

## *Taxonomy of Postsecondary Courses Based on the National Transcript Samples: 2003*

### **Introduction**

This taxonomy of postsecondary courses is designed to accompany the release of the third of the completed grade-cohort longitudinal studies conducted by the National Center for Education Statistics, the NELS:88-2000, and its allied publications, *Principal Indicators of Student Academic Histories in Postsecondary Education, 1972-2000* (Adelman 2004a), and, in particular, *The Empirical Curriculum: Changes in Postsecondary Course-Taking, 1972-2000* (Adelman, 2004b). Each of the grade-cohort longitudinal studies has included a postsecondary transcript component, including hundreds of thousands of courses taken by the students in the cohort over their postsecondary careers. A system of coding to enable analysts to describe the content of the students' postsecondary curriculum was necessary, and for that reason the taxonomy was developed, *based on the empirical content of the transcripts themselves*.

While the process of development, its principles, and decision-rules is described in detail in *The Empirical Curriculum*, a short review is in order here. The first version of the taxonomy, called *A College Course Map* (CCM), was based on the records of the National Longitudinal Study of the High School Class of 1972, covered the years 1972-1984, and was published in 1990 by the U.S. Department of Education. The coding scheme was a course-based adaptation of *The Classification of Instructional Programs*<sup>1</sup>, a taxonomy initially developed for reporting degree awards in what is now known as the Integrated Postsecondary Education Data System (IPEDS), and known by its abbreviation, CIP. The 6-digit CIP numbering system and its alphabetical (by field—Agriculture to Visual Arts) order was adopted. The second version of the CCM was used in *The New College Course Map: Changes in Course Taking and Attainment, 1972-1993*. This version, an inevitable modification of the original, was based on the transcript records of the second age-cohort longitudinal study, the High School & Beyond/Sophomores, whose postsecondary history spanned the years, 1982-1993. *The New College Course Map* was first published by the U.S. Department of Education in 1995, with a 2<sup>nd</sup> edition in 1999<sup>2</sup>.

The third iteration of the taxonomy, presented here, adds the postsecondary curricular experience of the NELS:88 cohort (1992-2000) to those of its predecessors. The categories detailed in the pages that follow reflect the postsecondary curriculum experienced by that cohort. It is important to note that these categories are not a normative statement of what should be offered by colleges, community colleges, and other postsecondary institutions. Rather, they reflect what was actually studied by the most recent cohort of traditional-age students in their postsecondary careers from age 18 through age 26/27. And, despite the number (1178) and detail of these categories, the taxonomy does not pretend to account for all the courses which this generation of

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<sup>1</sup>Malitz, G., *Classification of Instructional Programs*. Washington, DC: National Center for Education Statistics 1981.

<sup>2</sup>Adelman, C., *The New College Course Map and Transcript Files: Changes in Course Taking and Achievement, 1972-1993*. Washington, DC: U.S. Department of Education, 2<sup>nd</sup> Edition 1999.

students might have chosen to take. On the other hand, the taxonomy reflects those courses which the students of the NELS actually took in sufficient numbers to justify inclusion. It is an outline of the delivered curriculum.

### **The Changing Shape of Delivered Knowledge**

The taxonomy developed from the postsecondary transcript files of three national longitudinal studies appears as a dry ledger: codes, numbers, titles, and occasional explanations and guides for those who would use it at local or state levels.

What was learned in the course of three constructions of the taxonomy of a 12-year period, and in conversations with faculty review teams, is that this ledger possesses some of the dynamics of a language. The codes are signs. They represent at least a surface reality: something that was taught and labeled. The labels, like words, are aggregated into larger configurations. When the reality changes in thousands of courses in thousands of institutions, the labels change. When the labels change, so do the signs.

What changes is not knowledge itself, rather knowledge delivered; delivered in institutions ranging from trade schools to medical schools, but delivered principally to undergraduate students. Some delivered knowledge works its way "down" from the research labs and professorial libraries through the graduate seminars to the undergraduate curriculum (Mueller, 1989; Holton, 1962). In national archives of unobtrusive college records, we do not know that this transformation has occurred until it turns up on paper. Nor do we sense how much internal differentiation and sub-specialization in a field has become institutionalized until undergraduate courses are offered that students actually take and complete. The process occurs first in research universities (Ben-David, 1977) from which it ripples into a wider range of institutions.

Other delivered knowledge works its way "up." That is, in an expanding universe, postsecondary education must work with what secondary education produces. While this relationship is not explored in the presentation of this taxonomy, it appears that changes in the high school curriculum and high school student course-taking in the 1980s may have had an impact on the shape of undergraduate curriculum in the 1990s (Green, Dugoni, and Ingels, 1995). Now that the long-term postsecondary records of the high school class of 1992 are available, it is possible to explore these connections (for a brief example, see Adelman, 2004a, pp. 70-71).

The signs that a particular type of knowledge was delivered can also fade, and not because the knowledge itself was faddish. Rather, new paradigms can arise, and knowledge can be recompartimentalized or segmented (Hopmann, 1991) much in the same way as jobs are reconfigured to meet changing circumstances of production and distribution. The point is that no taxonomy of this kind is forever.

## Skimming Through the Taxonomy

If one simply skims the 130 pages of the 2003 taxonomy and looks for the signs in **bold** type indicating that a category was either suspended, deleted, modified, or new, what patterns emerge? and what hypotheses concerning the shape of delivered knowledge might one draw? Here are some examples (and the reader is invited to find others):

- There is considerable stability within the curricula of higher education. The categories we use to classify delivered knowledge change with the speed of serial history: slowly. Furthermore, many of the changes were not the result of enrollments or student participation rates as much as they were of rethinking the presentation of existing data.
- Fields that grew and differentiated in the past two decades, for example, computer science and communications, developed theory and research courses drawing substantial enrollments. It is as if theory and research confirm the new standing or maturity of the field.
- Growing fields discover their "gateway" courses for majors. For example, Experimental Psychology has been the gateway course for psychology majors for decades, and both the enrollment and participation data for psychology majors reinforce that fact. Psychology is a mature field. But if one looked at the enrollment and participation data for computer science courses in the NLS-72 sample, covering the years 1972-1984, no one category leaps out as the "gateway" course. Not programming, a basic tool, much like calculus is to engineering. By the end of the 1980s, however, and as reflected in the various tables in *The Empirical Curriculum*, Computer Organization/Structure came to play the gateway role, and, in the 1990s, was superceded by Systems Analysis & Design.
- Some growth and differentiation is a direct by-product of technological developments external to higher education. Telecommunications, laser electronics, and medical imaging are obvious examples in the taxonomy.
- Differentiation may not be a by-product of more enrollments, student participation and credit-generation, rather institutional response to demands of the labor market. For example, there are new course categories in Health Assessment, Motor Learning, and Exercise Nutrition, and modifications to the boundaries of other health and physical education-related courses, reflecting the growth of the health-club service industry in the 1980s and 1990s. Simultaneously, the proportion of students who earned credits in these fields increased, but modestly.
- Contraction in enrollments, credit-generation and student participation in a broad field does not necessarily translate into suspended course categories in the taxonomy. Biological sciences is a good example of this apparent paradox. If the benchmark, base-period data for a field are very strong (as they were for the biological sciences in the

1970s<sup>3</sup>) the drop would have to be catastrophic before the taxonomy lost sub-fields. The declines in the biological sciences in the 1980s, while substantial, were not catastrophic, and the field recovered in the 1990s, though with different emphases.

- Nor does differentiation at the "upper end" of a discipline or training field mean that all is well. For example, under English/Letters, the taxonomy covering the period, 1982-1993 added new categories covering writing proficiency and advanced expository writing and an expansion of the boundaries for "Technical Writing." It should be heartening that students are reaching those levels in numbers sufficient to justify expanding the taxonomy. At the same time, though, the proportion of non-incidentals students (those who earned more than 10 credits in their undergraduate careers) taking remedial English/writing courses remained roughly one out of five.

- There has been a noticeable rise in the role of cooperative education and internships, enough so that separate course categories to track this mode of learning-in-context are now found in business, communications, engineering, protective services, recreation, and political science.

Changes affecting specific disciplines are discussed in the short introductions to those fields in which they occurred.

### **How to Read the Taxonomy**

The major fields of the taxonomy are presented in the order of the Classification of Instructional Programs (CIP) system as it was configured in 1990. For each *CCM* code is listed the major course titles and topics covered by the code/category, (where it is not obvious) the governing concepts in cases of modified or new codes, the decision rules (if any) used to determine precisely how a particular course entry on a transcript was coded, and an indication of where allied titles were coded. These comments are also intended to help those in state system offices and institutions in adapting the *CCM* system to their own needs. Five notations flag codes that have a different status in the 2003 than they did in the 1995 and 1999 versions:

**NEW** Category created based on the volume of course-taking in the NELS:88/2000.

**MOD** Substantially modified in scope and/or detail.

**SUS** Suspended, that is, there were not enough cases to justify using a separate code in this edition. In some cases there is a notation indicating where the titles were moved.

**RES** Restored, that is, this code was suspended/deleted in the 1995/1999 editions of the taxonomy because it did not meet the threshold criterion, but it is back in this edition.

**DEL** Deleted. The category has proved unproductive or redundant and/or faculty review panels in the discipline advised dropping it.

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<sup>3</sup> See table 2.2 in Adelman, C. *The Empirical Curriculum: Changes in Postsecondary Course Taking, 1972-2000* (Washington, DC: U.S. Department of Education 2004), for the changing mix of majors among bachelor's degree recipients, 1972-2000.

**The Taxonomy of Postsecondary Courses Based on  
the National Transcript Samples**

**AGRIBUSINESS AND AGRICULTURAL PRODUCTION (01)**

CCM Code

- 010101** Agricultural Business & Management: General; Agricultural Policy; Agriculture & Government
- 010102** Agricultural Business/Finance/Marketing
- 010103** Agricultural Economics, Econ. of Agric. Production
- 010104** Farm & Ranch Management/Business
- 010105 NEW** International Agriculture, World Food Issues, Global Resources for Food
- 010201** Agricultural Mechanics, Farm Mechanics, Agricultural Skills, Farm Shop
- 010202 SUS** Agricultural Electrification, Farm Electrical Systems, etc.  
[Titles moved to 010205]
- 010203 SUS** Agricultural Mechanics, Farm Shop  
[Titles moved to 010201]
- 010204** Agricultural Power Machinery, Field Equipment: Operations and Management, Mechanized Feed
- 010205** Agricultural Structures, Equipment, Facilities, Electrification, Farm Electrical Systems, Farm Power, Farm Machinery
- 010206** Agricultural Soil/Water Practices, Hydrology, Irrigation, Tillage
- "Hydrology" also can appear under Agricultural Engineering (140301), as does "Soil Mechanics."
- 010301** Agricultural Production and Supplies: General, Agricultural Chemicals, Farm Chemicals/Supplies
- 010302** Animal Production, Feed Lot Production, Poultry Production, Pasture/Forage Production, Live Animal Evaluation, Animal Agriculture, Meat Animal Evaluation

CCM Code

**010304** Crop/Cereal/Grain/Fruit/Pasture Production, Greenhouse Crop Production, Row Crops

**010507** Horse Handling & Care, Horse Training, Paddock Management, Horse Science

But "Equestrian" in the title placed the course in 360111. So did "horsemanship."

**010601** Plant Materials, Home Gardening, Organic Gardening, Plant Materials, Aboriculture, Woody Plants, Shrubs

**010602 SUS** Aboriculture, Woody Plants, Shrubs  
[Titles moved to 010601]

**010603** Ornamental Horticulture, House Plants, Indoor Plants, Floriculture, Greenhouse Ornamental Plants, Herbaceous Ornamental Plants, Greenhouse Cut Flowers

**010604** Greenhouse Operations, Nursery Operations

**010605** Landscaping, Landscape Plants, Landscape Management, Planting Design

For "landscape architecture" and "landscape design," see 040601.

**010607 SUS** Turf Management, Recreational Turf, Turfgrass, Lawns

**016001 NEW** Computer Applications in Agriculture, Agric. Data Management

**018001 NEW** Agricultural Co-op/Work Experience

**019999** Agribusiness/Agricultural Production: Other

**AGRICULTURAL SCIENCES (02)**

**020101** Agricultural Sciences: General, Intro. to Agriculture, Agriculture in Society, Science of Agriculture

**020201** Animal Sciences: General, Anatomy of Domestic Animals, Physiology of Domestic Animals, Animal Growth

But titles such as "Vertebrate Physiology" or "Mammalian Physiology" were coded 260706.

CCM Code

**020202** Animal Breeding/Reproduction/Genetics, Artificial Insemination, Sire Selection

**020203** Animal Health, Farm/Range Animal Health/Diseases

These were not veterinary medicine courses. Student major was the key to assignment. On the other hand, Large Animal Care" and "Small Animal Care" usually belong in 182401. If the type of animal was indicated, e.g. dairy, the course was still placed here, and not under "Dairy" (020206).

**020204** Animal Nutrition, Feeds, etc.

**020206** Dairy

**020208** Livestock (Beef, Sheep, Swine), Meat Animals

**020209 SUS** Poultry [Titles moved to 010302]

**020299** Animal Sciences: Other

**020301** Food Sciences, Food Systems, Food Production Processes, Dairy/Meat/ Poultry Production Processes, Food Packaging Systems, Food Chemistry

**020401** Plant Sciences: General

These are not botany courses. See titles in the 2603 series for botany.

**020402** Agronomy, Crop Science, Seed Biology, Tree Fruit Science

**020403** Horticultural Science, Horticultural Botany, Horticultural Production, Plant Propagation, Plant Nutrition

**020408** Plant Protection/Pest Management, Herbicides, Insecticides/Insect Control, Weed Control

As a title, "parasitology," standing alone, is to be found under Biological Sciences, 260610.

**020409 SUS** Range Management, Range Lands, Grasslands (titles move to 029999)

CCM Code

**020501** Soil Sciences, Soil Conservation, Soil Pollution, Soil Chemistry/Physics, Soil Systems, Soil Fertility, Fertilizers, Fertilizers and Plant Nutrition, Soil Resources

The taxonomy distinguishes between the agricultural science "soil conservation" and the environmentally-oriented "land/water conservation" (030201). "Soil Engineering"/"Soil & Water Engineering" were classified under 140301.

**029999** Agricultural Sciences: Other

**RENEWABLE NATURAL RESOURCES (03)**

General interdisciplinary courses in Environmental Studies (303001) and Environmental Sciences (303002) obviously have their own position in the taxonomy. The environmental field underwent a great deal of expansion and differentiation in the 1980s and 1990s, and most of the new categories appear in the 303xxx series, not here. Environmental technologies and engineering, however, continue to appear in the series with codes beginning "14" and "15."

**030101** Renewable Natural Resources: General, Energy and Natural Resources, Land and Water Resources, Energy and Environment, Resource Measurements

**030201** Land/Water Use, Management/Conservation, Soil Management, Water Resources, Water Rights, Water Pollution, Water Quality, Watershed Management, Wetlands

**030202** Conservation: General, Conservation of Renewable Resources, Environmental Conservation, Conservation Biology

**030203** Resource Management & Regulation, Environmental Policy, Environmental Impact, Environmental Administration and Law, Environmental Service

But Environmental Law, as a discrete topic, is coded 220701.

**030204 NEW** National Parks/Parklands, Geology of National Parks

The faculty review panel in physical sciences advised placing the "geology of national parks" courses here, and not under geology.

**030301** Fishing & Fisheries, Fish Culture, Fish Management, Fishery Biology



CCM Code

- 030401** Forestry Production: Gen/eral, Farm Forestry, Forest Products, Forest Utilization, Pulpwood, Logging, Forest Harvesting
- 030501** Forestry & Related Sci: General, Intro. to Forest Resources, Conservation of Forest Resources
- 030502** Forestry Science, Dendrology, Forest Hydrology, Forest Soils, Forest Biometrics
- 030506** Forest Management, Silviculture
- 030509** Wood Science, Forest Mensuration, Tree Growth and Development, Forest Pathology, Wood Biology
- 030601** Wildlife Management & Conservation
- 039999** Renewable Natural Resources: Other

**ARCHITECTURE & ENVIRONMENTAL DESIGN (04)**

- 040101** Architecture & Environmental Design: General, Intro; Architecture and Society, Architecture and Environment, Architecture and Human Behavior
- 040201** Architecture Theory, Architectural Design, Architectural Design Studio, Site Development, Architecture Practice, Housing Design, Architecture Methods, Professional Evaluation/Registration

This code covers most of the major course titles in the architectural curriculum beyond the introductory course (040101). "Architectural Structures" and other related titles are found under Architectural Engineering (140401). "Construction/Building Materials and Methods" are found under 150103. Still other related titles are found in the Building Technologies (150101), Architectural Drafting (480102), and History of Architecture (500740).

- 040301** Community/Rural/Regional Planning/Development, Zoning, Land Use Planning/Development, Facilities Planning, Planning Policy

Specifically "urban" titles were moved to 040701.

CCM Code

**040401** Environmental Design/Systems, Energy Conscious Design, Barrier Free Environment, Environmental Design Technology/Problems

Student major — or the dominant texture of student program — must be the guide to titles using the word, "environment." Titles such as "Building Climatology" and "Building Environmental Controls" were coded 150101.

**040501** Architectural Interior Design, Interior Design Theory/Techniques, Commercial Space, Renovation

These are neither home economics nor art history courses, though their titles may include words such as "color" and "light." For Interior Design as presented in applied arts, see 500407.

**040601** Landscape Architecture, Open Space Design, Physical Landscapes, Landscape Construction, Site Design

**040701** Urban Design/Development, Cityscape, Streetscape, Modern City, Urban Form

**049999** Architecture & Environmental Design, Other

The few "Historic Preservation" titles are found here.

**AREA STUDIES (0501)**

The presentation of Area Studies in the taxonomy seeks to separate out the multi-disciplinary or cross-disciplinary from the bounded historical treatment of a country or world region (see the 45082x and 45083x series) and highly focused topics in political science, e.g. Latin American Politics (451007). A reading of catalogue descriptions of area studies courses testify to the inclusion of historical, economic, political, and anthropological materials and perspectives, but no one of these is the exclusive discipline in the delivered curriculum.

**050101** African Studies/Civilizations/Cultures/Development, Pan-African Studies, Sub-Saharan Political Economy.

"African Nationalism" was classified under Political Science as Comparative/3rd World Politics (451007), but "Pan-Africanism," a movement encompassing more than politics or the ideology of nationalism, was coded here.

CCM Code

- 050102** American Studies, American Civilization, American Character, American Utopias/Dreams/Ideals
- But "American Story" or "The Growth of American Civilization" and similar titles referring to general national development were treated as history surveys, hence under 450810. "American Popular Culture" was classified under an interdisciplinary category (300404).
- 050103** Asian Studies: General, Asian Civilizations, Traditional Asian Cultures/Ideas/Values/Psychology
- 050104** East Asian Studies/Civilizations of East Asia, East Asian Humanities, Japanese/Chinese/Korean Civilization/Life/Culture/Family
- 050105 SUS** East European Studies. Titles moved to 050110.
- 050106** European Studies: General; European Union/Integration/Economy & Society
- "European Civilization" or "Europe's Story" were treated under history (450829), not here. More typical titles for this category: "European Cooperation and Conflict," or "European Community Law:
- 050107** Latin American Studies/Civilization/Culture/Society/Institutions
- 050108** Middle Eastern Studies/Societies, Arab World/Culture/Society, Arab-Israeli Conflict,
- 050109** Pacific Area Studies, Peoples & Cultures of the Pacific, Australian Culture
- 050110** Russian, Slavic, and East European Studies, Russian Culture & Society, Balkan Societies, the Baltic States, Ethnicity in the Former USSR
- 050111 SUS** Scandinavian Studies
- 050112** South Asian Studies, Civilization & Cultures of India, South Asian Identities
- 050113 RES** Southeast Asian Studies; State, Society and Individual in Southeast Asia
- 050114 DEL** Western European Studies. Titles moved to 050106.
- 050115** Canadian Studies/Society/Politics and Art

CCM Code

**050116 NEW** Caribbean Area Studies/Societies, Race and Culture in the Caribbean

**050120 NEW** Non Western Cultures, Civilizations & Societies: General

Cultural treatments of specific societies are found under Anthropology code 450204

**ETHNIC STUDIES (0502)**

**050201** Afro-American/Black Studies, Afro-American Culture/Folklore/Community Development/Dance/Social Thought/Family/Politics/Church/Heritage; Black Writers/Artists/Consciousness

These are either generalized titles, or titles applying to specific subject matter in which "Black" is used, and not "Afro-American." For example, "Afro-American Experience" was coded here because it is generalized; "Afro-Americans in the 19th Century" was coded under "Afro-American History" (450817). "Black Society" is found here, not under "Sociology of Minority Groups" (451103).

