DESCRIPTIONS Of COURSES 2001-2002

This section provides descriptions of all courses given by the University at the undergraduate, graduate-professional, and graduate levels. For information about courses offered through the Institute of Agricultural Technology, contact the Institute of Agricultural Technology in Room 120 Agriculture Hall.

COURSE NUMBERS

001-099 Non-Credit Courses

Courses with these numbers are offered by the University to permit students to make up deficiencies in previous training or to improve their facility in certain basic skills without earning credit.

For information about remedial-developmental-preparatory courses, consult the *Undergraduate Education* section of this catalog.

100-299 Undergraduate Courses

Courses with these numbers are for undergraduate students. They carry no graduate credit, although graduate students may be admitted to such courses in order to make up prerequisites or to gain a foundation for advanced courses.

For information about remedial-developmental-preparatory courses, consult the *Undergraduate Education* section of this catalog.

300-499 Advanced Undergraduate Courses

Courses with these numbers are for advanced undergraduate students. They constitute the advanced portion of an undergraduate program leading to the bachelor's degree. A graduate student may carry 400 level courses for credit upon approval of the student's major department or school. In exceptional cases, a graduate student may petition the dean of his or her college, in writing, for approval of a 300 level course for graduate credit.

500-699 Graduate-Professional Courses

Courses with these numbers are courses in the graduate-professional programs. A graduate student may carry these courses for credit with approval of the major department or school.

800-899 Graduate Courses

Courses with these numbers are for graduate students. Advanced undergraduates with Honors College status or a grade-point average in their total programs equal to or greater than the minimum requirement for graduation with honors may be admitted to 800-899 level courses. The student must obtain approval of the relevant department. *More than half of the credits of the total required for a master's degree shall be taken at the 800 and 900 level* except as specifically exempted by the dean of the college.

900-999 Advanced Graduate Courses

Courses with these numbers are exclusively for graduate students and primarily for advanced graduate students. A master's degree student may take these courses with the approval of the major department or school, with the exception of courses numbered 999 (doctoral dissertation research). Admission to a doctoral degree program is a prerequisite of all courses numbered 999.

VARIABLE CREDIT COURSES

For each variable credit course, the range of credits for which a student may enroll in a given semester and the maximum number of credits that a student may earn in a course with a reenrollment provision shall be specified.

MULTITITLED COURSES

A multititled course is one that has been approved as such by the Academic Council upon recommendation of the University Committee on Curriculum (UCC). Approval of a course as a multititled course shall include authorization for subtitles for the course to be established. Approved subtitles shall have the same status as separately approved courses that are included in the *Descriptions of Courses* section of the University catalog. For example, an approved subtitle shall be included in the *Schedule of Courses* in place of the general, authorized title for the multititled course and shall appear on students' academic records (including transcripts). Multititled courses are identified as such by the coding (MTC) after the course titles in the *Descriptions of Courses.*

Multititled courses may have approved subtitles. A subtitle of a multititled course represents a subject matter area that is related to the course and that has been approved as a subtitle for that course by the UCC.

COURSE LISTINGS

A **312 Mass Transfer and Separations**

B Spring. 4(5-0) A student may earn a maximum of 8 credits in all reenrollments for this course. Interdepartmental with Biosystems Engineering.

C P:M: (CHE 201 and MTH 235 or concurrently) P:NM: (ECE 200) C: ECE 201 concurrently. R: Open only to students in the College of Engineering. SA: EE 200

D Diffusion. Mass transfer coefficients. Design of counter-current separation systems, both stagewise and continuous. Distillation, absorption, extraction. Multicomponent separations.

To understand the characteristics of a course, consider each of the five categories depicted below.

A The course number and title including
The course number suffix:

H – Honors Course
1 – Type I
2 – Type II Remedial-Developmental
3 – Type III Preparatory Courses
4 – Type IV
5 – Type V

For additional information about remedial–developmental–preparatory courses, consult the *Academic Programs* section of the catalog.

The designation code for a Tier II writing course in parentheses following the course title.

(W) – Tier II writing course

For additional information, refer to the statement on Writing Requirement in the *Academic Programs* section of catalog.

The diversity designation code for an integrative studies course in parentheses following the title:

(I) – international and multicultural diversity
(N) – national diversity
(D) – national diversity, and international and multi cultural diversity

For additional information, refer to Integrative Studies in the *Academic Programs* section of the catalog.

The designation code for a multitled course:

(MTC) –multititled course

B Information about the semester of offering, credits and instructional model, reenrollment provision, and interdepartmental status.

The semester(s) the course is authorized to be given is identified. Lack of staff or low student enrollment may preclude offering the course every semester for which it is authorized.

The semester credits are designated to include class hours a week as follows: A(B–C) where:

A = Number of semester credits.
B = Number of class hours a week in lecture/recitation/discussion.
C = Number of class hours a week in a laboratory.

If the credit is indicated to be variable, the number of credits is to be determined at the time of enrollment. If the course is a non-credit course, the credit-equivalent is given in brackets.

Reenrollment provision is identified.

Interdepartmental course status is identified.

C Information about prior academic preparation and student access to the course.

P:M: Prerequisite Monitored = a course to be completed either prior to, or concurrently with, another course. A prerequisite is identified by course subject code and number. The course subject codes and corresponding names are listed on the following pages. When a student tries to enroll the Student Information System (SIS) will verify that the prerequisite is fulfilled.

P:NM: In the on-line version of *Descriptions of Courses* known as the COURSES system, a course may have non-monitored courses listed. Effective Summer 2001, non-monitored prerequisites and recommended background will be combined into one category, known as recommended background.

