units
Three hours lecture.
Introduction to the language and cultures of Mandarin-speaking countries and communities. Spoken Chinese will be introduced with focus on pronunciation and vocabulary, in connection with elements of Chinese culture necessary to understand the language. Intensive drills in the patterns and idioms of daily speech will be supported by sufficient grammar to give flexibility in the spoken language.

MAND 90B Introductory Conversation (Second Quarter) 3 Units
Prerequisite: Mandarin 90A.
Three hours lecture.
The next course in the introductory conversation Mandarin course sequence, following Mandarin 90A. Continues the introduction to the language and cultures of Mandarin-speaking countries and communities. The vocabulary and grammatical structures mastered in Mandarin 90A will be consolidated and further developed, in conjunction with elements of Chinese culture. The course emphasizes practical communication for everyday use and business, particularly conversational fluency.

MAND 90C Introductory Conversation (Third Quarter) 3 Units
Prerequisite: Mandarin 90B.
Three hours lecture.
The next course in the introductory conversation Mandarin sequence, following Mandarin 90B. Continues the introduction to the language and cultures of Mandarin-speaking countries and communities. The vocabulary and grammatical structures mastered in Mandarin 90B will be consolidated and further developed, in conjunction with elements of Chinese culture. Elements of Chinese for business are introduced. Mandarin 90C is focused on speaking and comprehension proficiency.
MCNC 72 Applied Geometric Inspection Dimensioning and Tolerancing (ANSI Y14.5m); Coordinate Measuring Machines (CMM) 3 Units
(Formerly Manufacturing and Design Technology 72.)
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; experience in blueprint reading.
Six hours lecture-laboratory.
Interpretation of specifications and inspection procedures related to current ASME Y14.5 Geometric Dimensioning and Tolerancing (GD&T) standards. Applications and capabilities of precision measuring tools, including the computer-aided Coordinate Measuring Machine (CMM), used in manufacturing environments to inspect discrete complex parts. Machine and inspected part setup for measuring form, orientation, and position callouts.

MCNC 74A Survey of Computer Drawings 2 Units
(Formerly Manufacturing and Design Technology 54E)
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Four hours lecture-laboratory.
(May be taken two times for credit if software is different each time.)
Principles and applications of computer drawings using industry standard software. Emphasis on 3-D and articulated drawings.

MCNC 74B Survey of Computer Aided Design 2 Units
(Formerly Manufacturing and Design Technology 54F)
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263; Mathematics 210 or equivalent.
Four hours lecture-laboratory.
Principles and applications of computer aided design (CAD) using industry standard software. Emphasis on 2D drawings.

MCNC 74D Survey of Industrial Mechanisms 2 Units
Prerequisite: Manufacturing and CNC 62B and 74B with a grade of C or better; or equivalent.
Advisory: English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Four hours lecture-laboratory.
The application of basic physical principles to the operation and design of mechanical and hydraulic mechanisms.

MCNC 75A Introduction to Computer-Aided Numerical Control (CNC) Programming and Operation; Mills 4 1/2 Units
Advisory: Manufacturing and CNC 71 or experience in machining processes; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Nine hours lecture-laboratory.
Introduction to mill tool path programming using G and M code format. CNC systems and components including machine controller functions and operations. Program entry, editing, and back plotting. Calculation for mill and lathe cutter compensation. Precision inspection techniques and basic mill setups, including cutting tool selection, and work holding.

MCNC 75B Computer-Aided Numerical Control (CNC) Programming and Operation; Lathes, Advanced Mills 4 1/2 Units
Prerequisite: Manufacturing and CNC 75A with a grade of C or better or equivalent.
Nine hours lecture-laboratory.
Introduction to lathe tool path programming using word address format, including coordinate system, cutter compensation and canned cycles. Advanced mill programming; sub programs, work coordinate system and use of macros. Program entry, editing, and back plotting. Machine controller functions and operations. Single point threading and Unified thread form classes and measurement. Cutting tool insert selection.

MCNC 75C CNC Lathes & Horizontal Machining Centers; Programming and Operation, 4th Rotary Axis, Fixture Design 4 1/2 Units
Prerequisite: Manufacturing and CNC 75B with a grade of C or better.
Nine hours lecture-laboratory.
CNC lathe tool path programming using G&M code format, including tool orientation and compensation and canned cycles. Programming for CNC horizontal machining centers and 4th axis rotary tables. Horizontal machining center and lathe controller functions, setup and operations. Fixture design for mills and lathes; base plate layout, supporting, locating, and clamping practices.