**050202** Native American Studies/Folklore/History

These courses are distinct from the anthropological treatment of native American (north, meso, and south) cultures in 450205 by their inclusion of modern history, and the current status of society, economy, and culture. And "Native American Languages" is coded 161001.

**050203** Hispanic American Studies, Chicano Culture/Child/History, Hispanic Culture, Barrios, Mexican-American Culture, Puerto Rican Studies

"Hispanic Civilization" taught in Spanish Departments was coded under foreign languages; Puerto Rican history was coded under Latin American History (450833).

**050204** Islamic Studies, the Nations of Islam, Islamic Civilization

These were neither in Religion (hence,380202) nor Middle-Eastern studies (050108), nor Middle-Eastern history (450834).

CCM Code

**050205** Jewish Studies/History/Literature

These are not courses in Religion, Theology, or Bible. Course titles with reference to Talmud, Torah, etc. were coded either 380205 or (if in theological seminaries) 390601.

**050206** Asian-American Studies, Asians (Chinese, Vietnamese, Filipino, etc.) in America, Asian-American Literature/Child/Media/Institutions

**050210 NEW** Ethnic Studies: General, Race & Ethnicity in the US, Language & Ethnicity, Minority Experience

But Culture Studies and Cultural Diversity titles (without specific reference to race or ethnicity) are in 307001. "Ethnic Groups" was classified under Sociology (see 451103).

**BUSINESS & MANAGEMENT (06)**

The coding of business and management courses was initially informed by analyses of the College Level Examination Program (CLEP) tests in business, accounting, and management fields, the statement of standards of the American Assembly of Collegiate Schools of Business (AACSB), and a variety of publications on curriculum from AACSB. One objective of the taxonomy is to clarify the distinctions among the six "core" fields of the business curriculum: management, accounting, finance, marketing, organizational behavior, and quantitative studies. In fact, the faculty who reviewed the first (1990) taxonomy would have been happy with those six categories plus a code for general business and a code for "other."

Revisions to the 1995/1999 taxonomic representation reflect the impact of technology and the growth of e-commerce.

CCM Code

**060101** General Business, Principles of Business, American Business System, Fundamentals, Foundations, Intro to Business, Business Policy, Business Organization, Business Problems, the Modern Corporation and other general Business Administration titles.

These titles are distinguished from Introduction to Management/Principles of Management (060401). Business History is coded with economic history under 450804.

CCM Code

**060102** Business Law, Legal Environment for Business, Law & Business, Business Transactions and the Law

When taken in law schools, courses with titles such as "Corporation Law," "Commercial Transactions," etc. were coded 220201.

**060103 MOD** Business and Society, Social/Environmental Responsibility of business, Business Ethics, Business & Government

**060105 NEW** Business Strategy, Business Policy

**060201** Introductory Accounting, Principles of Accounting, Accounting Systems

**060202** Tax Accounting, Taxes

But "taxation" or "taxes and estates" or "federal income tax" as courses taken in law schools were coded 220201.

**060203** Intermediate Accounting, Advanced Accounting, Cost Accounting, Auditing, Financial Communications, CPA Review, Managerial Accounting, Fund Accounting

**060204 NEW** Accounting Information Systems, Computer Applications in Accounting

**060301** Finance: Principles, Corporate, Capital Markets, Financial Management, Capital Management, Financial Decisionmaking, Financial Policy, Working Capital

But specific references to "farm," "crop" or "agricultural" finance were coded 010102.

**060302** Bank/Financial Institution Operations, Bank Management, Commercial Banking, Credit Operations

These titles were distinguished from "Money and Banking" under Economics (450657) and from banking occupations titles in the 0702 series. Institutional type and major (where known) were used to distinguish among these titles. Checks of catalogue descriptions of "banking" courses titles in proprietary business schools, AVTIs, and community colleges indicated practical applications, not finance, hence belong in the 07 series.

CCM Code

**060303** Securities and Investments, Stocks, Bonds, Commodities, Futures, Arbitrage, Securities Analysis/Valuation, Options, Investment Management

**060401** Management: General, Theory, Introduction to, Fundamentals of, Survey of, Business Organization & Management, Management Concepts, Management Games

**060403** Operations Management, Product Management, Logistics, Inventory Control, Production Management, Production Planning, Cost Control, Project Management

Some titles here had to be distinguished from those in Industrial Engineering. Manufacturing Management, for example, was coded 141701. Student major and department of instruction are the keys to the assignment.

**060501** Business Economics, Managerial Economics, Economics of Business, Analysis of Business Conditions

**060601** Personnel Management, Human Resource Development, Performance Appraisal and Promotion Systems, Compensation Administration, Supervisory Management, Human Relations in Business, Managing Workplace Diversity

But "principles of supervision" titles that refer to teachers or schools were coded in the 1304 series; and the word, "labor," in the title placed it in 061101. "Supervisory training" and "office supervision" were coded 070401, and "Personnel Psychology" is found under 350106.

**060701** Institutional Management, Hotel Management, Restaurant Management, Hospitality Management/Management Systems

**060705** Transportation Management, Freight Management/Rates/Tariffs, Physical Distribution, Transport Economics

Titles in "public transportation" were coded under Public Works, 440601; titles specifying aviation or airport management were coded 490104. "Traffic Management," was placed under 060403. "Traffic Operations" is a Police Academy course, hence 430140.

CCM Code

**060801** Insurance & Risk Management, Principles of Insurance, Introduction to Insurance, Family Risk Management, Property/Casualty

Titles specifying insurance marketing or sales were coded 081001.

**060901** International Management, International Business, Multinational Corporations

"International Economics/Finance/Trade" titles were placed in 450652, and "International Marketing" in 080703.

**061101** Labor/Industrial Relations, Collective Bargaining, Contract Arbitration, Labor-Management Relations, Unions and Management

**061201 MOD** Management/Business Information Systems, Business Systems Design/Development/Analysis, MIS and Computer Programming

Without a specific reference to a business or management topic in the title, "Information Systems" was coded 110401. Unless one is careful, this category attracts a great deal of "noise" in coding. "Records Management," for example, is 070705; "Office Information Systems" is 070701; "Computers in Business" is 210201; and "Business Information Processing" is 070301.

**061202 NEW** Management of Information Systems, Technology Management

**061301** Business Statistics

"Business & Economic Statistics" was coded here, but "Economic Statistics" was coded 450641. "Business Math" was either 270901 or 270902 (see descriptions at those entries).

**061302** Operations Research, Decision Science/Analysis/Support Systems, Mathematical Decisionmaking, Optimization

The key word is "decision." But "Math for Business Decisions" was classified under Math (270902), not here. "Optimization" also appears under Engineering Math (147001), and student major/department of instruction are keys to code assignment.

**061303** Management Science, Business Research, QuantitativeMethods/Studies/Techniques, Administrative Science/Systems



CCM Code

**061401** Marketing, Marketing Management, Introduction to Marketing, Distribution Channels, Marketing Theory, Channel Management, Marketing Strategy, Marketing Operations Management

The most difficult decisions involved courses in "general marketing" or "introduction to marketing" that might be coded in the 0807 series. The decision rule was that if the courses were *graduate* (i.e. taken in the course of an MBA program) or the student's undergraduate major (if known) was 0603 (finance), 0604 (management), 0613 (operations research/quantitative studies), 0614 (marketing), or 0615 (organizational behavior etc.), then the course was classified under 0614.

**061402** Marketing Research, Behavioral Science in Marketing, Consumer-Marketing Behavior, Consumer Behavior

**061501** Organizational Behavior/Theory/Processes, Organizational Development, Managerial Behavior, Administrative Behavior, Corporate Communications

A reading or catalogue descriptions for "organizational communications" courses justified a more generic treatment than would have been the case by confining them to the business curriculum, and they were coded 097001. "Business Communication" applied to correspondence was coded 070703, and "Management Communication" as 091004.

**061701** Real Estate, Land Finance/Leasing, Appraisal

But "Real Estate Law" and "Real Property Law" were classified under Law (220201).

**061801** Small Business Management/Policies/Operations, Proprietorship

**061901 NEW** E-business, Economics of the Internet

**063001** Internships in Business/Accounting, Co-Op: Management, Business Practicum

**064001** Personal Finance

This is neither a personal service course nor a home economics/family finance title. The former would be classified under "Coping Skills" (370102) and would be less than a three-credit course; the latter would contain the word, "family."

CCM Code

**065001 NEW** Total Quality Management

**066001** Entrepreneurship, New Venture Management, Venture Capital, New Business Ventures, Enterprise Development

**068001 NEW** Business Career Planning

**069001 NEW** Research/Independent Study in Business

**069999** Business Administration: Indeterminate/Other

**OFFICE and FINANCIAL SERVICE SUPPORT (07)**

Student major and degree level (in combination) played a role in assignment of titles here. For example, "Banking" for an office occupations major in a 2-year college or other sub-baccalaureate institution with a certificate (but no degree) was assigned here, not in Business Administration (06) or Economics (4506).

CCM Code

**070101** Accounting & Bookkeeping Support: General, Practical Accounting, Basic Accounting, Pre-Accounting

**070102** Computer Accounting, Accounting Machines, Payroll, Clerical Accounting, Secretarial Accounting

Titles here do not refer to the study of accounting principles, rather to accounting operations.

**070103** Bookkeeping

**070104** Machine Billing/Office Machines, Business Machines, Technical Business Lab, Calculating Machines

**070201** Banking & Related Financial Program Support, Teller Operations, Credit Procedures, Credit Union Operations

**070301** Business Data/Information Processing.

Without the word, "Business" and with computer science as the department of instruction, data processing courses were coded as 110301.

CCM Code

**070302** Business Computer Operation(s), Terminal Operations, Computer Peripheral Operations

**070303** Data Entry

**070401** Office Supervision/Management, Supervisory Training, Front-Office

But "Supervisory Management" was coded 060601, "Law Office Management" is 220302, and Personnel/Supervisory Psychology is 350106.

**070501 RES** Personnel & Training Programs

**070601** Secretarial Programs: General, Secretarial Science, Secretarial Lab, Proofreading, Secretarial Procedures/Administration, Executive Secretarial

**070602** Court Reporting, Transcribing

**070604** Legal Secretarial

**070605** Medical Secretarial, Medical Dictation/Typing

Titles here are distinguished from those in Medical Office Management (170505) and Medical Records Administration (170506).

**070606 MOD** Machine Transcription (all contexts)

**070607** Stenography, Dictation, Gregg Method, Stenotype, Pitman Method, Short Hand, Speed Writing

**070701** General Office Programs, Office Organization, Office Automation, Office Procedures, Office Systems, Office Information Systems

**070702 MOD** Typing, Clerk-Typist, Production Typing, Speed and Accuracy, Advanced Typing

Most typing is now "keyboarding" (see 070803). Courses designed for personal (and not occupational) typing skills were placed in 320108 (see the rules at that entry).

CCM Code

**070703** Business Correspondence, Business Memos, Resumes, Business Communications

The addition of "Business Communications" to this code in the 1995 taxonomy was a major expansion born of the ambiguity of course titles and practice. In a majority of the on-line catalogues examined to explain what a course entitled, "Business Communications," covered, the vast majority were surveys of and training in various kinds of written documents used in the conduct of commerce. While there is no doubt some overlap with Technical/Business Writing (231101), and while some institutions cover verbal and quantitative communication under the umbrella of "business communication," when registrars or deans were asked whether this was a "business support" course or an English course, most responded the former. In those cases in which the course was classified as a writing course under English, it was coded as 231101.

**070705** Filing, Clerking, Records Management, Indexing, Record Keeping

**070801** Word Processing

**070802 MOD** Intro to Office Software (e.g. Windows) and discrete programs other than word processing (070801), data base (210102), Excel, Lotus and other spreadsheet programs (210103), or desktop publishing programs (480202),

General microcomputer applications is coded 210101.

**070803** Computer Keyboarding/Typing

**070901** Business English, Punctuation

These titles are to be distinguished from "Business Writing" (231101), Business Speaking (231001), Business Correspondence/Communication (070703), and Business/Managerial/Professional Communication (091004). They are, by and large, remedial courses, even though they carry credit in non-degree granting vocational schools.

**079999** Business Support: Other

## SPECIALIZED MARKETING, DISTRIBUTION, and ALLIED SERVICES (08)

With the exception of codes beginning, "0807," these are highly-focused occupational training courses.

### CCM Code

**080102** Fashion/Apparel Marketing, Fashion Merchandising, Fashion Product Developmt

**080201** Beauty Salon Management/Sales, Cosmetology Business

**080202** Display, Visual Merchandizing, Exhibit Design, Packaging Management

**080601 SUS** Food Marketing, Grocery Operations

**080702** Industrial Sales/Marketing, Customer Relations

**080703** International Marketing, Global Marketing Strategy, Export Marketing

While requiring a more complex set of knowledge and skills than other courses in the 08 series, the positioning of these titles follows that of the *Classification of Instructional Programs*.

**080704** Purchasing, Buying

**080705** Retailing, Retail Operations

**080706** Sales, Salesmanship, Sales Strategies

**080708** Marketing/Distribution: General/Introduction, Promotional Marketing

Courses with the title, "marketing," coded here had to be distinguished from those coded in the 0614 series. The principal determinant was whether the student's major, when known, was in the 08 series. Institutional type was also used as a guideline, e.g. "General Marketing" courses in Area Vocational-Technical Institutes (AVTIs) and proprietary business schools were coded here.

**080901** Hospitality & Recreation Marketing, Hotel Accounts, Restaurant Accounts

These titles were distinguished from the "hotel management" titles in 060701. The concepts that govern this category are promotion and sales, not management and finance. Titles include hotel/motel services, recreational services/products, etc. Like many others in the 08 series, they are "product training" courses.

## CCM Code

**080903 NEW** Restaurant/Sports/Hospitality Facilities Layout/Design/Management

**080906** Sports and Entertainment Marketing, Promotion, and Management, Concert Promotion, Recording Promotion, Recreational/Leisure Services Marketing

But "Business of Music" and similar titles were classified under 500960.

**081001 DEL** Insurance Marketing/Operations/Claims/Adjusting. Titles moved to 060801.

**081101** Transportation & Travel Marketing

**081104** Tourism

**081105** Travel Services Marketing, Travel Planning, Ticketing, Reservation Systems

**081203** Auto Vehicles/Accessories Marketing/Services

**089999** Specialized Marketing/Distribution: Other

## **COMMUNICATIONS (09)**

As a field in U.S. higher education, communications is a conglomerate. Its sources lie in a variety of disciplines, and the shape of its curriculum in any one institution reflects local history more than national consensus. In some cases, communications emerged from the speech and theater/drama sub-divisions of English departments to embrace film and television. In others, it grew from the work of political scientists and sociologists who studied public opinion, propaganda, and mass persuasion. In still other cases, local departments were enlarged programs of journalism. The 1990 coding of courses in this field focused on three borders: those with English, communications technologies, and film studies. The decision rules strengthened those borders, but did not resolve all ambiguities.

For the *New College Course Map* (1995 and 1999), a special review of the communications area was undertaken that resulted in considerable refinements, for example, disaggregating journalism into four categories, aggregating all courses involving writing for any media (other than news writing) under one roof, distinguishing between communications theory and communications research, sharpening the distinction between advertising and public relations, and adding new codes in telecommunications, inter-cultural communication, and business/managerial communication. For the 2003 version, Oral Interpretation was moved to Drama (500503), public speaking was moved in from its previous position under English, and a variety of categories were added in communications applications.

CCM Code

**090101** Communications: General, Principles, Human Communication, Fundamentals/  
Foundations of Communication/Speech, Communication in Society,

"Speech" courses were given a separate code (090201), with titles that were specific to Debate and Public Speaking placed in 090202, and those dealing with Oral Interpretation, Voice, Announcing etc. moved to Theater/Drama (500503). Generalized "communications skills" courses, when examined on Web-based catalogues, turned out to be either job/workplace oriented (and were placed in 350103) or remedial English 2320 series, and were placed appropriately.

**090201 MOD** Oral/Speech Communication, Effective Speech

Formerly 231001.

**090202 MOD** Public Speaking, Debate, Forensics, (Oral) Persuasion

Formerly 231002

**090301** Communications Theory, Rhetorical Theory, Semiotics and Semiotic Theory

**090302** Communications Research, Research Methods, Media Research, Advertising Research, Audience Analysis, Interaction Process Analysis, Survey Design

**090401** Journalism for Print Media: Reporting, Editing, Feature Writing, News Gathering, Editorial Writing, Copy-Editing, Lay-Out

**090402** Magazine Writing/Editing/Lay-Out and Design

**090403** Broadcast News, Radio/TV News/Newswriting, Newscasting, Electronic News, Broadcast News Production

**090404** Photojournalism

**090405 NEW** Publications, Publications Industry, Publications Media Design

**090501** Public Relations, Marketing Communication, Media Planning, Special Events Promotion, Campaign Development

CCM Code

**090502** Advertising, Copywriting, Commercials, Broadcast Copywriting, Product Promotion

"Advertising graphics" was placed under Commercial Art (480203), "Advertising research" under "Communications Research" (090302), and "Marketing communication" under Public Relations (090501).

**090601 MOD** Writing (exclusive of journalism) for the Media, Script Writing, Screenwriting, Telecommunications Writing, Radio/TV/Film Writing

**090701** Radio/TV: General, Directing, Production, Programming; Electronic Programming, Broadcast Technique, Introduction to Broadcasting, Production Theory, RTF (Radio/TV/Film) introductions

Courses covering explicitly technical aspects of radio/TV production or studio operations, were classified in the communications technology series (10), as were titles referring to FCC license preparation. "Announcing" courses were placed under Public Speaking: Voice, Diction (231002). At the recommendation of the faculty review group, all writing courses in this category were moved to 090601.

**090702** Broadcast Industry, Business of Radio/TV, Radio/TV Management

These are not so much generic "business" courses as "industry-specific" business courses. Courses dealing with the "business" of motion pictures were coded under 500602.

**090703 NEW** TV/Media Criticism

**090801** Telecommunications Policy/Management/Programming

**090901** Mass Communications, Mass Media, Communication Systems, History of Mass Communication, Media Communication, Media Use, TV/Radio/Film in Society, Mass Persuasion, Media as Social Institutions

Basic survey courses in mass media. But "RTF" introductions were placed in 090701 and courses such as "Film as Communication," for example, were placed in 500601. The title, "Minor Media," does not refer to communications, rather to fine arts. "Mass persuasion" was distinguished from "theory of persuasion" (090301).



CCM Code

**090902** Public Opinion & Propaganda, Political Communication, Public Opinion Polls, Politics and the Media

In the 1990 *CCM*, some of these titles, particularly those that referred to elections, were classified under "Political Behavior" (451009). Under the principle of primacy of subject matter, and at the recommendation of external reviewers, all such titles were moved here.

**090903** Communication Law, Ethics, Regulation, Freedom of Press and Speech, Communications and Government

If these courses were taken by students enrolled in Law School, they were classified under 229999, and not here. "Press and Society" was coded under Journalism (090401).

**090904 NEW** Gender/Race and Media/Communications

**090905 NEW** International Communications, Global Media, International Broadcasting

**091001** Interpersonal/Small Group Communication, Personal Persuasion, Non-Verbal Communication, Group Discussion

While most communication is "interpersonal," these titles were distinguished from those under 090101 by their specificity. At the recommendation of the 1995 faculty review group, they were also distinguished from titles in the 0909 series by the criterion of reference to public contexts or mass media. "Persuasion" was placed here, but "Mass Persuasion" was classified 090902 and "Persuasive Speaking" was placed in 090202 (Public Speaking). "Group Dynamics" and "Interpersonal Relations" were coded 421601 and 350101 respectively (but see the decision rules under those two entries).

**091002** Interviewing

Courses in "interviewing" are given in many departments, for example, psychology, social work, journalism. Unless the title or catalogue description specified a distinct disciplinary context, though, it was placed here.

CCM Code

**091003** Intercultural/Multicultural/Cross-Cultural Communication, Cultural Dimensions of Speech, Ethnic Communication Modes, Interracial Communication

But general "Intergroup Relations" titles were coded under Social Psychology, 421601.

**091004** Professional Communication, Management /Executive Communication, Managerial Communication, Business and Professional Communication

The catalogue descriptions of these courses emphasized interpersonal and verbal skills. "Organizational Communication" titles were placed in a new category, 097001, and "Corporate Communications" in 061501; "Business Communication" placed in either 070703 or 231101, with student major and institutional type the determining factors. When the title combined "Business and Professional," it was placed here. "Job Communications," on the other hand, was coded 350103.