RB: Recommended Background = prior academic work, experience, or other qualifications that are recommended, but not required, and which will *not* be monitored (either in SIS or by the unit). Recommended work may provide some background that will be helpful and faculty want to signal that to potential enrollees. Such background is not essential to success in the course, nor can faculty assume that students who enroll will have such knowledge.

C: Corequisite = a course that must be completed concurrently with another course. A corequisite is identified by course subject code and number. The course subject codes and corresponding names are listed on the following pages.

R: Restriction = a limitation on student access to the course. For example, a course may be available only to juniors and seniors, or to students in a specified major, department, or college.

SA: Semester Alias = a course identified as the equivalent of another course.

A student who is unsure of eligibility for enrolling in a course shoudl contact the department, school, or college that administers the course.

D A brief description of the course.

COURSE DESIGNATIONS

Throughout the programs of study given in this section, courses are identified either by course subject codes, course numbers, and course titles (example: CSE 101 Computing Concepts and Competencies) or by course names and course numbers (example: Computer Science and Engineering 101). Additional information about specific courses may be found in the *Descriptions of Courses* section of the catalog or in its frequently updated on-line version available at: <<http://www.msu.edu/academics/#officialcatalogs>>.

To assist in locating information about specific courses in the *Descriptions of Courses*, the course subject codes are listed below in alphabetical order. For each subject code, the corresponding name is given.

SUBJECT CODES

ABM	Agribusiness Management
ACC	Accounting and Information Systems
ADV	Advertising
AE	Agricultural Engineering
AEC	Agricultural Economics
AEE	Agriculture and Natural Resources Education and Communication Systems
AFR	African Languages
AL	Arts and Letters
AMS	American Studies
ANP	Anthropology
ANR	Agriculture andNatural Resources
ANS	Animal Science
ANT	Anatomy
ANTR	Human Anatomy
ANTV	Veterinary Anatomy
ARB	Arabic
AS	Aerospace Studies
ASC	Audiology and Speech Sciences
ASN	Asian Languages
AST	Astronomy and Astrophysics
ATL	American Thought and Language
ATM	Agricultural Technology and Systems Management
BCM	Building Construction Management
BE	Biosystems Engineering
BMB	Biochemistry and Molecular Biology
BME	Biomedical Engineering
BOT	Botany and Plant Pathology
BS	Biological Science
BUS	Business
CAS	Communication Arts and Sciences
CE	Civil Engineering
CEM	Chemistry
CEP	Counseling, Educational Psychology and Special Education
CHE	Chemical Engineering
CHS	Chinese
CJ	Criminal Justice
CLA	Classical Studies
CMB	Cell and Molecular Biology
COM	Communication
CSE	Computer Science and Engineering
CSS	Crop and Soil Sciences
EAD	Educational Administration
EC	Economics
ECE	Electrical and Computer Engineering
EGR	Engineering
EMB	Executive MBA Program
ENE	Environmental Engineering
ENG	English
ENT	Entomology
EPI	Epidemiology
ES	Earth Science
FCE	Family and Child Ecology
FCM	Family and Community Medicine
FI	Finance
FIM	Food Industry Management
FMP	Family Practice
FOR	Forestry
FRN	French
FSC	Food Science
FSM	Food Systems Economics and Management
FW	Fisheries and Wildlife
GBL	General Business and Business Law
GEN	Genetics
GEO	Geography
GLG	Geological Sciences
GRK	Greek
GRM	German
HA	History of Art
HB	Hospitality Business
HEB	Hebrew
HEC	Human Ecology
HED	Human Environment and Design
HM	Human Medicine
HNF	Human Nutrition and Foods
HRT	Horticulture
HST	History
IAH	Integrative Studies in Arts and Humanities
IM	Internal Medicine
ISB	Integrative Studies in Biological Sciences
ISP	Integrative Studies in Physical Sciences
ISS	Integrative Studies in Social, Behavioral and Economic Sciences
ITL	Italian
JPN	Japanese
JRN	Journalism
KIN	Kinesiology
LA	Landscape Architecture
LBS	Lyman Briggs School
LCS	Large Animal Clinical Sciences
LIN	Linguistics
LIR	Labor and Industrial Relations
LL	Linguistics and Languages
LTN	Latin
MBA	Master of Business Administration
MC	James Madison College
ME	Mechanical Engineering
MED	Medicine
MGT	Management
MIC	Microbiology and Molecular Genetics
MS	Military Science
MSC	Marketing and Supply Chain Management
MSM	Materials Science and Mechanics
MT	Medical Technology
MTH	Mathematics
MUS	Music
NEU	Neuroscience
NOP	Neurology and Ophthalmology
NSC	Natural Science
NUR	Nursing
OGR	Obstetrics, Gynecology, and Reproductive Biology
OMM	Osteopathic Manipulative Medicine
OSS	Osteopathic Surgical Specialities
OST	Osteopathic Medicine
PED	Pediatrics

PHD	Pediatrics and Human Development
PHL	Philosophy
PHM	Pharmacology and Toxicology
PHY	Physics
PIM	Integrative Management
PKG	Packaging
PLS	Political Science
PMR	Physical Medicine and Rehabilitation
PRM	Public Resource Management
PRO	Office of the Provost
PRR	Park, Recreation and Tourism Resources
PRT	Portuguese
PSC	Psychiatry
PSL	Physiology
PSY	Psychology
PTH	Pathobiology and Diagnostic Investigation
RAD	Radiology
RD	Resource Development
REL	Religious Studies
ROM	Romance Languages
RUS	Russian
SCS	Small Animal Clinical Sciences
SOC	Sociology
SPN	Spanish
SSC	Social Science
STA	Studio Art
STT	Statistics and Probability
SUR	Surgery
SW	Social Work
TC	Telecommunication
TE	Teacher Education
THR	Theatre
UP	Urban Planning
VM	Veterinary Medicine
WS	Women's Studies
ZOL	Zoology