MCNC 76A CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Advisory: Basic understanding of mill and lathe operations; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Nine hours lecture-laboratory.
Three-axis mill programming; creating part geometry, defining tools and tool paths, and using post-processors to produce word-address format programs.

MCNC 76B CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Advisory: Basic understanding of mill and lathe operations; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Nine hours lecture-laboratory.
Three-axis mill programming; creating part geometry, defining tools and tool paths, and using post-processors to produce word-address format programs.

MCNC 76C CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Advisory: Basic understanding of mill and lathe operations; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Nine hours lecture-laboratory.
Three-axis mill programming; creating part geometry, defining tools and tool paths, and using post-processors to produce word-address format programs.

MCNC 76D CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Advisory: Basic understanding of mill and lathe operations; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Nine hours lecture-laboratory.
Three-axis mill programming; creating part geometry, defining tools and tool paths, and using post-processors to produce word-address format programs.

MCNC 76E CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Advisory: Basic understanding of mill and lathe operations; English Writing 200 and Reading 200 (or Language Arts 200), or English as a Second Language 261, 262 and 263.
Nine hours lecture-laboratory.
Three-axis mill programming; creating part geometry, defining tools and tool paths, and using post-processors to produce word-address format programs.

MCNC 76F CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Prerequisite: Manufacturing and CNC 76B.
Nine hours lecture-laboratory.
Programming procedures using wireframe, splines, and surface modeling. Rough, finish, and high speed machining. Editing, post-processing, verifying programs.

MCNC 76G CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Prerequisite: Manufacturing and CNC 76B.
Nine hours lecture-laboratory.
Programming procedures using wireframe, splines, and surface modeling. Rough, finish, and high speed machining. Editing, post-processing, verifying programs.

MCNC 76H CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Prerequisite: Manufacturing and CNC 76B.
Nine hours lecture-laboratory.
Programming procedures using wireframe, splines, and surface modeling. Rough, finish, and high speed machining. Editing, post-processing, verifying programs.

MCNC 76I CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Prerequisite: Manufacturing and CNC 76B.
Nine hours lecture-laboratory.
Programming procedures using wireframe, splines, and surface modeling. Rough, finish, and high speed machining. Editing, post-processing, verifying programs.

MCNC 76J CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Prerequisite: Manufacturing and CNC 76B.
Nine hours lecture-laboratory.
Programming procedures using wireframe, splines, and surface modeling. Rough, finish, and high speed machining. Editing, post-processing, verifying programs.

MCNC 76K CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Prerequisite: Manufacturing and CNC 76B.
Nine hours lecture-laboratory.
Programming procedures using wireframe, splines, and surface modeling. Rough, finish, and high speed machining. Editing, post-processing, verifying programs.

MCNC 76L CAD/CAM Based Computer Numerical Control Programming Using Mastercam 4 1/2 Units
(Students may receive credit for only one Manufacturing and CNC 76 course with an A through E designation.)
Prerequisite: Manufacturing and CNC 76B.
Nine hours lecture-laboratory.
Advanced Mastercam; complex surfacing for milling machines and contouring surfaces for lathes. Tooling, workflow and programming for horizontal machining centers.

MCNC 77 Machining Practices Using Conventional Machine Tools, Tool Design, Abrasive Machining 4 1/2 Units
Prerequisite: Manufacturing and CNC 71 with a grade of C or better or equivalent.
Nine hours lecture-laboratory.
Advanced machining practices using conventional machine tools. Introduction to fixture design including location and clamping methods and computation of fits and allowances. Abrasive machining.

MCNC 200 Open Manufacturing and CNC Technology Laboratory 1/2 Unit
MCNC 200X 1 Unit
MCNC 200Y 1 1/2 Units
MCNC 200Z 2 Units
(Formerly Manufacturing and CNC Technologies 100, 100X-Z.)
Corequisite: Manufacturing and CNC 200 and 200X-Z students must also enroll in any Manufacturing and CNC Technology course.
Three hours laboratory for each unit of credit.
(May be repeated as long as the corequisite is satisfied.)
Pass-No Pass (P-NP) course.
Use of Manufacturing and CNC Technology labs for those who need/desire more time to complete machining and/or CNC programs, projects and exercises.