**091005 NEW** Negotiations, Conflict and Communications

**092001** Internships in Communication, Journalism

**093001 NEW** Independent Study in Communications

**097001 NEW** Organizational Communications

**099999** Communications: Other, Indeterminable

**COMMUNICATIONS TECHNOLOGIES (10)**

Communications technologies cover courses in discrete production aspects of the media. They should not be confused with any of the categories describing writing or directing for the media (see both the 09 and 5006 series). "Technical Communications" is not communications technologies, and was classified under 231101.

CCM Code

**100101** Multi-Media Technology, Audio-Visual Communication, AV Equipment/Production/Materials, Multi-Media Software Applications

If the title referred to "instruction" through educational media, it was coded as 130501.

## CCM Code

- 100102** Motion Picture and Video Technology, Super 8mm, 16mm technique, Studio Lighting, Film Projection, Video Lab
- But "Film Production," "Film Animation," "Film Techniques" and similar titles were coded under 500602.
- 100103** Photographic Technology, Camera Theory, Photo Sensitometry, Zone System, Photosensitive Materials, Reproduction Photography, Physics of Photography
- A title such as "The Physics of Light/Photog" was coded here, not under Physics.
- 100104** Radio/TV Production Technology, Broadcasting Technology, FCC License, Broadcast Operations, Cable TV Operations, Radio Engineering, TV Graphics, Studio Operations
- 100105** Sound Recording Technology, Sound Studio, Recording Systems, Art of Recording, Mechanics and Sound, Audio Reproduction Systems, Studio Recording Technique, Music Mixing
- 100109** Cable Communications, Cable Casting, Telecommunications Processes/Media
- On the other hand, titles dealing with Telecommunications policy/economics/theory, etc. were coded under 090801, and those dealing with the technology of fiber optics, TCP/IP, etc. in 150306.

## **COMPUTER SCIENCE (11)**

Courses with the word, "computer," in their titles are taught in a variety of departments and stress a wide range of competencies, from design to simple use. The principle used to guide the coding of the entire PETS sample in all three longitudinal studies---the topic of instruction takes precedence over the department of instruction---proved more difficult to apply in computer science and computer-related courses than elsewhere. But the identity of the institution in which the course was taught proved to be very helpful in refining the categories. In the 1990 edition of the *CCM* 12 categories were added to the 11 inherited from the *Classification of Instructional Programs*. The new scheme was designed to identify more advanced courses in computer science (what the Conference Board of the Mathematical Sciences refers to as Level II and Level III Computer Science courses<sup>4</sup>), to distinguish among the different types of programming and applications courses, and to sort out "computer literacy" and general use courses from the pack.

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<sup>4</sup> See Albergs, Loftsgaarden, Rung and Watkins 1992.

For the 1995 version of the *CCM*, a special review and revision of codes in the computer science area was undertaken in light of the considerable growth, differentiation, and refinement of the field during the 1980s and early 1990s. As the field refined its knowledge-delivery system, institutions of different types played more distinct roles. Hence, for example, in the 1107 series (advanced computer topics), one will not find courses taught in less-than-2-year schools and rarely in 2-year colleges. For an analysis of change in the computer science curriculum during the period covered by the 1990 and 1999 editions of the *CCM* see Adelman, C., *Leading, Concurrent, or Lagging?: the Knowledge Content of Computer Science in Higher Education and the Labor Market* (Washington, DC: U.S. Department of Education and the National Institute for Science Education, 1997).

In a very important change for the 2003 NELS taxonomy, the external faculty review panel recommended moving courses in computer applications in specific disciplines to the disciplines themselves (see, e.g. new codes in agriculture, accounting, engineering, engineering technologies, graphics/design) and general applications courses to a new chapter of the taxonomy (see INFORMATION SYSTEMS/COMPUTER APPLICATIONS, Chapter 21).

### CCM Code

**110101** Intro. to Computer Science, Computer Principles, Intro. to Digital Computers, Computer Science (with no other qualifiers), Computers & Programming

This course (as opposed to 110102) is the pre-requisite for upper-level computer science courses.

**110102** Exploring Computers, Computer Use, Problem Solving with Computers, Computer Concepts, Survey of Computer Information Systems, Intro to Computing.

These courses are general introductions to computers and their applications. Basic computer skills courses were assigned to 320110. Computers and Society are 302003.

**110201 MOD** Computer Programming: General

PASCAL and BASIC titles were coded here (but FORTRAN, COBOL, C, and all object-oriented languages were placed in a new 11021x series)

**110202** Algorithms, Algorithmic Development/Methods, Algebraic Language Programming, Computer Logic, Digital Logic, Program Design

CCM Code

**110203 MOD** Machine Language, Assembler Language, Computer Organization/Structure

"Computer/Machine Architecture" titles were moved from this category to Computer Engineering (140901). Student major determines the code assignment here.

**110204** Compiler Language, Grammar, Program Language Theory, Language Processing, Formal Language, Programming Systems, Program Languages

**110210 NEW** Object-Oriented Programming Languages (JAVA, C++, VisualBasic)

**110211 NEW** C Language

**110212 NEW** FORTRAN

**110213 NEW** COBOL

**110301** Data Processing: General, Introduction; EDP; RPG (Report Program Generators), JCL (Job Control Language), File Processing

**110302** Data Structures, Discrete Structures

**110305** Computer Networks, LANs, Data Communications, Distributive Processing

"Communication Systems," on the other hand, was not coded here, rather in either 141001, 150303, or 150306, depending on major. This is a case of a generalized title with multiple positions in the taxonomy.

**110401** Information Science, Information Systems/Structures, Information Networks

These are upper-level courses with an intro CS course as pre-requisite.

**110402** Data Base Systems/Concepts/Management, File Organization/Design/Structures, Information Storage and Retrieval, Relational Data Bases, SQL

**110501** Systems Analysis, Systems Development/Design, Systems Organization, Computer Control Systems, Operating Systems, Systems Software/Programming, Systems Architecture, Time Sharing

Some "design" and "architecture" titles were placed in Computer Engineering (140901), provided the courses were taught in 4-year colleges and student major was in engineering or engineering technologies. Deterministic Systems and Inventory Systems titles were placed in 141701, and Stochastic Systems in 147001. "Systems Programming" was placed here; "Programming Systems" was coded 110204.

CCM Code

**110502 MOD** Software Engineering, Software Development, Software Methods and Design,

Most of the courses in this category had been classified in 110501, but it was obvious to the faculty panel that reviewed the computer science codes in 2002 that their emphasis on software engineering is qualitatively different. Likewise, all systems software courses that might be coded 140901 were moved here, even if the student was an engineering major.

**110601 DEL** Computer Applications: General, Unspecified; Applied Micro, Software Applications

These titles are now in 210101.

**110602 DEL** Computer Applications: Science & Engineering, Medical Information Science, Basic Scientific Programming, Engineering Computing Methods, Computer Aided Design, CAD, Computer Based Design, Computers in Engineering, Fortran for Engineering, Biomedical Computer Applications

These titles are now in 146001, 156001 and 155001 (CAD), 170903 (Medical Info Systems), 110212 (FORTRAN)

**110603 DEL** Computer Applications: Business/Management/Accounting, Computers in/for Business, Data Processing with COBOL

These titles are now in 060204 (Accounting Information Systems), 210201, and 110213 (COBOL).

**110604 DEL** Computer Applications: Other Fields.

These titles are now in 016001 (agricultural applications), 480202 (desk top publishing), 500406 (digital illustration)

**110605 NEW** Internet Construction Software, Web Pages, Web Administration, HTML.XML

**110606 NEW** E-learning design, Computer Instructional Design

This is not “computers in the classroom” (130502). It’s software and software systems development.

CCM Code

**110701** Simulation, Modeling, Parallel Processing

This category covers some of the "Level III" subjects in the undergraduate surveys of the Mathematics Sciences Education Board<sup>5</sup>.

**110702** Analysis/Theory of Algorithms, Theory of Computation, Automata, Automata Theory, Graph Theory

**110703** Artificial Intelligence, Computer Vision, Pattern Recognition, Expert Systems, Machine Learning

**110704** Computer Graphics, Graphics Design

If student major was in the fine arts (5007 series), design (5004 series), film (5006 series) or graphic communications (4802 series), titles such as these were considered applications courses and were coded 500406.

**110801** Numerical Methods, Numerical Analysis, Linear Programming, Mathematical Programming, Discrete Math

This category was designed to capture second-level computer mathematics courses normally taught outside mathematics departments. Courses with titles such as "Computer Mathematics" or "Data Processing Math" were grouped with Finite and Discrete Math as *mathematics* courses (270202).

**110901** Other Determinable Topics. The dominant titles here, however generalized, were Computer Lab, Computer Methods, Computer Problems, Computer Techniques, and so forth.

**119999** Computer Science: Unknown or Indeterminable.

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<sup>5</sup>See Albers, Loftsgaarden, Rung, and Watkins 1992.

## PERSONAL SERVICES (12)

Only four categories in this section were viable in the first (1990) edition of the taxonomy (based on the NLS-72 postsecondary transcript sample). For the 2003 version, some disaggregation of the cosmetology curriculum was recommended by an external faculty review panel that reviewed occupational course work in the NELS:88/2000 transcripts.

### CCM Code

**120301** Funeral Services, Embalming, Mortuary Management

**120403** Cosmetology, Barbering, Hairstyling, Color Treatment, Permanents, Coloring, Facial

Note that "Salon Management" and related titles involving sales, marketing, and state law were coded 080201. Transcripts from cosmetology schools often have entries for Charm, Poise, Personal Appearance, etc. If these were credit-bearing (they usually are not), they were coded 370104.

**120404 NEW** Cosmetology biology, Physiology of Hair, Anatomy of Scalp

**120405 NEW** Cosmetology Safety/Hygiene

**120407 NEW** Manicure, Pedicure

**120801 NEW** Massage

**129999** Personal Services: Other

## EDUCATION (13)

Not all courses with the word, "education," in their titles belong in the 13 series any more than all courses with the word, "communication," in their titles belonged in the 09 series. For example, "Drug Abuse Education" is often a student personnel service course for college students, and was classified accordingly in the 34 series, particularly when the number of credits awarded was less than three.

In all the subject-matter education codes (1313 series), subject matter took precedence over level of education. Thus, "Elementary School Science" was classified as Science Education (131316), not Elementary Education. Likewise, a particular subject taught "for elementary/ secondary school teachers" was classified under education, not under the subject, for example, "Chemistry for Teachers" is Science Education (131316), not Chemistry; and "Geography for Elementary Teachers" is Social Science Education (131318), not Geography.



For a number of reasons, 10 codes in the Education section failed to meet the threshold criteria for inclusion in the 1995 *CCM* and were either suspended, combined with other categories, or deleted. The percentage of Bachelor's degree recipients majoring in education dropped precipitously (from over 16 percent for the NLS-72 cohort to about 7 percent for the High School & Beyond/Sophomores), and the areas most affected were in special education and vocationally-related education. Fewer majors obviously means fewer cases of course-taking. In the NELS Cohort, however, the proportion of bachelor's degree recipients majoring in education rebounded to nearly 10 percent, and an additional 4 percent of bachelor's degree recipients majored in other fields but prepared for teacher certification<sup>6</sup>. Three of the previously suspended categories were thus restored in 2003.

### CCM Code

**130101** Education: General, Education and Society, Problems in Education, Foundations of Education Theory and Practice of Education, Issues in, Public School System, Education Policy

But not "Social/Historical/Philosophical" Foundations. Those titles were placed under 130901.

**130201** Bilingual/Crosscultural Education, Bilingual Child, Bilingualism

**130202 NEW** Pluralistic Classroom, Diversity in the Classroom

**130301** Curriculum, Curriculum Theory, Applied Theory

**130302** Instruction, Methods & Materials.: General, Creative Activities, Teaching Behavior, Listening/Learning Styles, Teaching Strategies, Teaching Process, Group Process in Education

This is the basic classroom methods category. It was used when neither the level nor subject matter was specified. Thus, "Methods in Math Education" was classified under 131311, not here; likewise "Classroom Management in the Secondary School" was placed under 131205.

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<sup>6</sup>See Adelman, C. *The Empirical Curriculum: Changes in Postsecondary Course Taking, 1972-2000*, (Washington, DC: U.S. Department of Education, 2004) table 4.1.

CCM Code

**130303 NEW** Classroom Management, Behavior Management, Classroom Discipline

**130401** Educational Administration: General, School Administration, Education & Law, Principalship, School Buildings and Grounds, School Finance, Educational Supervision

**130406 SUS** Higher Education Administration/Research, Community College Administration

**130501** Educational Media, Instructional Media/Technology, Media for Elementary/Secondary Schools, Preparation/Use of Media/A-V Materials

The category does not cover "Operation of A-V Equipment," or "Audio-Visual" without a specific reference to teachers or level of schooling. These other titles were placed in 100101.

**130502 MOD** Computers/Technology in the Classroom, Computer Education/Assisted Instruction

**130601** Evaluation and Research in Education: General, Research Methods, Evaluation Techniques, Education Program Evaluation

**130603** Educational Statistics

**130604** Educational Testing, Measurement, Assessment, Individual Assessment

**130801** Educational Psychology, Human/Child Growth and Learning, Human Development and Learning, Learning Process, Learning in Schools

For "Child Development," see comments under 200102. Courses on developmental theorists, for example, Piaget, were placed in 420701 unless there was an explicit reference to schools or schooling. "Psychology of Learning," "Learning and Memory," "Learning and Motivation," etc. titles are in the new 420303.

**130802 RES** School Psychology

In the 1990 *CCM*, "school psychology" was split from educational psychology." But the data driving the 1995 CCM failed to produce a threshold number of cases for "school psychology." The data driving the 2003 taxonomy brought School Psychology back into the account.

CCM Code

**130901** Social/Historical/Philosophical Foundations (of Education), History and Philosophy of Education

**131001** Special Education: General, Exceptional Child, Special Needs Child, Special Populations, Mainstreaming

For broader presentations of exceptionality (child and adult), see 421004.

**131003** Special Education: Deaf/Hearing Impaired, Speech Correction

These titles are distinct from those in the 1801 series (Speech Pathology & Audiology) in that they specifically refer to "Special Ed," "SPED," or similar abbreviations

**131004** Special Education: Gifted & Talented, Creative Child

Allied titles include those under the new code for Psychology of Exceptionality (421004).

**131005** Special Education: Emotionally Handicapped/Disturbed, Education for Autistic Children

**131006** Special Education: Mentally Handicapped

**131007** Special Education: Multiple Handicapped

This category is also used for any Special Education title in which more than one disability is mentioned, e.g. "Education of EMR."

**131008 SUS** Special Education: Physically Handicapped

All cases in the 1995 data base were either Adaptive Physical Education (171003) or allied health courses in the rehabilitation series (codes beginning with "1708"). In the NELS:88/2000 data base (2000), there were very few residual titles, and these were moved to 131099.

**131010 DEL** Special Education: Remedial Education

The few cases were moved to 131099.

CCM Code

**131011** Special Education: Learning Disabilities, Reading Disabilities

The keywords are either "disability" applied to a cognitive process or "LD." If the title were "Corrective Reading," for example, it belonged in 131315, "Reading Education."

**131012 DEL** Special Education: Speech Correction

Titles moved to 131003.

**131099** Special Education: Other

**131101** Student Counseling, Guidance, Educational and Vocational Guidance

The word, "counseling," also appears in course titles under "Counseling Psychology" (420601), Social Work (440701), and various categories of the 1704 series (Human Services). Student major is a helpful guide to placing the title. The titles under 131101 should refer to *school* settings. "Vocational Guidance" is sometimes a personal service course in the 32 series (either 320105 or 320107). If a 1-credit course, it was placed there.

**131102** Higher Education Student Personnel Services

**131201** Teacher Education: Adult and Continuing Ed, Teaching Adults, Community Education

The "agricultural education" extension course titles were not placed here, rather under 131301. "Parent Education" was coded 200107, and "Parental Involvement" and similar titles were coded 131701.

**131202** Teacher Education: Elementary Education, Activities for Elementary School, Books/Materials for Elementary School, Elementary School Program, Playground Activities

Any subject matter "for Elem Teachers/School" title was placed under the 1313 (Subject Matter Education) series. There was one exception: titles referring to *more than one* subject, for example "Sci & Soc Sci for Elem" (a literal transcript entry). Those titles were placed here. Titles referring to curriculum, materials, classroom management, activities, etc. without the keyword, "elementary," were placed in either 130301 or 130302.

CCM Code

**131203** Teacher Education: Junior High/Middle School/Intermediate School

**131204** Teacher Education: Early Childhood/Pre-Elementary, Pre-School, EC/ECE, Young Child, Montessori Methods, Kindergarten

These designations supersede all other concepts attached to the title, for example, "Counseling the Young Child" was assigned here, and not to Counseling (131101). One exception involved titles referring to testing and measurement; the other, student teaching (131501). "Child Development" course titles were placed in 200101.

**131205** Teacher Education: Secondary Education

These are methods, theory, and materials courses with a specific level-of-education reference. Without the keyword, "secondary," these titles would be placed under either 130301 or 130302 (the general "Curriculum and Instruction") categories.

**131206** Higher Education Teaching, Instruction, Class Management, Teaching Assistantship (for graduate students only)

Undergraduate teaching assistantships are coded 906000.

**131301 RES** Agricultural Education, Agricultural Extension Education, Cooperative Extension

**131302** Art Education, School Arts & Crafts

**131303 RES** Business/Marketing/Distributive Education, Teaching Typing, Teaching Shorthand

**131304** Driver and Safety Education

"Water Safety Instruction," however, was coded in 340108. And most "Safety and First Aid" titles, particularly those carrying less than 3 credits, were treated as Health Activities courses, and coded 340105.

**131305** English Education, Teaching Literature, Teaching Writing/Rhetoric/ Composition

"Children's Literature" titles were coded with Language Arts (131323).

CCM Code

**131306** Foreign Language Education, Teaching X (a foreign language)

**131307** Health/Nutrition Education, School Health Program, Foundations in Health & Phys Ed, HPE Activities in Elementary/Secondary School, Sex Education

If "Health" preceded "PE" in the HPE titles, they were placed here; if the converse, then in 131314. If "school" was not mentioned in conjunction with "Health Activities," the title was placed in the code series beginning with "34."

**131308 SUS** Home Economics Education

**131311** Mathematics Education, Concepts of Math for Elementary Teachers, Math in the Elementary/Middle/Secondary School

The key phrase for math education courses was "for teachers." However, course titles such as "Number Structures," "Number Systems," and "Math Structures," without any other qualification were classified under mathematics (see 271001).

**131312** Music Education, Music Pedagogy, Music in Schools, Music Fundamentals for Elementary Teachers, Keyboard Methods & Materials, Orff Method, Suzuki Method

"Music Pedagogy" is not necessarily a course designed for teaching in *school* settings. Nonetheless, it is coded here under the "primacy of subject" principle.

**131314** School Physical Education, Coaching, HPE in Schools, Basketball/Soccer/Gymnastics (and other sports) for Elem/JHS/Secondary Schools, Organization and Administration of HPE (but *not* HPER--see 171001), Teaching X (any specific sport or physical activity)

This code applies to school-based physical education curricula, that is, courses to prepare physical education teachers for *schools*. The code does not cover physical education for work in non-school settings, and from physical education courses that did not specifically reference a school context. These others are found either in the HPER series (1710) or under the 31 series (Recreation). "Adaptive" physical education titles (referring to training individuals to teach physical education to special population) were coded 171003. "Motor Development" is now coded 170805.

CCM Code

**131315** Reading Education, Diagnosis/Prescription in Reading, Corrective Reading, Basic Reading Instruction

**131316** Science Education, X (any specific science) for Teachers, Teaching X (any specific science) in Elementary/Junior High/Secondary school.

**131317 NEW** Environmental Education

**131318** Social Studies Education, History/Geography (and other social science subjects) for Elementary/Secondary Teachers, Social Studies in Elem School/Grades

**131320** Vocational Education, Technical Education, Philosophy of Voc Ed, Organization of Voc Ed, Industrial Arts Education, Teaching IA

**131322** Drama Education, Dance Education, Creative Movement for Children, Dance Activities Elementary, Play Production Secondary School, Teaching Theater

**131323** Language Arts, Children's Literature, Literature for Adolescents, Reading and Language Arts, Story-telling, Teaching Handwriting/Spelling/Language Skills

Titles with the word "Reading" were placed here only when found in combination with "Language Arts," "Children's Literature" etc. Some states have different certifications for reading teachers and language arts teachers, and codes acknowledge that distinction.

**131399** Teacher Education Subjects: Other, Indeterminable

**131401** TESOL, English for Non-English Child, Theory/ Practice of ESL

This category is distinguished from 232004, a category covering courses in English for native speakers of other languages.

**131501** Student Teaching, Directed Teaching, Field Placement, Observation & Participation, Supervised Teaching, Field Experience, Field Workshop, Internship, Supervised Teaching

With the exception of student/directed teaching and field experiences in content areas, for example, "Student Teach: Art," all the above titles were placed here. "Student Teach: Elementary," for example, is to be found here, and not under Elementary Education.

## CCM Code

### **130502 NEW** Practicums in Education

The 2003 taxonomy realized a recommendation of the original (1990) external review, and separated practicums from student teaching.

### **131601 NEW** Reading in Content Area

### **131701 NEW** Parent/Home/Community Relations

### **139999** Education: Indeterminable, Other

## **ENGINEERING AND ENGINEERING TECHNOLOGIES (14 and 15)**

The assignment of course titles in engineering (the 14 series) and engineering technologies (the 15 series) departed in many ways from analogous tasks in other fields. Perhaps no other areas in the *Classification of Instructional Programs* illustrate better what the CIP was created to do: describe degree/credential programs, not courses. This is in the very nature of engineering and engineering technologies. Each sub-field is a composite, an interdisciplinary that draws on many discrete courses from other areas of the college curriculum. And more than any other sections of the 1985 version of the CIP, the descriptions for each category in the 14 and 15 series truly delineate *programs*. Nonetheless, the CIP had been used to code courses, and, given that inheritance, the job for this course-based taxonomy was to make sure that the representation in engineering and engineering technologies fields was as accurate as possible. For that reason, external faculty review panels specializing in engineering were engaged for the 1990, 1995, and 2003 versions of the taxonomy.

The 14 and 15 series include many cases of parallel fields, for example, Civil Engineering (140801) and Civil Technologies (1502), Mechanical Engineering (141901) and Mechanical Design Technology (150805), and so forth. In these cases, decision rules were established for the assignment of courses based on the institution of instruction.

For the 1995 version of the *CCM*, a special external review and revision of the engineering/engineering technology sections of the taxonomy was undertaken. Refinements to both the codes and decision rules as to what goes where were considerable. The review process for what has become the 2003 taxonomy confirmed these changes, but recommended moving Engineering Graphics/CAD to Engineering Technologies (155001), and turning 151101 into a Engineering Technologies parallel to 141101.



CCM Code

**140101** Introduction to Engineering, Engineering Design, Engineering Communication, Professional Orientation, Engineering Concepts, Engineering Science

External reviewers recommended including these titles under the "Engineering: General" code (as opposed to the "Other/Indeterminable" code, 149999). "Engineering Design" courses are not necessarily introductory. In fact, some of them, with titles such as "Engin Design V," are clearly advanced courses.

**140201** Aeronautical Engineering, Aerospace Engineering, Astronautical Engin, Aerospace System Design, Aeroelasticity, Aerodynamics

If taught in universities with engineering programs, titles concerning Powerplant, Flight Mechanics, and Airframe were placed here. Otherwise, they were assigned to Aeronautical Technology (150801) or Aircraft Mechanics (470602) codes.

**140301** Agricultural Engineering, Farm Power Engineering, Food Plant Engineering

**140401** Architectural Engineering, Architectural Structures, Beam and Column, Timber/Steel/Concrete Design

If the student was a Civil Engineering major, "Structures" titles were coded 140801.

**140501** Bioengineering, Biomedical Engineering

**140701** Chemical Engineering, Biochemical Engineering, Electrochemical Engin., Fluid Flow Applications

**140801** Civil Engineering, Highway Engineering, Hydraulic Engineering Structural Analysis, Site Engineering

**140901** Computer Engineering, Systems Design, Digital Logic/Logic Design, Digital Computer Design/Theory, Digital Circuits, VSLI Design, Discrete Time Systems, Real Time Systems, Lumped-Parameter Systems, Computer Architecture

Any title with the word "digital" placed the course here, as opposed to 141001. "Software Engineering" courses were coded 110502. For "Digital Logic" courses, student major or texture of transcript determined whether they were coded here or under Computer Science.

CCM Code

**141001** Electrical Engineering, Electronics Engineering, Communications Engineering, Basic Electrical Circuits, Circuit Analysis/Design/Measurement/Theory, Log Pulse/Switch/Sequential Circuits, Analog Signals

Courses with "AC" or "DC" or "Electricity" in the title were assigned to Electrical/Electronics Technology (150303), particularly if taught in 2-year colleges and/or if the student was not an engineering major. For "Solid State" titles, see 150305.

**141101** Engineering Mechanics, Statics, Dynamics, Kinetics, Applied Mechanics, Mechanics/Strength of Materials, Rigid/Deformed Body Dynamics/Mechanics, Deformed Solids, Fracture Mechanics, Mechanical Properties of Materials

The 1995 faculty review team decided to move all courses with the above titles into this category. However, Materials Engineering/Science courses, including "Properties of Materials," were coded 141801.

**141201** Engineering Physics, Applied Physics

These are very mathematically-based courses. "Technical Physics" titles were moved to 158001.

**141301 DEL** Engineering Science

On the recommendation of the faculty review group, the generalized titles in this category were moved to 140101.

**141401 MOD** Environmental Engineering, Environmental Health Engineering, Sanitary Engineering, Wastewater Engineering, Water Resources Engineering

The expansion of coverage of this field is a by-product of reconstructing the 1506 series in Engineering Technologies.

**141501** Geological Engineering, Geophysical Engineering, Geomechanics

**141701** Industrial Engineering, Production Design, Human Factor Engineering, Time-and-Motion Study, Plant Layout, Facilities Design, Work Measurement, Operations Research, Engineering/Manufacturing Management

**141702** Engineering Economics, Cost Engineering

CCM Code

**141801** Materials Engineering, Materials Science, Properties and Structure of Materials

**141901** Mechanical Engineering, Heat Transfer, Engineering Thermodynamics, Automotive Engineering, Energy Conversion, Vibrations, Fluid Mechanics, Kinematics

If the titles indicated sub-system applications, for example, "Fuel and Exhaust Systems," automotive courses were coded under Automotive Engineering Technology (150803).

**142001 SUS** Metallurgical Engineering

**142101** Mining and Mineral Engineering

**142201** Naval Architecture, Marine Engineering, Ship Design

**142301 SUS** Nuclear Engineering, Nuclear Energy Conversion, Reactor Theory/Design

**142401 SUS** Ocean Engineering, Coastal Engineering [Titles moved to 140801]

**142501 SUS** Petroleum Engineering/Processing/Production, Secondary Recovery

**142601** Surveying, Computer Mapping, Geodetic Surveying, Site Surveying

The placement of most courses here was dependent on the identity of the institution. Surveying courses offered in 2-year colleges were assigned to Surveying & Mapping Technologies (150203). Forest Surveying titles were assigned to Forestry Science (030502). "Mapping" and "Photogrammetry" courses were coded under cartography (450702).

**142701** Systems Engineering, Engineering Systems Analysis, Dynamics of Systems, Engineering Systems Design

Systems Engineering is a distinct field, and the titles here are uncluttered by other adjectives.

**145001 DEL** Engineering Graphics, Engineering Drawing

At the recommendation of the external faculty review panel, all Engineering graphics, CAD, and CAD/CAM titles were moved to 155001.

CCM Code

**146001 NEW** Computer Applications in Engineering

**147001** Engineering Mathematics, Engineering Statistics, Engineering Computations, Engineering Analysis, Optimization

These courses were not offered in mathematics departments, and were not classifiable in the terms of the Mathematics codes. "Calculus for Engineers" and similar titles, however, were coded under math (270601). "Optimization" is also found in business curricula (061302). Student major determines the coding.

**148001** Engineering Co-Op/Internship/Field Practice

**149001** Engineering Professional Practice Registration/Seminar/Evaluation

This category collects courses preparing students for the engineering licensure examination.

**149999** Engineering: Other, Indeterminable

**150101** Architectural Design and Construction Technology, Building Technology, Construction Systems, Architectural Equipment, Building Environmental Systems, Building Layout

This category included architecture and some civil engineering courses taught in 2-year colleges, including Building Environmental Systems and Site Development. "Architectural Communications" titles were moved to the Drafting series, and coded 480102.

**150103** Materials and Methods of Construction, Architectural Construction, Introduction to Construction, Building Assembly, Concrete Technology, Foundations, Construction Procedures

**150201** Civil Technologies, Construction Cost Estimating, Contracts and Specifications, Construction Management, Construction Planning, Building and Construction Codes

CCM Code

**150202** Drafting Technology, Electronic Drafting, Design Technology, Applied Design, Model Making

These titles are more distinct than those in the 4801 series. "Technical Illustration" titles were coded under the Graphics/Design series, 500403. "Blueprint Reading for Construction Trades" titles were moved to 460901.

**150203** Surveying Technology, Mapping Technol., Construction Surveying, Land Surveying, Topographic Drafting

**150301** Computer Technology, Data Processing/Digital Hardware, Digital Electronics, Microtechnology, Microprocessors, Digital Circuits/Systems/Communication

**150302 NEW** Semiconductor Technology, Semiconductor Manufacturing Equipment

**150303** Electronic/Electrical Technology, AC Electronics, DC and AC Applications/Theory, Communications Electronics, Basic Electronic Theory, Microwave Technology, Diodes, Transistors, Active Devices, Radar, Electronic Measurements, Transformers, Capacitance

"Basic Electricity" courses taught in both 2-year and less-than-2-year institutions were coded 470101. Most "Electronic Devices" titles were offered by trade schools, and were placed in 470101. Most "Industrial Electronics" titles were assigned to 470105.

**150304** Laser Electronics, Optical Electronics, Fibre Optics

**150305** Solid State Technology/Electronics/Circuits/Theory/Devices/Lab/Applications

**150306 NEW** Telecommunication Technologies, TCP/IP, Network Cabling, Networking and Telecomm

**150307 NEW** Information Technologies, Certification Preparation for Novell, Microsoft, A+, etc., Computer Technical Support

**150399** Electrical and Electronic Technologies: Other

**150403** Electromechanical Technology, Electric Motor Controls, Automation, Mechanical/Auto Controls, Electrical Machinery/Motors, Servomechanisms

CCM Code

**150404** Instrumentation Technology, Analytic Instruments, Instrument Mechanics, Electronic Instrumentation, Biomedical Instruments

**150405** Robotics, Robotics Technology

Some of these courses could be classified as Electrical Engineering (141001), but we kept all of them in one place least the significance of the growth of this field be masked in a more generalized category.

**150501** Air Conditioning, Heating, Refrigeration, Solar Heating/Cooling Technologies, Hydronic Systems, Energy Conversion

The context of a student record determines whether air conditioning and heating titles are coded here or in the 4702 series (repair).

**150506** Water and Wastewater Technology/Treatment, Treatment Plant Maintenance/Operations, Water Pollution Control, Solid Waste Processing, Waste Management, Wastewater Chemistry, Hazardous Waste Management

But "Wastewater Engineering" was coded 141401, general "Water Quality" titles are found in 030201, and HAZMAT control and response in 430401.

**150599** Environmental Control Technologies: Other

**150603** Industrial Technology, Industrial Materials, Industrial Mechanics, Control Systems, Industrial Electronics

**150604** Manufacturing Technology, Manufacturing Processes/Operations, Assembly, Materials Technology, Materials Testing, Manufact. Analysis, Numerical Controls

While "Numerical Controls" was moved to this category from 150403, note that "Statistical Process Controls" are in 150702.

**150607 RES** Plastics Technology

Very few cases in either 1990 or 1995, but restored in 2003.

CCM Code

**150610** Welding Technology, Welding Theory/Process, Welding Metallurgy

If taught in vocational/technical schools, or within automotive repair programs, most welding courses were classified under "Precision Metal Work" (480508).

**150699** Industrial Production Technologies: Other

**150701 MOD** Industrial Safety, Safety Technology, Safety Engineering, Systems Safety, Occupational Safety Management

For the 1995 version of the *CCM*, this category was reconstructed so as to focus more sharply on engineering technology topics, and away from courses that carried 1 credit or less for "safety information," whether personal, shop, or other occupational. These informational courses were usually coded 340105, and (in the 2003 taxonomy) under "Shop Safety" (470901).

**150702** Quality Control Technology, Quality Assurance Technology, Statistical Quality Control, Statistical Process Controls

These titles were not placed under Industrial Engineering (141701) because the range of individuals and institutional types involved was far broader than a code usually reserved for engineering students in 4-year colleges would cover.

**150801** Aeronautical Technology, Aircraft Systems

But titles such as "Landing Gear," "Fluid Lines," "Engine Cooling," and so forth, when taken in 2-year or less-than-2-year schools by students studying aircraft maintenance were coded 470602.

**150803** Automotive Technology, Fuel & Exhaust Systems, Drive Systems

"Internal Combustion Engine" titles were placed here, not in Mechanical Engineering (141901). As in the case of 150801, titles referring to axles, ignition, auto air conditioning, etc. were coded under auto mechanics, 470604.

**150805** Mechanical Design Technology, Analytic Mechanics, Power Mechanics, Machine Design/Processes, Tool Design, Mechanical Systems

CCM Code

**151101 MOD** Applied Engineering Mechanics/Statics/Dynamics

Parallel to 141101 for engineering tech students.

**155001 NEW** Engineering Graphics, CAD

All of the former 145001 titles were moved here.

**156001 NEW** Computer Applications in Engineering Technologies

**158001 NEW** Technical Physics, Technology Physics, Physics with Applications

Formerly 151101

**159001** Engineering Technologies: General, Introduction

**159999** Engineering Technologies: Other, Indeterminable

**LANGUAGES OTHER THAN ENGLISH (16)**

The reconstruction of the foreign language codes for the 1990 version of the *CCM* was fairly simple and straightforward. Only one major governing principle was added: a distinction between elementary/intermediate levels of language instruction and advanced levels, including courses in literature, culture, and linguistics. For comments on coding literature in translation courses, see 230301.

In the 1990 version, all codes were maintained (unless there were zero enrollments), even if they did not meet the threshold criterion, under the *a priori* rule that subjects of particular concern to the national security community would be represented regardless of enrollments. For the 1995/1999 presentations, that requirement was modified because enrollments in some of the less-commonly-taught languages were so low that nothing was gained by distinguishing between introductory or intermediate and advanced presentations. Indeed, in other cases of the less-commonly-taught languages, the sample turned up no enrollments.

The following changes took place in the 2003 taxonomy: (1) the addition of codes for Korean, Hawaiian, and Philipino languages, principally as a product of increased heritage or “legacy” language study; (2) by recommendation of the external faculty review panel, the introduction of special codes for language taught through culture/civilization studies in Spanish, French, German, and Russian; and (3) the movement of American Sign Language (AMESLAN) as a language from its previous position under Allied Health to this “chapter” of the taxonomy (163001).



CCM Code

- 160201 RES** African Languages (Swahili, Wolof, etc.)
- 160301** Chinese: Introductory and Intermediate Levels
- 160302** Japanese: Introductory and Intermediate Levels
- 160321** Chinese: Advanced, Literature
- 160322** Japanese: Advanced, Literature
- 160303 NEW** Korean (all levels)
- 160399 RES** Other Asiatic Languages
- 160402** Russian: Introductory and Intermediate Levels
- 160403 RES** Other Slavic Languages (Polish, Ukrainian, etc.)
- 160422** Russian: Advanced, Literature
- 160432 NEW** Russian Culture w/Language

College catalogue searches revealed that the “culture with language” courses are usually intermediate level.

- 160501** German: Introductory and Intermediate Levels
- 160502** Scandinavian Languages: All Levels
- 160503 SUS** Dutch [Titles moved to 169999]
- 160521** German: Advanced, Literature

"Faust" would be coded here if the student's major and/or other patterns of coursework in German justified it. Without any prior German, it would be coded 230301. So would a title such as "TheFaustian Archetype."

- 160531 NEW** German Civilization/Culture w/Language

Because of the language content, these courses are not classified under History (450826).

CCM Code

**160601** Greek: Classical and Modern, Attic Prose/Drama

But not "New Testament Greek" or Greek taught in theological seminaries — titles placed under Biblical Languages (390101). Most courses in Greek drama are in translation, and were coded 230201 (see comments for that entry).

**160703 RES** Indic Languages (Sanskrit, Urdu, Hindi, etc.)

**160901** French: Introductory and Intermediate Levels

**160902** Italian: Introductory and Intermediate, Italian for Music

**160903** Latin

Not when taught in theological seminaries using Biblical texts (a fact that is usually clear in the course title). Those courses were coded under Biblical Languages, 390101.

**160904** Portuguese: All Levels, Luzo-Portuguese

**160905** Spanish: Introductory and Intermediate Levels

**160921** French: Advanced, Literature

**160922** Italian: Advanced, Literature

**160925** Spanish: Advanced, Literature, Golden Age, Generation of '98, Latin American Literature

**160931 NEW** French Civilization/Culture w/Language

**160935** Spanish for Native Speakers

**160945 NEW** Spanish Civilization/Culture w/Language

**160955 NEW** Civilization/Culture of Hispanic Americas, w/Language

**161001** Native American Languages

**161101** Arabic: All Levels

CCM Code

**161102** Hebrew: All Levels

Not when taught in theological seminaries using Biblical Texts. See 390101.

**162001 NEW** Hawaiian

**162002 NEW** Pilipino, Tagalog

**163001 NEW** AMESLAN

External faculty review panels recommended the splitting of courses involving sign language into two categories: (1) as languages-other-than-English, and (2) as training for assistance to the deaf (170410). Prior to the 2000 taxonomy, all AMESLAN titles were included in 170410 (Allied Health Services).

**169999** Foreign Languages: Other, Indeterminable

**ALLIED HEALTH (17)**

In the 1990 *CCM*, there were three major additions to the area. The first, 170901, covers the generic introductory courses in Allied Health. A second, 172001, is a service course in Medical Terminology (which is also taken by secretaries working in doctors' offices and hospitals). And the third is the entire field of Health/Physical Education/Recreation (HPER), sometimes called (in the 1970s) "Movement Science and Leisure Studies." The courses in this field basically prepare one to enter the health/recreation club service industry and are to be distinguished from those that prepare one to be certified as a Physical Education teacher in schools (131314).

For the 1995 edition of the *CCM*, coding in both the Allied Health (17) and Health Sciences-Services (18) areas was reexamined in light of the fast changing shape of the health professions and health care administration during the 1980s. The result was a considerable consolidation of fields and the opening of new codes in the medical and diagnostic technologies areas. The 1995 faculty review group noted that the words, "clinical," "medical," "laboratory," and "technology," in course titles and *CCM* category titles were more confusing than enlightening. The consolidation improved the clarity of coverage.

By the empirical pressure of course-taking, the 2003 taxonomy evidences two major changes in the accounting: (1) the expansion of the HPER series to cover such topics as sports medicine, physical education testing & measurement, and exercise nutrition, and (2) the differentiation of general introductory courses in Allied Health to include general medical sciences for allied health personnel, health/medical information resources and data analysis, and the social, cultural, and psychological components of health care.

CCM Code

**170101** Dental Assisting

**170102** Dental Hygiene

**170103** Dental Lab Technology, Dental Materials/Ceramics, Crown and Bridge Construction

If offered in dental schools to students pursuing a first professional degree in Dentistry, most titles here would be classified in the 1804 series.

**170104** Oral/Dental Radiology

**170199** Dental Services, Other

**170201** Cardiovascular/Cardiopulmonary Technologies

**170202** CPR and First Aid, CPR and Emergency Care, CPR Certification/Recertification, CPR Update

In the 1990 edition of the *CCM*, these titles were included in 340105, "First Aid/Safety/Lifesaving." The titles above, particularly those carrying two or more credits, are for courses likely to be taken by students in allied health or health science/professions fields. Courses in CPR carrying less than one credit and taken by students in non-health related fields remained in 340105.

**170206** Emergency Medical: Paramedic/Ambulance; EMT; Emergency Health Care, First Responder, First Aid and Emergency Care

In the 1990 edition of the *CCM*, some of these titles were coded under 340105, "First Aid/Safety/Lifesaving." That category has been reconstructed, and titles referring to "Emergency Care" were moved to this position.

**170209** Radiologic (Medical) Technologies, Radiation Dosimetry, Nuclear Medical Technology, Clinical Radiography, Radiation Therapy

**170210** Respiratory Therapy Technology, Respiratory Therapy

**170211** Surgical Technology

CCM Code

**170301** Blood Bank/Hematology Technology, Phlebotomy

**170309 MOD** Medical Laboratory Technologies, Medical Tech:General, Clinical Lab Technology, EEG, Urinalysis, Analysis of Body Fluids

All medical technology and specialty laboratory technologies (except hematology technology, microscopy, and medical imaging and sonography) were moved to this category.

**170311** Microbiological Tech/Applied Microscopy

**170312** Medical Imaging, Imaging Technology, Ultrasound, Sonography

**170401** Alcohol/Drug Abuse/Addiction/Treatment, Addiction and Dependency, Dependency Populations/Rehabilitation/Counseling, Substance Abuse Prevention Techniques

But not titles (usually less than three credits) in Alcohol/Drug Abuse Information, for example, "Drug Awareness," "Drug Attitudes," or "Habit Forming Substances." These are student service courses, and were coded under 340106.

**170402** Community Health/Hygiene, Community Health and Welfare, Community Health Organization/Services

These titles were distinguished from, "Personal Health and Hygiene" (340101), and "School and Community Health" (131307).

**170405** Mental Health, Mental Health Technology/Methods/Treatment/Assisting

**170406 MOD** [Assistance to] Individuals with Disabilities

**170407 RES** Rehabilitation Counseling

**170410** Sign Language Interpretation, Assistance to Deaf

But instruction in AMESLAN. as a language was moved to 163001

**170503** Medical/Physician Assisting, Clinical Office Procedures

**170505** Medical Office Management

CCM Code

- 170506** Medical Records Technology/Administration, Health Record Applications/  
Systems, Medical Insurance
- 170507** Pharmacy Assisting, Dispensary, Pharmacy Technology, Medications, Pharmacy  
Calculations, Office Pharmacology
- 170508 NEW** Veterinary Assistance, Animal Care, Clinical Animal Technology
- 170605** Practical Nursing, Nurse Assisting, LPN
- 170701 SUS** Ophthalmic Services & Technology: All
- 170801** Art Therapy, Music Therapy, Dance Therapy
- 170804** Kinesiology, Exercise Physiology, Movement Science
- Not "Creative Movement," which is sometimes a Physical Education  
Activities course (360108) or an education course (131322).
- 170805 NEW** Biomechanics, Motor Learning
- 170807 MOD** Occupational Therapy, Occupational Rehabilitation: all titles
- 170811 NEW** Orthotics, Prosthetics
- 170813** Physical Therapy: All Titles
- 170816** Recreational Therapy, Therapeutic Recreation
- Note that these are not "recreation" (series 31) titles: they specify  
"therapy."
- 170820 NEW** Alternative Therapies: Herbal, Aroma, Acupuncture
- 170899** Rehabilitation Services: Other

CCM Code

**170901** Health Services and Science: General, Introduction to Allied Health, Contemporary Health Problems, Health Care Systems, Health Delivery Systems, Concepts of Health, Human Disease

Titles in the 1807 series indicate a more specific focus on health organization management and health care *policy*. The 170901 category, on the other hand, is more generalized. For another distinction, titles referring to "individual health" or "hygiene" were usually classified under 340101. Any title referring to "health" that carried less than three credits was not coded here.

**170902 NEW** General Medical Science for Allied Health, Applied Biomedicine

**170903 NEW** Health/Medical Information Resources, Information Tech & Med Data Analysis

**170904 NEW** Psychological/Social/Cultural Components of Health Care

**171001** HPER: Intro/General/Survey/History/Concepts

"Health, Physical Education and Recreation" (HPER) covers generic, non-schoolteacher-oriented courses. It was distinguished from "Physical Education" titles that refer to schools (131314), "Recreation" titles (31 series), and physical education activities courses (usually carrying less than 3 credits).

**171002** Athletic Injuries/Training, Care and Prevention of Athletic Injuries

**171003** Adaptive Physical Education, Physical Education for Special Populations, Recreation for Special Populations

**171004 NEW** Sports Medicine

**171005 NEW** Physical Education Testing/Measurement/Evaluation

**171006 NEW** Exercise Nutrition

**171008 NEW** Independent Study/Research in HPER

**171009 NEW** Field Work, Practicums in HPER

CCM Code

**171099 NEW** HPER: Other

**172001** Medical Terminology

Whether "for secretaries" or "for lawyers" or for somebody else, all medical terminology titles were coded here.

**173001 NEW** Allied Health Externships/Co-op

**178001 MOD** Health Assessment, Holistic Approaches to Health and Wellness,  
Physical Examination

**179001** Clinic: Field Unspecified, Clinical Analysis, Clinical Practicum, Clinical  
Rotation

These are not Clinical Health Sciences (1802) courses. The titles are often found on the transcripts of students in majoring in health services and technologies, sometimes in hospital schools.

**179999** Allied Health: Other

Does not cover such titles as "Math for Allied Health" (270801) or "Medical Law for Health Workers" (229999).

**180101** Audiology, Audiometry, Hearing Disorders, Aural Theory, Hearing Science

**180102** Speech Pathology/Neuropathology, Cleft-Palate, Stuttering

**180103** Speech-Language Pathology/Audiology, Communication Disorders

**180104 NEW** Biology/Anatomy/Physiology of Speech/Communication

**180199** Audiology/Speech Path.: Missing, Indeterminable

**BASIC CLINICAL HEALTH SCIENCES (1802)**

This section of illustrates the role of institution of instruction in the construction of the taxonomy. In the transcripts of the NLS-72 cohort, covering the period 1972-1984, the topics covered by these codes were delivered at specialized schools of medicine, dentistry, and health sciences. The decision rules for coding, then, were heavily dependent on institutional type and academic program. For the 1995 edition, the empirical character of the High School &



Beyond/So college transcript files forced a revision in the treatment of Clinical Health Sciences, for, during the 1980s, the field moved beyond specialized institutions and into the mainstream of U.S. higher education. This group of courses, in fact, has come to rival the biology "service courses" (2608 series) for nursing, and allied health students. In the 2003 taxonomy, categories for clinical pharmacology and clinical nutrition were added.

CCM Code

**180201** Clinical Anatomy, Medical Anatomy, Oral Anatomy, Microanatomy, Neuroanatomy

**180202** Clinical Biochemistry, Dental Biochemistry, Medical Chemistry, Biochemistry of Medicinals, Clinical Chemistry

Courses in "Organic Biochemistry" or "Physiological Chemistry" that normally serve students in nursing and allied health programs were coded 260804.

**180203** Clinical Microbiology, Medical Bacteriology, Medical Mycology

**180204** Clinical Pathology

"Pathophysiology," on the other hand, was coded with the biology service series (260803).

**180205** Clinical Physiology, Medical Physiology

This code was also used to cover courses concerning the study of major functional organ systems, for example, cardiovascular, respiratory, or renal, and courses with the simple title, "Physiology," taught in medical schools and health science centers. "Human Physiology" titles, on the other hand, were classified under biology (260706).

**180206 NEW** Clinical Pharmacology

**180207 NEW** Clinical/Medical Nutrition

**180299** Basic Clinical Health Sciences: Other, Clinical Skills, Clinical Lab, Clinical Methods, Clinical Science (General), Clinical Correlations

See comments under the new 179001 (Clinic) code, and under the revised 170309 (Medical Lab/Tech).

## HEALTH PROFESSIONS/SERVICES (1803-1899)

For any national postsecondary transcript sample taken from a cohort at about age 30, the basic viability of many of the health professions codes depends on what percentage of the cohort attended medical, dental, or veterinary school after earning a bachelor's degree. The same condition does not hold for course codes in chiropractic, optometry, and (sometimes) pharmacy, in which the professional degree is usually the first 4-year postsecondary degree earned by the student, hence is the equivalent of a bachelor's degree. Nor does the condition hold for fields such as nursing, public health, and health care administration.

The 1995 *CCM* taxonomy reflected rationalization in the public health and health administration fields that took place during the 1980s, as well as a focused effort to reduce the "unknowns" among courses in the nursing curriculum. To the latter end, three new codes were established in nursing, and the coverage of other nursing categories was expanded.

For the 2003 taxonomy, additions to codes were concentrated in the non-clinical aspects of professional practice, e.g. practice management, patient relations, medical jurisprudence. The codes dealing with public health (182xxx) were also modified and expanded to take account of increasing study in environmental health and international aspects of disease control.

### CCM Code

<b>180301</b>	Chiropractic	
		Virtually all courses taught in specialized schools of Chiropractic and which contained the key phrase, "for Chiropractic," were placed here.
<b>180401</b>	Dentistry: General	
<b>180402</b>	Preventive Dentistry/Dental Public Health	
<b>180403</b>	Endodontics, RCT (Root Canal Therapy)	
<b>180404</b>	Oral/Maxial Facial Surgery	
<b>180405</b>	Oral Pathology	
<b>180406</b>	Orthodontics	
<b>180407</b>	Pedodontics	
<b>180408</b>	Periodontics	

CCM Code

- 180409** Prosthodontics & Restorative Dentistry, Crowns, Bridges, Bridgework
- 180410** Operative Dentistry/Oral Surgery
- 180499** Dentistry: Other
- 180701** Health Services/Hospital Admin, Hospital/Health Unit Management, Practice Management, Health Care Organization/Evaluation/Marketing, Financing of Health Care, Health and Delivery Systems
- 180702** Health Care Planning, Health Care Policy, Economics of Health Care
- 180705 NEW** Medical Practice Management
- 180799** Health Services Administration: Other
- 180801 NEW** Patient Relations/Care/Communications, Patients and Physicians
- 181001** Medicine: General, Primary Care
- 181003** Anesthesiology
- 181005** Dermatology
- 181006** Emergency Medicine
- 181007** Family Practice
- 181009** Medical/Clinical Immunology, Serology
- For immunology as taught in biology degree programs, see 260503.
- 181010** Internal Medicine
- Includes standard range of internal medicine topics and specialties, such as Cardiology, Thoracic Medicine, Gastrointestinal Medicine, Urology, Endomology, etc.
- 181013** Obstetrics and Gynecology, OBGYN
- 181014** Ophthalmology

CCM Code

**181016** Orthopaedics

**181017 RES** Otorhinolaryngology/Otolaryngology

**181018** Pathology

Only courses taught in medical schools and health science programs were coded here. See comments under 180204 and 260704.

**181019** Pediatrics

**181020 SUS** Physical Medicine & Rehabilitation

**181022 RES** Preventive Medicine

**181023** Psychiatry

**181024** Neurology

**181025** Radiology, Nuclear Medicine

**181026** Surgery: General/Plastic/Thoracic/Neurological

**181027 NEW** Geriatrics, Geriatric Medicine

**181028 NEW** Oncology, Cancer Biology

**181029** Hematology

**181040 NEW** Behavioral Science in Health Professions Contexts

**181080 NEW** Biomedicine, Biomedical Research

**181099** Medicine: Other

**181101** Nursing: General/Principles/Fundamentals/Theory, Nursing Process/Clinic, Professional Orientation, Nursing Tools

**181103** Maternal/Pediatric Nursing, Child Health, Obstetric Nursing

CCM Code

**181104** Medical/Surgical Nursing, Operating Room Nursing, Emergency Room Nursing, Intensive/Acute Care Nursing, Cardiovascular Nursing

**181105** Nursing Administration, Leadership, Professional Roles/Development

**181106** Psychiatric/Mental Health Nursing, Nursing People/Families in Crisis

**181107** Public/Community Health Nursing

**181108** Nursing Research, Nursing Science

**181109** Geriatric/Gerontological Nursing, Care of Aged/Aging Client

**181110** Life-Cycle Nursing, Child-Adult Nursing/Health, Family Nursing/Health

Covers all "life-cycle" titles (e.g. Young Adult, Adult, Middle-Age) *except* those in 181103 (pediatric, maternal, child) and 181109 (geriatric).

**181199** Nursing: Other, Electives

Titles that wound up in this category ranged from "Legal Aspects of Nursing" to "State Board Review" to "Transcultural Nursing" to "Episodic Nursing."

**181201** Optometry

**181301** Osteopathic Medicine

**181401** Pharmacy

Includes all Pharmacy-related titles except Pharmaceutical Chemistry (400505), and Pharmaceutical Law (229999).

**182201** Public Health Lab Science, Epidemiology, Health Research Methods, Infectious Diseases

**182203 NEW** Environmental Public Health, Environmental Toxicology

**182204** Public Health Practice/Management

**182205 NEW** AIDS, SIDS

CCM Code

**182208 NEW** Occupational/Industrial Health/Hygiene

**182210 NEW** International Public Health

**182299** Public Health: Other

**182401** Veterinary Medicine, Large Animals, Domestic Animals, Small Animal Clinic, Feline Medicine, Avian Diseases

The category covers the major titles in the veterinary medicine program. In addition to titles with any abbreviation of "Veterinary" in them (e.g. "Prevent Vet Med"), these include "Clerkship"/"Clinic" coupled with "Large," "Small," or "Domestic" Animals, or (Gross) Anatomy or Physiology of "Domestic Animals," and so forth.

**188001 NEW** Jurisprudence for the Health Professions

This is not the same as Health Care Law taken in law schools (220601).

**189001** Clinic, Clerkship: Field Unspecified

**189999** Health Sciences: Other, Indeterminable

**HUMAN ECOLOGY/FAMILY, COMMUNITY & ALLIED STUDIES (19)**

The evidence of the national transcript samples, along with confirmatory catalogue readings clearly indicated that, by the 1990s, what used to be called "home economics" had become a human ecology field with three major divisions: Family & Community Services (with both research and field experience components); Nutrition, Foods and Dietetics; and Textiles and Clothing. Each of these areas interacts with other major fields, i.e. Family & Community Services with social work (section 44 of the taxonomy), Nutrition & Dietetics with allied health (section 17), and Textiles & Clothing with both design (section 5004) and specialized marketing and distribution (section 08). There are still some vestiges of the former structure of the field, particularly pertaining to consumer-oriented topics, and these are retained in the coding scheme.

CCM Code

**190101** Home Economics: General, Human Environmental Science

**190201** Business Home Economics & Family Finance

The keyword is "family." "Personal Finance," on the other hand, is coded under Business, 064001.

**190301 RES** Family & Community Services, Family & Community, Child/Family/Community

Titles such as "Family Diagnosis and Treatment" usually belong under Social Work (440701). Titles referring simply to "The Family" were coded as 451102. "Community Service," as a title without qualifiers, was coded 440201. The courses under 190301 are focused on the relationship between family *and* community.

**190401** Family/Consumer Management: General

**190402** Consumer Science, Consumer Economics, Consumer Issues, Consumer Decisions, Consumer and the Law, Consumer Information, Consumerism

Most "Consumer Behavior" and "Buyer Behavior" courses, however, are part of the marketing curriculum and are coded 061402. Student major or the texture of the transcript are key to the assignment.

**190501** Food and Nutrition: General

But Food Science is coded 020301.

**190502 MOD** Experimental Foods, International Foods, Food and Culture

**190503** Dietetics/Human Nutritional Services, Diet Therapy, Diet and Disease, Nutrition and Health, Nutrition Care

**190504** Human Nutrition, Principles/Elements, Essentials of. . ., Food & Nutrition, Child Nutrition, Community Nutrition

Note that nutrition titles appear in other contexts, e.g. Exercise Nutrition (171006) and Clinical/Medical Nutrition (180207). 1-credit nutrition courses are coded under General Health/Wellness Information (340101).

CCM Code

**190599** Food Science/Nutrition: Other

**190601** Human Housing: General, Human Shelter, Family Housing, Housing Costs

Student major is a key to assignment here, as some "housing" titles can be found in Architecture (04 series), Architectural and Civil Technologies (1501 and 1502 series), and Building Trades (46 series).

**190701** Individual & Family Development: General, Human Development in Families

Titles referring to "Adult Development" usually belong in 420701, and "Adolescent Development" in 420702.

**190702 NEW** Family/Child/Spouse Abuse/Violence

**190703** Family Counseling/Stress/Crises

Student major (where known) should determine the assignment: if Social Work or Human Services, the course was not classified here.

**190704** Family Relations/Communication, Parent-Child Interaction

Also "Marriage and Family Relations," but not "Marriage and Family" (451102).

**190705** Gerontological Services

If the student is a nursing major, the course probably belongs under 181109.

**190706 NEW** Genealogy, Family History

**190710 NEW** Research/Research Methods/Independent Study in Family & Community

**190720 NEW** Internships, Field Experience in Family & Community Studies

**190901** Textiles & Clothing: General, Culture/Society and Dress, Dress and Human Behavior

But the keyword, "consumer," placed a textile title in 200301.



CCM Code

**190902** Fashion Design/Analysis/Planning/Theories/History

**190904** Textile Science, Textile Fibers, Textile Testing/Evaluation, Fabric Studies

Student major is a key to the assignment of "textile technology" titles. An Engineering or Engineering Technology major will place the title in the 14 or 15 series.

**190999** Textiles & Clothing: Other

**199999** Home Economics: Other

**VOCATIONAL HUMAN ECOLOGY (20)**

This chapter of the taxonomy is radically recast in 2003 to reflect the expansion of child development services in the postsecondary curriculum along with a increased volume of participation in formal culinary arts (a key component of the service economy).

**200101 NEW** Child/Infant Development/Growth, Pre-School Child, Child Study, Infants & Toddlers, Child Guidance

Most of the Child Development (CD) titles are here, but not Child & Adolescent Development or Child Psychology (420702), Child Welfare (440701), Child & Family (190701), Exceptional Child (131001), and Early Childhood (most likely an education course, 131204). Student major and catalogue descriptions guided the coding.

**200102 NEW** Creative Activities for Children, Media for Children

**200103 NEW** Movement/Physical Education for Young Children

**200104 NEW** Child Development Internships, Practicums

**200105 MOD** Child Care Services, Child Care Management

Formerly 200201.

**200106** Personal Living: Family/Individual Health, Consumer Health

The keywords are "family" or "consumer." Without them, the titles should be coded 340101.

CCM Code

**200107** Family Living/Parenthood, Expectant Parents, Parent Education, Parent Co-Op

These are personal service courses designed to assist individuals, as opposed to academic courses in which problems, for example, of "parenting" are studied. For the latter, see 190701.

**200108** Family Food & Nutrition, Family Meal Management, Food Selection

The keyword in this context is "family."

**200110 MOD** Personal Living: Housing/Furnishings/Equipment, Home Management

Titles included "Refinishing Your Furniture" and "Planning Your Kitchen," i.e., "how-to" courses previously coded in the 3601 series.

**200301 MOD** Personal Living: Clothing Selection, Fashion/Fabric Coordination

All clothing construction/production titles were consolidated in 200303.

**200303** Commercial Garment/Apparel Construction, Patternmaking, Sewing, Stitching, Production, Tailoring

**200305 DEL** Custom Tailoring/Fitting/Alteration

All clothing construction/production titles were consolidated in 200303.

**200401** Food Production/Management/Services: General

**200402** Baking

**200403** Chef/Cook, Culinary Arts

**200406** Food Service & Catering, Beverage Management

**200407 NEW** Wines and Spirits

**200499** Food Production/Management/Services: Other

**200504** Floral Design

**200505 SUS** Home/Interior Decorating

## CCM Code

**200800 NEW** Hygiene/Safety in Food Preparation

### **INFORMATION SYSTEMS/COMPUTER APPLICATIONS (21)**

What was called "Chapter 21" in previous versions of the postsecondary course taxonomy was originally designed to describe secondary school courses in industrial arts, following the alphabetical sequence of the Classification of Instructional Programs (CIP). Over time, the codes in this chapter became less and less viable, and, in the 1999 edition of the *New College Course Map*, only two were left. For the 2003 taxonomy, these were moved to the 4701xx series and the chapter opened up to a new topic recommended by external faculty review panels.

**210101 NEW** Computer Applications: General Office

**210102 NEW** Computer Applications: Data Base

**210103 NEW** Computer Applications: Spreadsheet

**210104 NEW** Computer Applications: Presentation Graphics

**210201 NEW** Computer Applications: General Business

**210202 NEW** Computer Applications: Specialized Service Industries

**210205 NEW** Computer Applications: Social Sciences

**210301 NEW** Computer Applications: Statistical Packages, SAS, SPSS, STATA, etc.

**210901 NEW** Computer Applications: Field Unspecified

### **LAW (22)**

In the 1995 and 1999 versions of the taxonomy, this section was reconstructed along three lines. First, to ensure that the classic curriculum of students seeking LLBs/JDs in law schools was gathered here, as opposed to being scattered elsewhere. Second, to *exclude* courses dealing with the law taught in the context of either business or criminal justice programs. For example, "business law" and "legal environment for business" courses were assigned to 060102. On the other hand, courses in "commercial transactions" taught in law schools were kept here. The same pattern was followed for titles in "criminal procedure." Third, to separate, as much as possible, courses dealing with legal aspects of specific fields and usually taught within those fields. With few exceptions, these were placed in 229999, "Law: Other." Type of institution, student degree level, and student major were all used as criteria in the assignment of specific

titles. For example, a course in "constitutional law" taken by a political science major in a comprehensive college was assigned the code, 451003 ("Constitutional Law, Constitutional/Judicial History") under political science.

For the 2003 taxonomy, a critical category emerged that reflected the growth of para-legal programs, a category that covered "law for para-legals," curricula composed essentially of brief versions of torts, contracts, legal procedure, family law, etc.

### CCM Code

**220101** Law: General, Introductory, Law & Society, Law & Politics, Legal System

**220201** Law [includes Torts, Contracts, Labor Law, Trusts, Administrative Law, Wills, Family Law, Domestic Relations, Agency, Estates, Property, Litigation, Moot Court, Appellate Advocacy, Civil Procedure, Municipal Corporations, Legal Clinic, Patent Law]

This category was reserved for the standard law school curriculum.

**220301** Legal Assisting, Research, Writing; Legal Bibliography, Para-legal, Administration of Wills and Trusts, Probate, Preparation of Documents, Legal Terminology, Legal Drafting

**220302** Law Office Management

**220303 NEW** Law for Para-legals

**220401** Military Law, Military Justice, Law for Commanders

**220501** International Law, Comparative Law, International Arbitration/Litigation, World Law

"International Law Organizations" was coded 440301.

**220601 NEW** Health Care Law, Law & Medicine

**220701 NEW** Environmental Law

**229999 NEW** Law: Other

A miscellany of titles wound up in this category, including, "Education and the Law," "Pharmaceutical Jurisprudence," etc.

## ENGLISH/LITERATURE IN ENGLISH (formerly "Letters"), (23)

The 1990 recoding of English/literature in English courses involved establishing decision rules for different levels of writing courses, for sorting literature courses, for distinguishing literature in translation from literature in the original language, and for delineating borders between English and communications, teacher education, and other fields involving communication or language skills.

In the process, three new 4-digit series were created: 2301 for general literature and genre topics; 2320 for remedial language skills courses; and 2390 for special topics in literature.

The 2301 series categories were used for general titles, along with titles covering groups of authors or genre and period combinations which could not be classified under "comparative," "English," or "American" literature (e.g. "Short Fiction of the 19th Century," "Yeats and Stevens"). If the title specified "English Fiction of the 19th Century," then the course was classified as 230801; "Cumings and Stevens" would be American Literature, 230701. "Walker and Baldwin" would be Afro-American Literature, 230702.

The 2320 series was used to cover basic skills and developmental writing, remedial reading and reading improvement, and basic speech (see commentary on the 09 series with respect to speech). Course titles referring to "Children's Literature" or "Adolescent Literature" were not classified as English courses: they were placed in Education under 131323 (Teacher Ed: Language Arts).

For the 1995 *CCM*, there were some minor modifications involving writing courses. New codes were established to account for Writing/English/Proficiency examinations (230403), one of only two places in the taxonomy of *courses* that examinations are so flagged (the other is in engineering), and advanced expository writing (231102). The 2003 taxonomy confirms prior changes.

### CCM Code

- 230101** Literature: General/Introduction to, World Literature, Literary Masterpieces
- 230102** Poetry: General/Introduction to, Epic, Lyric, Narrative Poetry
- 230103** Fiction: General/Introduction to, Short Story, Short Fiction, Novela
- 230104** Drama: General/Introduction to

The category covers drama as literature. It does not include theater arts titles such as "acting," "directing," and so forth. These are covered in 500501. Nor does it cover "history of the theater" and "theater criticism" courses. These are covered in 500502.

CCM Code

**230105** Non-Fiction Prose, Biography, Essays

**230201** Classical Literature, Greek/Roman Literature (Drama, Poetry) in Translation, [Specific Authors] for example, Aeschylus, Virgil, Plautus; [Specific Works] for example The Odyssey, the Orestia, Classical Mythology

The works of classical historians, e.g. Herodotus, Pliny, were not coded here, rather under 450802, "Ancient History."

**230202** The Bible as Literature, Poetry of the Old Testament, Life and Language of the Bible, Bible History and Literature, Literature of the Old/New Testament

This category is distinguished from Bible studies in a theological context (390201) and various Bible titles under the Religion series (3802). The titles covered here were distinctly secular. Institutional type (Carnegie code) was used as an additional guideline. A Bible course in a Carnegie Code 51 institution (seminary, bible college) was not coded as a "Bible as literature" course.

**230301** Comparative Literature: European Literature in Translation, Continental Literature

This is a challenging category. If the student is majoring in a foreign language, the chances are high that a course in that literature (e.g. 19th Century French Fiction) or the work of a single author (e.g. Goethe) will *not* be in translation, hence should be classified under the appropriate code in the 16 series. However, the student's major is not always the best guide, and coding looks to the student's other language background (including high school courses) for guidance. Typical titles under 230301 include Renaissance Literature Continental Fiction, Romanticism, Medieval Epic, Dante/Chaucer/Cervantes (and similar combinations).

**230302** Comparative Literature: Non-Western, Third World Literature in Translation

**230401** Freshman Composition, Freshman English, College English, Composition & Literature, Composition & Rhetoric, Reading & Composition, Exposition

This is the standard freshman composition course. Catalogue readings helped distinguish the level of competence addressed from those described in 230402 and 232001.

CCM Code

**230402** Spoken/Written English; Advanced Grammar, Grammar and Composition, Grammar and Reading, Grammar and Usage, Word Origins, Vocabulary Building

The titles here indicate a level of freshman composition that is somewhat remedial. The emphasis is on "correct usage." Courses in this category carry additive credit, thus distinguishing them from those under 232001.

**230403** Writing Proficiency, English Proficiency Exams, Writing Competency, Placement Exam, RTP Essay, RTP Reading, English Comp Exam

"RTP" stands for Regents Testing Program, a notable feature of the public higher education system in Georgia. See comments for 907001

**230501** Creative Writing, Writing Poetry/Fiction/Drama

Writing for television, film, and radio is not covered here, rather in 090601.

**230601** Linguistics: General, Introduction to, Semantics, Philology, Descriptive Linguistics, Contrastive Linguistics, Dialectology,

This is not anthropological linguistics. If the title read "Linguistics/Language and Culture," the course was coded 450206.

**230602 NEW** Linguistics: Syntax, Generative Grammar, Structure of Modern English, etc.

**230603 NEW** Linguistics: Phonetics, Phonology

**230604 NEW** Sociolinguistics

**230701** American Literature, American Fiction/Drama/Poetry/Humor/Short Story, American Renaissance, American Realism/Romanticism, Transcendentalism, [individual or groups of authors, e.g. "Poe, Hawthorne, Melville"]

**230702** Afro-American Literature/Fiction/Drama/Writers, Harlem Renaissance

**230801** English Literature: All Periods, Metaphysical Poets, Romantic Poets, Bloomsbury Group, Anglo- Saxon Epic, Victorian Age, Augustan Age, Jacobean Drama, [individual or groups of authors, for example, "Chaucer and His Century"]

**230802** Shakespeare

CCM Code

**231001 DEL** Public Speaking, Debate, Oral Interpretation, Forensics, Parliamentary Procedure, Business & Professional Speaking, Argumentation, Platform Speech

Titles moved to 090202.

**231002 DEL** Voice & Articulation, Diction, Speech and Theater Arts, Radio/TV Announcing

Titles moved to 500503

**231101** Technical Writing, Writing in the Disciplines, Writing About . . .(biology, literature, etc.), Business and Professional Writing, Writing in Organizations, Academic Writing, Technical Reporting, Informational Writing, Analytical Writing, Technical Communication

"Business Writing," with no other words, was coded 070703 unless it was a course in an MBA program. With few exceptions, the word, "writing," is the key to all the title assignments here. If the word is "communication," and not "writing," the chances are high that the course should be coded elsewhere, for example, "Professional Communication" was coded 091004. A review of course descriptions from a sample of catalogues indicated that "Technical Communications" should be here, even though such courses often cover the presentation of graphic information along with prose.

**231102** Advanced Composition, Argumentative Writing, Advanced Essay

**231301** Criticism, Literary History, Theory, Research Methods, Bibliography

**232001** Remedial English: General; Basic Skills English, Language Skills, Writing Skills, Grammar, Punctuation, Spelling, Developmental English, Elementary Communication

Courses in this category do not carry additive credit, a key to coding "Communication Skills" was coded here, unless there was a specific reference to context, e.g. workplace communication skills is 350103.

**232002** Basic Reading, Reading Improvement, Reading Skills, Reading Comprehension

"Speed Reading" was coded here in the 1990 edition. But it is not a remedial course, and was given a separate slot: see 233001 below.



CCM Code

**232003** Remedial/Basic Speech, Basic Oral Communication, Basic Oral Skills, Listening Skills

Transcript indications of non-additive credit place the titles here.

**232004** English as a Second Language, ESL

**233001** Speed Reading

**239001** Other Determinable Literature Topics

Some common examples include Comedy, Satire, Tragedy, Heroism, Science & Literature, Psychology & Literature

**239002** Science Fiction, Fantasy

**239003** Folklore, Mythology (General)

**239004** Literature & Film/Film as Literature

**239999** Letters: Indeterminable

**LIBERAL/GENERAL STUDIES (24)**

In the original CIP system, these categories were created, in effect, to describe the general Associate's degree. In preparing the 1990 taxonomy, we found many course titles that fit these categories, that is, they did not refer to even the broadest fields of study (science, humanities).

For the 1995/1999 accountings, this series was expanded to capture honors programs, generic freshman/sophomore/junior seminars, and to account for the rise of courses in "critical thinking" that could not be classified as either "interdisciplinary" or basic skills. The 2003 taxonomy adds a code for General Research Techniques (field not specified) and Quantitative Reasoning. The latter was based on a review of catalogue descriptions of mathematics courses that were not designed for instruction in the various sub-discipline lines of mathematics.

CCM Code

**240101** Liberal Arts & Sciences, Liberal Studies, Lyceum, Freshman/Sophomore/Junior Seminar, Honors Colloquium, General Honors Program, Lecture Series, Contemporary Issues/Ideas

CCM Code

- 240102** General Studies, Core Curriculum, Great Books
- 240103** Critical Thinking, Analytic Thinking, Methods of Inquiry, Practical Thinking
- 240104 NEW** Research Techniques, Research Information (subject not specified)
- 240105 NEW** Quantitative Reasoning, Mathematical Ideas, Applied Problem Solving

When catalogue descriptions were examined, these courses could not be classified under mathematics, and were treated as a sub-species of general education.

**LIBRARY AND ARCHIVAL SCIENCES (25)**

Even if the title specified "for the library," such entries as "Storytelling" or "Children's Literature" were classified under 131323 (Teacher Education: Language Arts).

- 250101** Library/Archival Science: General
- 250301 NEW** Information Organization/Transfer/Use

These courses are distinguished from those dealing with "information systems" as offered in business or computer science curricula.

- 250401** Library Science, Cataloging, Classification, Non-Book Materials
- 250501** Museology, Archival Science, Manuscript Collections

**BIOLOGICAL SCIENCES (formerly "Life Sciences") (26)**

One of the residual problems in the *CCM* taxonomy was that of accounting for courses under the general rubric of "biopsychology." For the 1990 edition, and after consulting with faculty in both disciplines, the basic decision rules for courses normally taught in a biopsychology curriculum included classifying "behavior genetics" under genetics (260615), giving "animal behavior" its own category (260707), making sure that the various neurobiology related titles were classified under "neuroscience" (260608), placing three and four-credit courses in "drugs and behavior" under psychopharmacology (421401), and assigning all other biopsychology titles to physiological psychology (421101).

For the 2003 taxonomy, the anatomy titles were clearly distinguished between human (260601) and plant (260301). Microanatomy was included under 260606, and neuroanatomy under neurosciences (260608). An immunology code was added (260503) to distinguish courses in

that field that were not taught in medical schools. At the recommendation of the external faculty review panel, too, codes were added (to parallel those in psychology) for undergraduate and graduate independent study/research.

CCM Code

**260101** General Biology, Introductory Biology, Biosciences Survey, Biology: Zoo + Bot, Organismic Biology, Biology of Organisms, Structure and Function of Organisms

Also, titles such as Life Sciences or Concepts of Biology are coded here provided that they have a laboratory specified. See decision rules for 262001.

**260102** Human Biology, Human Ecology, the Human Body

These courses are sometimes taught in anthropology departments, and often presented in an inter-disciplinary framework.

**260201** Biochemistry, Proteins, Enzymes, Enzymology, Nucleic Acids

**260202** Biophysics, Biomechanics

**260301** Botany: General, Introduction; Biology of Plants, Seed Plants, Vascular/Non-Vascular Plants, Plant Anatomy

But not "Plant Science," which is coded 020401, or "Plant Kingdom," which is coded 260310.

**260305 RES** Plant Pathology: General

**260307** Plant Physiology/Morphology/Development/Chemistry

**260310** Plant Taxonomy, Plant Diversity, Plant Systematics, Plant Kingdom

**260399** Botany: Other, Indeterminable

**260401** Cell Biology

**260402** Molecular Biology

CCM Code

**260501** Microbiology

Most electron microscopy titles in 4-year colleges were placed here. The exceptions (along with microscopy titles in 2-year colleges) were titles such as "Applied Microbiology and Microscopy," assigned to 170311 (Microbiology Technology under Allied Health).

**260502** Bacteriology, Virology

**260503 NEW** Immunology, Immunobiology

Distinct from the type of immunology taught in medical schools (see 181009).

**260601 MOD** Anatomy: Human and Animal, Microanatomy, Neuroanatomy

These are neither A&P (Anatomy and Physiology) courses (see 260801) nor Clinical Anatomy (see 180201).

**260602** Biometrics and Biostatistics

**260603** Ecology, Population Biology, Bioecosystems, Plant Ecology, Environmental Biology, Aerobiosis, Life Systems

**260604** Embryology, Developmental Biology, Reproductive Biology

**260605** Endocrinology

**260606** Histology, Cytology, Microanatomy

**260607** Aquatic Biology, Marine Biology, Limnology, Aquatic Plants

**260608** Neurosciences, Neurobiology, Neurophysiology, Neuroanatomy

**260610** Parasitology

**260612** Toxicology

**260613** Evolution, Heredity

CCM Code

**260614** Field Biology, Field Natural History, Field Botany, Wildlife Biology, Local Flora/Fauna

In some ways, all "field" courses are methods courses, and can be grouped together. All the local/state/regional flora and fauna courses are included in this category.

**260615** Genetics, Molecular Genetics, Plant Genetics, Human Genetics, Behavior Genetics

**260701** Zoology: General, Introduction

**260702** Entomology

**260704** Pathology: Human and Animal

But not if taught in a medical school. See comments for 180204 and 181018.

**260705** Pharmacology: Human and Animal

This category does not include pharmacology courses taught in schools of pharmacy. Those courses are classified as Pharmacy (181401). It also does not include pharmacology courses taught in medical schools or in graduate programs in clinical health sciences (see 180206).

**260706** Physiology: Human and Animal

**260707** Animal Behavior/Language/Communication, Ethology

**260708** Ornithology

**260799** Zoology: Other

**260801** Anatomy and Physiology, Applied Anatomy, Applied Physiology (service course)

These courses are frequently found on the transcripts of students majoring in nursing, allied health, physical education, recreation, and chiropractic.

CCM Code

**260802** Plants and the Environment, Plants & Civilization, Plants and Man

This is not a "service course" in the same sense as others in the 2608 series, that is, it is not a requirement of other majors. Rather, it is a "babified" version of Botany, and the 1990 faculty rating team did not want to include it in the 2603 series.

**260803** Pathophysiology, Introduction to Disease (service course)

**260804** Organic Biochemistry, Physiological Chemistry, Human Biochemistry (service course)

See comments under 260801. At the recommendation of the faculty review teams for the 2003 version of the taxonomy, courses previously coded 400530 (Chemistry for Allied Health Sciences) were moved here.

**260805** Human Growth and Development, Life Span Development

This course, like 260802, is also less of a "service course" than others in this category. In the NLS-72 data base, courses with this title were also classified in anthropology, home economics, and psychology. But a catalogue check demonstrated that they were most likely to be a second course in a "Human Biology" sequence. Catalogue checks for the NELS:88/2000 confirmed this position.

**260901 NEW** Biotechnology

**262001** Life Sciences: General/Liberal Arts, Living World, Biology in Contemporary World, Life on Earth, Bio Concepts, Survey of Biological Principles

This category is analogous to those for Chemistry (400520) and Physics (400820) that cover courses presented for students not continuing in science studies at all. For titles such as "Life Science" and "Biological Concepts," the rule for classifying a course here is that the institution also offers a general biology course.

**267001 NEW** Undergraduate Research in Biological Sciences

**268001 NEW** Graduate Research/Theses in Biological Sciences

**269999** Life Sciences: Other, Indeterminable

## MATHEMATICS (27)

Basically, the only mathematics codes in the 1985 version of the CIP that remained untouched by our 1990 reconstruction were those for Statistics (270501) and Mathematics: Other (279999). With the advice of representatives of the Mathematical Sciences Education Board, new codes were set so that all categories coded 2701 were unquestionably pre-collegiate mathematics, and that all categories coded 2702 were college-level but pre-calculus math.

Based on the empirical evidence of the High School & Beyond/Sophomore cohort transcript sample, the 1995 *CCM* refined title sorting under the Calculus and Advanced Math codes, and included two new codes to capture (a) advanced statistics courses taught in math departments, and (b) "babified" math courses that have less to do with mathematics per se and more to do with the social dimensions of math.

For the 2003 taxonomy, approximately 1000 generalized mathematics course titles (e.g. Intro to College Math, Mathematics for Business, Technical Math) were examined in on-line catalogues of over 200 institutions, and decision rules based on content specifications and pre-requisites set for each. The courses were coded by institutional specifications, not by general title, so that, for example, what was called Technical Math and described in terms of logs and trigonometric functions was coded as Trigonometry (270203). Intermediate Algebra (now 270105) was split off from the previous comprehensive pre-collegiate Algebra code (270103), and Differential Equations (270650) was split out from the Calculus code, as was the short-course, Survey of Calculus (now 270603).

### CCM Code

- 270101** Pre-Collegiate Math: General, Basic Concepts of Math, Elementary/Intro Math, Essential Math, Developmental/Preparatory Math
- 270102** Arithmetic, Computation, Pre-Algebra Math
- 270103** Pre-Collegiate Algebra, Elementary Algebra, Basic Algebra, Preparatory Algebra
- 270104** Pre-Collegiate Geometry, Plane Geometry
- 270105 NEW** Intermediate Algebra

The equivalent of high school Algebra 2 titles were previously included with all pre-collegiate Algebra. Since some institutions (principally community colleges) grant degree credit for these courses, external faculty and registrars' panels advised splitting out this higher gradation of Algebra studies.

CCM Code

**270199** Other Pre-Collegiate Math

Catalogue readings indicated that these courses tended not to be so much “remedial” as a summary review and recasting of everything students should have learned in a full high school mathematics program that stopped short of calculus. The pre-requisites for the courses coded here almost always specify Algebra 2.

**270201** Introduction to College-Level Math, Core Math, Math as Liberal Art, Comprehensive Math, Math for Behavioral/Economic/Social Science, Sophomore Math, Contemporary Math

What pushes the math-level across the college-level line? Based on the on-line catalogue readings, such topics as linear programming, game theory, logic+sets+functions combinations, statistics, and combinatorics—not as exclusive topics of coverage, rather as parts of a sample..

**270202** Finite & Discrete Math, Computer Math, Data Processing Math, Sets and Logic

The computer/data processing math courses classified here are the first level courses in the field. Advanced computer math courses are coded 110801. Discrete math taught in computer science may turn up in a title such as "Discrete Logic," and will be coded 110202, or, in advanced form, in 110801.

**270203** College Algebra, Trigonometry

Basic on on-line catalogue descriptions, the dividing line between “College Algebra” and “Algebra 2” seems to lie in the pre-requisite of two years of high school algebra.

**270204** Pre-Calculus, Analytic Geometry, Elementary Functions, Analysis, Mathematical Analysis, Intro to Analysis, Calc I (see 270601)

But "Real Analysis" and "Analysis Theory" are advanced math courses and are coded 270701. "Analysis" without any other qualifiers may also be a post-calculus math course. In the absence of a catalogue check, student attainment in mathematics and major provide the clues. It is also highly unlikely that "Analysis" in a 2-year college is anything but 270204.



CCM Code

- 270501**      Statistics, Probability and Statistics, Descriptive Statistics, Inferential Statistics,
- This category is confined to statistics taught in mathematics departments. Other codes in the CCM, both old and new, account for statistics taught elsewhere, for example, 061301 (Business Statistics), 450641 (Economic Statistics), 458001 (Social Statistics), 421501 (Quantitative Psychology), 260602 (Biostatistics), and 147001 (Engineering Statistics).
- 270502**      Advanced Statistics, Stochastic Models, Regression, Probability Theory, ANOVA, Time Series, Path Analysis, Mathematical Statistics, Statistical Models
- 270601**      Calculus, Linear Algebra, Calc II, Calc III, Calc IV
- In institutions with multi-semester/quarter calculus sequences, Calc I will be coded 270204 (pre-calculus/analytic geometry).
- 270602**      Calculus for Life Sciences/Economics/Business, Calculus For Tech, Applied Calculus, Calculus for Decision-Making
- 270603 NEW** Survey of Calculus, Short-Course Calculus
- 270650 NEW** Differential Equations, Partial Differential Equations
- 270701**      Advanced Mathematics Topics, for example, Abstract Algebra, Advanced Analysis, Number Theory, Combinatorics, Topology, Game Theory, Modern Algebra/Algebraic Structures, Real Analysis, Complex Variables, Advanced Calculus, Vector Analysis, History of Mathematics, Fourier Analysis
- 270801**      Technical/Vocational Math, Physical Measurements, Merchandising Math, Nursing Math, Shop Math, Math for Electronics
- 270802 NEW** Descriptive Geometry
- 270803 NEW** Technical Math: Using Scientific Calculators
- 270901**      Business Math: Pre-Collegiate, Business Computations, Business Arithmetic, Consumer Math
- Catalogue readings confirmed that most courses in this group are clerical math and bookkeeping math courses, hence arithmetic based.

CCM Code

**270902** Business Math: Collegiate, Math for Finance, Math for Business/Economics/  
Accounting, Business Algebra

When on-line catalogue descriptions indicated that these courses included calculus, they were coded 270602.

**271001** Number Systems, Number/Mathematical Structures, Algebra for Teachers,  
Geometry for Teachers

These courses are offered by mathematics departments to Teacher Education majors, yet are not classifiable as "Mathematics Education" (131311). Note that "Number Theory" was coded 270701.

**272001** Math Appreciation, Mathematics in Society, Math in the Modern World, the  
Uses of Math, Cultural Mathematics, Survey of Mathematical Thought

**279999** Mathematics: Other, Indeterminable

General "Applied Math" titles wind up here because they don't tell us what kind of applied math is at issue. Nonetheless, if the student is a math or computer science major, "Applied Math" can be classified as 270701.

**MILITARY SCIENCES and NATIONAL SECURITY (28 and 29)**

The courses classified here are usually the generic cadet training courses in the service academies and ROTC programs. Some of the major titles used across all of the services include "Basic Cadet Training," "U.S. Military Forces," "Operations and Tactics," "National Security," "Defense Policy/Strategy/Organization, and "The Professional Officer."

For the 1995 CCM, "Military Law" and related titles were moved to a special new category under Law, 220401. The Military Technologies series (29), was comparatively unproductive for the 1990 and 1995 editions, and was thus dropped. But it was restored for the 2003 taxonomy under the rubric of national security studies.

**280101** Air Force, Aerospace Studies, Growth/Development of Air Power

If a course title refers to "Ground School" or "Pilot Training," unless the Air Force is specifically named in the title or the texture of the transcript indicates that the student is either a cadet or ROTC candidate, the title was classified under 490102.

CCM Code

**280201 SUS** Coast Guard Science [Titles moved to 289999]

**280301** Military Science, Combined Arms Operations, Small Unit Tactics

Other titles included "First (Second) Year Basic," which is not a computer programming course, "Command Comm," which is not the name of a software file (the title was also found under 280101), and "Rangers," which is not a game.

**280401** Naval Science, Navigation (and Celestial Navigation), Sea Power, Ship Systems, Naval Organization/Management, Central Systems

"Naval Electronics" was classified here and not under Naval Engineering.

**289999** Military Science: Other, Indeterminable

**290101 NEW** National Defense, Military Policy

**290201 NEW** National Security Issues

**INTER/MULTI-DISCIPLINARY (30)**

The 1990 version of the *CCM* taxonomy took account of a number of key field developments of the 1970s, including environmental sciences-studies and Science, Technology and Society (STS) programs and courses. In addition to reconstructing and filling in this section, new codes for the Philosophy of Science under Philosophy (the 3801 series) and the History of Science under History (the 4508 series) were added.

For the 1995 and 1999 editions of the *CCM*, the changes in this section occurred as a result of the continued growth and differentiation of women's studies, environmental studies, and STS programs in the 1980s and early 1990s.

The 2003 taxonomy reflects the differentiation of environmental studies, and interdisciplinary approaches to cultural (as opposed to ethnic) diversity. It also reflects interdisciplinary studies of death and dying (305001) and immigration (306001).

CCM Code

**300101** General Science, Natural Science, Science Fundamentals, Basic Science, Integrated Science, Frontiers of Science, Matter/Energy & Life

Some of these may be interdisciplinary, but most are broad, multidisciplinary introductions. The category was originally titled, "Biological and Physical Sciences," and courses with titles such as that are still offered.

CCM Code

**300102 SUS** General Laboratory, Lab Techniques, Instrumentation

Again, these courses are not so much inter- or multi-disciplinary as unanchored to any particular science, type of science (biological or physical), or engineering, and readings of on-line catalogues confirm this description. For the 2003 taxonomy, the number of cases did not meet the threshold criterion.

**300103** Introduction to Technology, Technological Studies, Applied Science

These are not engineering technology courses that would otherwise be classified as 159001.

**300104 NEW** Basic Science Skills, Remedial Science

**300105 NEW** Scientific Terminology, Greek/Latin for Science

**300201** Clinical Pastoral Care

**300401** Humanities: General, Survey; Search for Meaning; Language, Thought & Culture

Also covers titles such as Philosophy & Literature. But "Great Books" and "Great Ideas" titles were coded 240102.

**300402** Humanities and Social Sciences; Self, Culture & Society

**300403** Humanities and Arts

Combinations such as Literature and Art, or Music/History/Literature are covered here.

**300404** Popular Culture

Titles here referred explicitly to mass culture and/or media such as comic books, broadsides, television shows, and so forth.

**300405 NEW** Creativity, Imagination

**300501** Peace Studies, Conflict Resolution/Management

CCM Code

**300701** Women's Studies: General and Topics; Feminist Theory, Women in Society, Women's Changing Roles, Women's Lives, Women and Politics, Women and the Law, Women in Business, Feminist Perspectives, Feminist Philosophy

Note that there is also a "Women's History" code under history (450870), and a Sociology of Gender code (451116) under sociology.

**300702** Women in Literature/Art/Music/Film

**300703** Women's Psychology, Psychology and/of Women

**300709** Gender Studies, Language and Gender, Men's Issues, Sex Roles, Masculine/Feminine, Gender & Politics, Gender & Community

But specialized courses in communication and gender are coded 090904.

**301001** Future Studies, Futuristics, Utopias

**302001** Science, Technology and Society (STS), Scientific Values, Genetics and Human Values

**302002** Bioethics, Medical Ethics, Engineering Ethics

**302003 NEW** Computers and Society/Culture, Computers & People, Information Age

**303001** Environmental Studies/Issues/Problems, Human Survival, Environment and Society, Natural Environment

The titles classified here (those above, and many others) exclude those dealing directly with "conservation" and "regulation" of natural resources, as those titles have their own home in the taxonomy (0301 and 0302 under "Renewable Natural Resources").

**303002** Environmental Science, Environmental Technology

For specific environmental control technologies, see the 1505 series.

**303004 NEW** Environmental Ethics

**303005 NEW** Natural Hazards, Natural Disasters

**303006 NEW** International Environmental Issues/Policy

CCM Code

**304001** Sports and Leisure Studies, History of Sports, Philosophy of Sports, Sports and Society, The Economics of Sports, Sports and the Law

**305001 NEW** Death & Dying, Thanatology

**306001 NEW** Immigrants and Immigration

**307001 NEW** Cultural Diversity/Pluralism, Intercultural Understanding, Multi-Culturalism

Broader than ethnic studies (050210), though inclusive of ethnic diversity.

**307002 NEW** Prejudice, Discrimination

**308001 NEW** Violence, Aggression

On-line catalogue descriptions made it clear that these courses were not limited to psychological or sociological approaches.

**309999** Interdisciplinary Studies: Other

Unclassifiable titles were coded 908000, not here.

**RECREATION AND LEISURE STUDIES (31)**

These are not physical education or leisure activities courses. Rather, they are occupationally-oriented courses preparing individuals for various roles in the recreation industry.

CCM Code

**310101** Recreation and Parks: General, Community Recreation, Intro to Recreation, Leisure Services

**310201** Outdoor Recreation, Camp Counseling, Campcraft, Camp Administration

**310301** Sports, Parks and Recreation Management, Administration of Recreation, Recreation Program Development, Org/Management of Community Athletics

**310501** Sports Officiating, Refereeing, Umpiring

**310601** Recreation Leadership/Supervision

**310901** Recreation Practicum/Field Experience

**319999** Recreation/Parks: Other

## BASIC SKILLS (32)

In the 1981 *Classification of Instructional Programs* system, this category mixed both personal service and tutorial/remedial courses in language skills and math. When adapted for a *course-level* taxonomy in the 1990 *CCM*, the remedial courses were removed and placed in their respective areas (see the 2320 series for remedial language skills and the 2701 series for pre-collegiate mathematics). The residual categories cover credit-bearing (usually less than three credits) supportive service and counseling activities.

The empirical data driving the 1995 presentation were compelling in forcing the addition of two codes in this general area: one dealing with generic workplace habits, the other with library skills. Neither one of these is necessarily "remedial." Only 320101 and 320102 carry non-additive credit.

The 2003 taxonomy adds basic computer and Internet skills to the section.

### CCM Code

- 320101** Student Development, Individual in Transition, Survival Skills, Support Skills, Out of Class Skills, Developmental Skills, Adult Basic Skills, Adult Basic Education, Development of Competence
- 320102** Academic/Intellectual/Study Skills, Reading & Study Skills, Learning Strategies, Notetaking, Test-Taking, Memory Techniques, Techniques of Learning
- When these topics were taken up in the context of college orientations, they were coded 903000
- 320104** Workplace Skills, Job Skills, Workplace Demeanor, Work Habits
- 320105** Job Seeking/Changing Skills, Job Preparation, Job Interview Technique, Career Decision, Career Counseling/Planning
- 320107** Career Exploration/Orientation, Career Information, Careers in "X (Health, Business, etc.)," Occupational Information
- 320108** Personal Typing, Beginners' Typing, College Typing
- If student major was in Office Occupations, the typing titles were coded under 070702 or 070803 (keyboarding).
- 320109** Library Skills, Library Orientation, Library Research Methods, Library Competency

CCM Code

**320110 NEW** Introduction to Microcomputers

The on-line catalogue descriptions of these 1-credit courses covered the true basics of what a computer is. They are I/O courses.

**320111 NEW** Introduction to the Internet, Basic Internet Use

These are 1-credit hands-on skills courses.

**STUDENT ACTIVITIES and SERVICE (33)**

This section of the *CCM*, originally called "Citizenship/Civic Activities" and designed to record high school curricula, was not used in the coding of the NLS-72 postsecondary transcript sample. The section was revived for the High School & Beyond/Sophomore cohort because college transcripts from the period, 1982-1993, were carrying entries for student activities and services that could not be coded anywhere else. While a plurality of these entries do not carry credits, and most do not award letter grades, the fact that they are included on student records should be reflected in this taxonomy.

CCM Code

**330101** Student Activities, Student Publications

**330201** Student/Community Service, Tutoring, Responsible Citizenship

**330301** Assemblies, Convocations, Recital Attendance

These are secular or generalized. If there is also a reference to "chapel" or "service" in the title, and/or if they were taken in a seminary, they were coded 390701.

**330401 NEW** Peer Counseling, Residence Hall Counseling

**330501 NEW** Responsible Beverage Service



## HEALTH-RELATED EDUCATION, INFORMATION and ACTIVITIES (34)

This section covers self-help, health information, and self-improvement courses, not academic courses. Some categories, for example, Aerobics/Jogging or Life-Saving might have been placed in the 36 series, but they are better justified here as basic, personal physical survival and health activities, rather than sports or physical education.

### CCM Code

**340101** Health & Physical Practices: General, Health and Hygiene, Personal Health, Biofeedback, Health and Safety

The word, "health," in combination with references to school, youth, or children places the course under 131307. Likewise, the title, "Personal and Community Health" was coded as 170402. "Wellness" and "Health Assessment" are both coded under Allied Health (178001) to account for a service function of future health workers.

**340102** Sex & Birth-Related Health Practices, Basic Biology of Sex, Human Sexuality

These are health-information related courses, not the psychological study of human sexuality (421003) or the sociology/anthropology of sexuality (451116).

**340103** Mental Hygiene

**340104** Aerobics, Jogging, Body-Building, Conditioning, Cross-Training

**340105** First Aid, First Aid & Safety/Self-Help, General Safety, Shop Safety, Accident Prevention, Occupational Safety

This category was overhauled for the 1995 *CCM* in light of recommendations from faculty review groups in both allied health/health sciences and engineering/engineering technologies. If the title referred to "emergency care" and carried more than one credit, it was classified under 170206. If the title referred to "CPR" and carried more than one credit, it was assigned to 170202. "Life-Saving" titles were moved to a new category, 340108; and occupational safety titles were moved here as a result of the reconstruction of 150701 (Industrial Safety/Safety Technologies).

CCM Code

**340106** Drug/Alcohol Abuse Prevention, Drug Awareness, Habit Forming Substances, Drug Education, Drug Use in America

These student service information courses are distinguished from the academic study of drugs in society (451118), and from 170401, a course under which future human service workers are trained as counselors on drug and alcohol abuse matters.

**340108** Life-Saving, Advanced Life-Saving/Red Cross, Water Safety Instruction

**340109 NEW** Women's Health, Women & Health

**INTERPERSONAL SKILLS (35)**

These are personal service and development courses, not academic social science courses. External faculty reviewers in psychology, in particular, insisted that all "Applied Psychology"-type titles be placed here and not in the 42 series. And the faculty review team covering occupational fields for the 2003 taxonomy recommended placing discrete key workplace interpersonal skills titles here as well.

CCM Code

**350101** Interpersonal Skills/Relations, Applied Psychology, Personal and Social Adjustment, Human Relations, Practical Psychology

Interpersonal/Small Group Communication courses were placed in 091001, not here.

**350102** Relations: Love, Sexual Awareness/Relationships, Intimate Relationships

The lines between this course and the health-information courses on sex (340102) are thin, but the on-line catalogue descriptions make it clear that these student-service courses assume basic biological knowledge and seek to help students how to approach dating, love, and sex as lifespan events.

**350103 NEW** Communication skills: Job, Workplace, Applied Communications Skills

On-line catalogue searches made it clear that these courses were not for remediation of communications skills, rather for training, practice, and enhancement of those skills in workplace settings.

CCM Code

**350104** Assertiveness, Leadership, Assertiveness Training, Effective Leadership, Leadership Development/Applications

**350105 NEW** Teamwork, Team Building/Dynamics

**350106 NEW** Personnel Psychology, Supervisory Psychology, Principles of Supervision, Supervisory Methods/Skills

See comments under 060601 and 070401. These courses are skills training.

**LEISURE AND RECREATIONAL ACTIVITIES (36)**

To distinguish a physical education activity course (36) from a physical education course to prepare a student for teacher certification (131314) from a physical education/recreation course to prepare a student for non-school-based work in the leisure service industry (1710 series) involved reference to student major, number of credits in the course, and (less often) institutional type. For the 2003 taxonomy, the few leisure and recreational crafts and games titles were moved to 369999, and no longer have separate codes.

CCM Code

**360108** Physical Education Activities, Intramural Sports, Individual Sports, Team Sports, (Any sport named individually or in combination, and without the words, "varsity," "intercollegiate," or "team practice")

The most challenging area for coding involved dance titles: ballet, square, modern, jazz, and ballroom. As a rule of thumb, square dancing, folk dancing, and ballroom were coded here. Ballet, modern, and jazz dancing were coded under 500301. Aerobic dancing was kept under 340104.

**360110** Self-Defense, Karate, Judo, and so forth

**360111** Equestrian Activities, Riding, Equitation, Dressage, Rodeo

**360112** Yoga, Hatha Yoga, Meditation

**360113** Scuba/Skin Diving

**360115** Riflery, Pistol, etc. (Non-Military)

**360116 NEW** Hiking, Back-Packing, Wilderness Activities

CCM Code

**360201** Varsity Athletics: Major Sports, i.e. Football, Basketball; Team Practice/ Football or Basketball; Intercollegiate Sports: Football/Basketball

**360202** Varsity Athletics: Other Sports; Team Practice.. Intercollegiate. . .and so forth.  
Golf, Tennis, Baseball, Track, Skiing, Wrestling, Volleyball, and other "minor" sports.

**369999** Recreational/Leisure Activities: Other

**PERSONAL AWARENESS and DEVELOPMENT (37)**

**370101** Personal/Self-Awareness, Human Potential, Personal Growth, Self-Appraisal, Self-Development/Image, Personal Development, Self-Esteem

**370102** Coping Skills, Daily Living, Stress, Stress Management

**370103** Personal Decision-Making, Personal Goals and Objectives, Life Planning

**370104** Personal Appearance, Charm, Poise, Manners, Social Skills

In programs involving training for models, flight attendants, cosmetology students, and secretaries, these courses are more than personal service and development — they are required. Sometimes they are not "courses" at all, rather "competencies" entered on transcripts.

**370105** Personal Values/Attitudes/Life-Styles

**370201 NEW** Professional Development: Field Unspecified

**PHILOSOPHY (3801)**

Not all course titles with the word "philosophy" belong in the 38 series. "The Philosophy of Sport," for example, was placed under 304001, an interdisciplinary code for "Sports and Leisure Studies." "Political Philosophy/Philosophy of Politics" was classified under political science, along with political theory and ideology titles (451004).

CCM Code

**380101** Intro to Philosophy, Basic Philosophical Problems, Philosophical Inquiry, Principles of, Philosophy of Human Nature, Philosophy of Life

CCM Code

**380102** Ethics, Moral Philosophy, Applied Ethics, Ethics in Business (or Law, Medicine, etc.), Moral Issues/Problems/Values, Values and Choices, Moral Problems

Note that professional ethics courses are treated under philosophy and not under the professional fields. But "Bioethics" and "Environmental Ethics" are accounted for under 302002 and 303004 respectively.

**380103** Logic, Formal Reasoning, Deductive Logic, Logic and Methodology

Some analogous titles may be found under math or computer science.

**380104** Aesthetics, Philosophy of Art, Ideas of Beauty

**380105** Metaphysics, Epistemology, Philosophy of Knowledge, Being and Knowing, Knowledge & Reality, Philosophy of Mind

**380106** Philosophy of Language, Ordinary Language Philosophy

**380110** History of Philosophy: General

**380111** Ancient & Medieval Phil, Pre-Socratic Philosophy, Greek Philosophy

**380112** Philosophy: Renaissance through 19th C., Rationalism, Empiricism, Transcendental Philosophy

**380113** Contemporary Philosophy: Analytic Philosophy, Existentialism, Phenomenology

**380114** Non-Western Philosophy

**380120** Philosophy of Education

This is not the "Philosophical Foundations of Ed" title that is covered under 130901. The category is best illustrated by a title such as "Plato's Philosophy of Education."

**380121** Philosophy of Science, Scientific Inquiry, Scientific Method, Philosophy of Technology

CCM Code

**380122** Philosophy of Religion

This category was distinguished from Religious Studies (3802, and Theology (390601). If the title referred to the philosophy of a particular religion, it would be coded in religious studies.

**380123** Philosophy of Law, Justice

**380199** Philosophy: Indeterminable, Other

What tends to wind up in this bin are titles such as "Human Freedom," and "Philosophy of Love."

**RELIGIOUS STUDIES (3802)**

For the 1990 *CCM*, the field was retitled (originally "Religion"), and disaggregated a single code in order to sort more accurately titles that might otherwise have been classified as "Theology." (39 series) The identity of the institution and (sometimes) the student's major were the principal guides to assigning titles. For example, a "Christian Doctrine" course taught in a state university was coded as Religious Studies; a course with the same title in a bible college was classified under Theology.

CCM Code

**380201** Religion: General, Comparative Topics

**380202** Non-Western Religions, Bhuddism, Hinduism, Hindu Texts, Confucius, Taoism, Islam, the Koran

**380203** Mormon Texts and History, Book of Mormon, L.D.S. Doctrine

**380204** Christianity: All Topics

**380205** Judaism: All Topics

**380206** Religious Ethics/Morality

**380207 NEW** Religion and Society

**389999** Philosophy & Religion: Other

## THEOLOGY (39)

Most courses classified as Theology are given in either theological seminaries or denominational colleges. The one exception is "Bible Studies." In order to be classified as 230202 (Bible as Literature/History, etc.) the title had to be explicit. Generalized Bible Studies titles were placed here (390201). For the 2003 taxonomy, a new code covering Church organization & administration and the duties of ministers/priests/rabbis (390801) was created so as to distinguish these aspects of preparation of clergy from those under theological studies/liturgy/doctrine.

### CCM Code

- 390101** Biblical Languages: Seminary, New Testament Greek, Ancient Hebrew, Aramaic
- 390201** Bible Studies, Sacred Scriptures, Synoptic Gospels, Pentateuch, Epistles
- 390301** Missionary Studies, Evangelism
- 390401** Religious Education
- 390501** Religious Music
- Music history courses on such topics as the Mass, Missa Brevis, Requiem, and Sacred Chorales were classified 500906. Music literature courses referring to sacred forms were labeled 500905.
- 390601** Theological Studies, Apologetics, Eschatology, Homiletics, Liturgy, Sacrament, Talmud, Sermons, Jewish Law
- All religions are included in this category.*
- 390701** Christian Living/Activities, Christian Family, Christian Personal Testimony, Christian Marriage, Chapel, Christian Service
- 390801 NEW** Church Organization/Administration, Finance, Ministry Preparation
- 399999** Theology: Other

## PHYSICAL SCIENCES (40)

The course categories and coding in the physical sciences were fairly straightforward. For the 1990 version of the *CCM*, the only major debate and reconstruction took place in physics, where there was a conscious attempt to distinguish upper-division treatments of major topics, for example, mechanics or electricity and magnetism, from their treatments in introductory physics courses, as well as to consolidate the various atomic/nuclear physics titles.

For the 1995 and 1999 editions of the *CCM*, physics was again the focus of adjustment, partly as a result of reconfigurations in the Engineering section of the taxonomy and partly to distinguish different kinds of introductory courses in the field.

For the 2003 taxonomy, chemistry and geology were the principal concerns of the faculty review panel, with decision rules tightened on sorting the various types of lower-division chemistry introductions, and taking account of environmental themes in the current presentation of the physical sciences in higher education.

### CCM Code

- 400101** Physical Sciences: General, Introduction, Concepts in Physical Science
- 400201** Astronomy, Celestial Mechanics, Cosmology  
"Celestial Navigation," however, is usually Naval Science (280401).
- 400301** Astrophysics, Space Science, Solar Physics
- 400401** Atmospheric Sciences, Meteorology, Climatology, Weather and Climate

## CHEMISTRY (4005)

### CCM Code

- 400501** General Chemistry, College Chemistry, Introduction to Chemistry  
Titles including Intro Chemistry "and" Qualitative or Quantitative Analysis were classified here, not in 400502. Without a lab, courses with these titles were coded 400520.
- 400502** Analytical Chemistry, Instrumental Analysis, Chemical Measurements, Quantitative Analysis, Chemical Calculations
- 400503** Inorganic Chemistry



CCM Code

**400504** Organic Chemistry

**400505** Pharmaceutical Chemistry

**400506** Physical Chemistry, Structural Chemistry, Structure and Bonding

**400507 NEW** Environmental Chemistry

**400509** Other Determinable Topics in Chemistry

These included Chemical Literature, Macroscopic Chemistry, Radio-chemistry, and Agricultural Chemistry. "Food Chemistry," though, was coded 020301.

**400510** Research, Independent Study in Chemistry

In many other fields of the CCM, the "research" and "independent study" titles are lumped with the "Other" (99) code categories. The faculty rating team here (like those in psychology, biology, business, and communications) urged a separate category.

**400520** Applied Chemistry, Liberal Arts Chemistry

This category, like 260802 and 262001 in Biological Sciences, was created to split off versions of the introductory course in the field that were not designed to facilitate further study in chemistry.

**400530 DEL** Chemistry for Nurses/Allied Health/Life Sciences (service course)

At the recommendation of the external faculty review panels in both physical and life sciences, all titles previously coded here were moved to 260804.

**400540 NEW** Preparatory Chemistry, Consumer Chemistry

These were regarded as remedial courses by the faculty review panel.

**400599** Chemistry: Indeterminable

## **GEOLOGY AND EARTH SCIENCES (4006 and 4007)**

The period covered by the first edition of the *CCM* (1972-1984) saw increased differentiation in geology as a result of the boom in energy exploration and development. This differentiation reversed course in the period on which the second edition was based (1982-1993). The 1990s saw a return of interest in the field, and this is reflected in an increase in the number of course categories in the 2003 taxonomy.

### CCM Code

**400601** Geology: Introductory, General, Geological Science

We included titles in stratigraphy and sedimentation here unless they were explicitly linked to paleontology (400604), as well as general titles in geomorphology (unless explicitly linked to mineralogy or petrology).

**400602** Geochemistry

**400603** Geophysics and Seismology

**400604** Paleontology, Historical Geology

**400605** Mineralogy and Petrology

These two topics were sometimes yoked in the course title and sometimes not. It was decided that a single category for both was appropriate.

**400606 NEW** Environmental Geology

**400607 NEW** Hydrogeology, Marine Geology

**400610 NEW** Field Studies in Geology

**400620 NEW** Geology of U.S. states/regions

**400699** Geological Sciences: Other

**400701** Metallurgy

**400702** Oceanography

**400703** Earth Science, Earth History, Earth Materials, Earth Physics, Earth Processes, Earth Science-Evolution

## PHYSICS (4008)

### 400801 Physics: General, Introduction

Course titles for General Physics often consist of sets of topics, for example, "Waves, Optics, Heat, Electricity," or single topics, for example, "Physics II: Electricity and Magnetism." These titles were assigned to 400801. One of the most difficult tasks for a faculty rating team was to sort out intermediate and advanced courses in the same areas from those presented in the introductory course. The decision rules in those cases are discussed below (see 400810, 400811, 400813).

### 400802 Atomic/Molecular Physics, Nuclear Physics, Particle Physics, Radiation Physics, Reactor Physics

### 400807 Optics

"Holography" would be placed here unless the student's major was in fine arts or film arts.

### 400809 Acoustics, Physics of Music

This is often a service course for music and music education majors.

### 400810 Thermal Science, Thermodynamics, Advanced Thermo, Kinetic Theory

Titles here are clear cases of intermediate/upper division courses in *physics*, not engineering. If "thermodynamics" was listed with other topics, for example, "Mechanics and Thermodynamics," the course was coded 400801 unless the student was an engineering major or the transcript indicated a prior general physics course.

### 400811 Electricity and Magnetism: Intermediate Course, Electrodynamics, Electrophysics, Laser Physics

To be classified here (as opposed to 400801), (1) the title had to stand alone, (2) if a course number was indicated, to be 200 or higher, and (3) the transcript had to show a prior general physics course sequence.

### 400812 Modern Physics

CCM Code

**400813** Mechanics, Classical Mechanics, Analytical Mechanics

The decision rules adopted here are like those for both 400810 and 400811. In addition, institutional type was found to be a reliable guide for courses titled, simply, "Mechanics": if a trade school or AVTI, the course was usually placed in the "Mechanics and Repair" series (47).

**400814** Quantum Physics/Theory/Mechanics

**400820** Liberal Arts Physics, Physics for Poets, Physics for Non-Science Majors

**400830** Physics with Calculus, Math Methods in Physics

This new category was created principally to capture introductory courses that explicitly emphasized their mathematical base. In combination with 270601, 270602, 270603, and 270650, it helps determine the net exposure to calculus in postsecondary education.

**400899** Physics: Other

**400901** Planetary Science, Solar System

**409999** Physical Sciences: Other, Indeterminable

**SCIENCE TECHNOLOGIES (41)**

The initial problem in the Science Technologies ("41" series) categories of the *CCM* was that in the NLS-72 data base, covering the 1972-1984 period, there were few cases of course taking in these fields, and most of what had been assigned to the 41 Series should have been assigned elsewhere. The result was a very abbreviated section. For the 1995 *CCM*, all science technology courses (biological, nuclear, chemical and metallurgical) were collapsed into a single code, and this position has been maintained by the evidence of the NELS:88/2000 cohort's curricular experience in the 1992-2000 period.

CCM Code

**410101** Science Technologies: All; Biological Technologies, Nuclear Materials Handling Technology, Chemical Technology, Sanitary Chemistry, Metallurgical Technology, Plastics Technology, Process Metals Lab, Biomaterials

## PSYCHOLOGY (42)

The principal task with ostensible titles dealing with human behavior and development was to establish rules that clearly distinguished psychology courses from courses in education, family & community studies, communications, and, for want of a better term, "personal development and awareness," that is, personal service applied psychology.

The review panels in the social sciences cited a title such as "Interviewing Techniques" to illustrate this problem. One could code courses with that title under communications (09 series), clinical psychology, counseling psychology, or social work (4407). Student major was the principal guide to accurate assignment.

Words such as "behavior," "motivation," "emotion," placed a course under Psychology of Personality (421001) unless modified in ways that classified the "behavior" as explicitly abnormal. Users of this taxonomy should also consult the rules for Educational Psychology titles (130801) and the Applied Psychology and Personal Service series (35 and 37).

The 2003 taxonomy is characterized by disaggregations (in cognitive and developmental psychology) and the addition of categories that reflect the reach of psychology into areas of sports, crime, and multi-culturalism.

### CCM Code

- 420101** Psychology: General, Introduction to, Principles, Behavioral Science
- 420201** Clinical Psychology, Behavior Control/Modification, Clinical Therapy, Family Therapy, Group Therapy, Behavioral Intervention, Psychotherapy, Hypnosis
- 420301** Cognitive Psychology, Memory, Consciousness
- 420302 NEW** Perception, Sensation
- 420303 NEW** Psychology/Theories of Learning, Learning & Motivation/Memory/Cognition, Conditioning and Learning
- 420601** Counseling Psychology, Community Psychology

"Counseling" in combination with "Guidance" was coded 131101.

CCM Code

**420701** Developmental Psych, Psychology of Aging, Human Development, Principles of Development, Adult Development, Lifespan Psych

"Child Development" titles were sometimes classified under 200101, depending on the student's major and the type of institution in which the course was offered. "Human Growth and Development" titles were usually classified under the biology service courses, 260805 unless the title specified psychology or behavioral science.

**420702 NEW** Childhood and Adolescence, Child Psychology, Adolescent Psychology/Behavior, Cognitive Development of the Child

These areas were previously coded under 420701.

**420801** Experimental Psychology, Research Methods, Research Design

**420901** Industrial Psychology, Organizational Psychology

"Managerial Psychology" and "Organizational Processes" titles were placed under 061501 in the business administration series.

**421001** Personality Psychology

Includes Motivation, Emotion, Aggression, Dreams, Human Behavior, Psychology of Adjustment, Personality Development/Dynamics/Theory

**421002** Abnormal Psychology, Psychology of Deviance, Disorganized Personality, Behavioral Pathology, Mental Retardation

**421003** Human Sexuality, Human Sexual Behavior

As distinguished from "sexual relations" under 350102.

**421004 NEW** Psychology of Exceptionality, Psych of the Exceptional Child

**421101** Physiological Psychology, Biopsychology, Psychobiology, Biological Bases of Behavior, Sensation, Biofeedback, Brain and Behavior, Neuropsychology

**421201** Psycholinguistics, Psychology and Language, Language Development/Acquisition

**421301** Psychometrics, Psychological Testing

CCM Code

**421401** Psychopharmacology, Drugs and Behavior

**421501** Quantitative Psychology, Psychological Statistics

If courses in ANOVA, Applied Multiple Regression, etc. are taught in psychology departments, they are classified here and not under the new code for advanced statistics (270502). This is one of the cases in which department of instruction is important to the taxonomy.

**421601** Social Psychology, Environmental Psychology, Mass Behavior, Group Interaction, Group Dynamics

"Collective Behavior," however, is usually a sociology course, and has its own code, 451106. "Applied Psychology," and Interpersonal/Human/Social Relations courses were coded 350101.

**421701 NEW** Psychology of Sports/Health

**421801 NEW** Psychology of Crime, Forensic Psychology

**421901 NEW** Psychology of Race, Multi/Cross-Cultural Psychology

**422001** History of Psychology, Philosophy of Psychology

**429010** Psychology Field Work, Internships

**429020** Psychology Seminars, Readings, Colloquia

**428001 NEW** Undergraduate Research in Psychology

**429001 NEW** Graduate Research/Theses in Psychology

**429999** Psychology: Other, Indeterminable

**PROTECTIVE SERVICES (43)**

The 1970s saw significant amounts of financial support for students to attend college under the Law Enforcement Assistance Act (LEAA). Basically, LEAA provided for the collegiate education of police officers. The number of programs in Criminal Justice mushroomed, and the range of courses offered expanded dramatically. Many of these were "Police Academy" versions of topics also offered — with different orientations — elsewhere in the curriculum.

"Community Relations" is a typical case, as it also appears under Human Services (440201). For

the 1995 and 1999 versions of the *CCM*, little changed except that, like other social science fields, criminal justice "went quantitative" during the 1980s (see 430105), and fire protection paid increased attention to hazardous materials. These trends in the delivered curriculum continued through the 1990s.

### CCM Code

**430101** Correctional Administration, Corrections Systems, Corrections Theory, Corrections Law

**430102** Corrections: Penology, Probation/Parole, Corrections Practices, Corrections Casework/Counseling, Community-Based Corrections

Titles here focus on the *operational* aspects of corrections.

**430103** Administration of Justice, Courts, Court Administration

Titles here refer to the operations of the judicial system in general, not the criminal justice system in particular (see 430104). They are not courses in the Judiciary (451003), and are not taught in law schools.

**430104** Criminal Justice Studies, Criminal Justice, Law Enforcement and Criminal Justice, Intro to Criminal Justice

**430105** Criminalistics, Evidence, Criminal Investigation, Testimony, Criminal Identification, Search & Seizure, Computer Applications in Criminal Justice, Quantitative Methods in Criminal Justice

**430106** Forensic Studies, Forensic Chemistry/Biology, Forensic Medicine/Science, Crime Lab

Catalogue readings show that many of these courses are taught by medical school or science faculty, but are offered principally in criminal justice programs.

**430107** Law Enforcement: General Police Training, Police Academy, Crime Prevention and Control, Patrol Procedures and Operations, Firearms, Defensive Tactics, Law Enforcement Techniques, Intro to Law Enforcement, Baton Training, Police Report Writing

These are the basic Police Academy curriculum titles with the exception of those dealing with administration (see 430108).



CCM Code

- 430108** Law Enforcement Administration, Police Administration, Leadership
- 430109** Security Services, Private Investigation, Loss Prevention
- 430110** Internships, Field Experience in Criminal Justice
- 430120** Criminal Law & Procedure for Police, Law of Evidence, Legal Aspects of Criminal Justice, Criminal Codes (usually the state is named, for example, "Florida Sentencing Code")

Both student major and institutional type are keys to coding these titles. If taught in a law school at the post-baccalaureate level, a course such as "Criminal Procedure" does not belong here, rather in 220201.

- 430130** Police/Community Relations
- 430140** Traffic Law/Control/Management, Vehicle Codes, Traffic Operations, Traffic Accidents/Investigations
- 430150** Juvenile Justice/Crime/Procedures, Youthful Offender, Youth Crime

For generalized Juvenile Delinquency courses, see 450402.

- 430160** Narcotics, Drug Enforcement
- 430170 NEW** Crime and Race
- 430180 NEW** Research Methods, Research in Criminal Justice
- 430199** Criminal Justice: Other
- 430201** Fire Control Technology, Fire Protection Systems, Fire Prevention, Fire Science, Fire Safety Research
- 430202** Fire Protection Administration, Fire Department Management
- 430203** Firefighting, Fire Apparatus/Equipment, Fire Hydraulics, Fire Tactics and Strategy
- 430401 NEW** HAZMAT

## **PUBLIC AFFAIRS (44)**

This section of the postsecondary taxonomy covers public administration, social work, and other human services. In the former, many titles containing the word, "management," might be coded under Business Administration (06). A reference to the management of nonprofit, public-sector institutions and organizations placed the title in this series.

The social work titles required some minor disaggregation so as to reflect more accurately the type of courses taken by students in the social work and welfare field. For the 1995 *CCM*, a new code covering general introductions to the human service/helping professions fields was moved here (from Allied Health) at the recommendation of the faculty review team.

For the 2003 taxonomy, youth services were highlighted within general human services, and a general category for crisis/intervention counseling was established after on-line catalogue review demonstrated that these courses cut across—and were used as service courses by—fields ranging from Allied Health (therapies), Criminal Justice, Applied Psychology, Social Work, and Family & Community Services.

### CCM Code

**440101** Human Services: General; Intro to the Helping Professions, Human Service Methods/Organizations

**440102 NEW** Youth Services

**440201** Community Services/Organization/Resources

**440301** International Organizations, International Service, United Nations, International and Foreign Policy Seminars

**440401** Public Administration/Management, Government Regulations, State Budgetary Process, Public Personnel Administration

"Public Finance," however, was coded as an Economics course, 450651.

**440420 NEW** Internships in Public Affairs

**440501** Public Policy Studies, Public Policy Analysis, Policy Science, Policy Formation/Process, Social Policy

**440601** Public Works (Sanitation, Utilities, etc.), Waste Management, Port Administration

CCM Code

**440701** Social Work: General

Covers titles such as "Child Welfare and Intervention Strategies," for example, but not titles referring to schools.

**440702 SUS** Medical Social Work [Titles moved to 440799]

**440703** Social Welfare, Social Service Administration

**440710** Social Work Practicums, Field Work

**440720** Research in Social Work/Welfare

**440799** Social Work: Other

**440801 NEW** Crisis Interventions/Counseling

These courses are offered in a wide variety of human service fields. Those with a specifically psychological context can also be found in 420601.

**450101** Social Sciences: General, Survey, Social Processes, Social Environment, Current Affairs, World Issues, Global Developments

A catch-basin category similar to that for Fine and Performing Arts (500101).

**ANTHROPOLOGY (4501)**

**450201** Anthropology: General, Introduction, Human Origins and Evolution, Ascent of Man, Ancient Cultures, Peoples of the World

**450202** Cultural Anthropology, Ethnology, Folklore, Comparative Cultures, Culture and Personality, Anthropology of Religion, Magic, Ritual, Cultural Change, Cultures and Traditions, Theological Anthropology, Folk Religion, Witchcraft

But not "Cultural Diversity" titles, which are coded 307001

**450203** Physical/Biological/Medical Anthropology, Human Osteology, Biology of Race

CCM Code

**450204** Non-Western Peoples & Cultures, Third-World Cultures

These are distinguished from general Area Studies treatments (050120) by coverage that focuses on cultural and biological evolution.

**450205** Native American (North, South, Meso) Peoples/Cultures

Courses in [North] Native American cultures are distinguished from those under Native American Studies (050202) by coverage that focuses on evolutionary issues of culture, language, and physical characteristics.

**450206** Language, Linguistics & Culture

**450207 NEW** Ethnography

**450208 NEW** Primate Behavior

As offered in anthropology departments, and distinct from animal behavior courses offered in the life sciences (260707)

**450210** Anthropology: Readings, Research, Fieldwork

**450299** Anthropology: Other, Indeterminable

**450301** Archaeology, Traces of Pre-History, Biblical Archaeology

**450401** Criminology, Crime & Delinquency, Criminal Behavior, Crime in America, Terrorism, Victimology, Organized Crime

These are not Administration of Justice (43 series) titles. Student major and pattern of other course work is usually the key to assignment.

**450402 NEW** Juvenile Delinquency

These are not Juvenile Justice courses as offered in the 43 series, rather a sub-set of the multi-disciplinary social science consideration of crime and delinquency.

**450501** Demography, Population Dynamics/Analysis/Growth, Population and Settlement

## ECONOMICS (4506)

Not all course titles including the word "economics" belong in economics. Titles in Business/Managerial Economics, for the most obvious example, have their own code (060501) under Business; those in Engineering Economics have their own code (141702) related to Industrial Engineering. In organizing the taxonomy for the 1990 CCM, the faculty review group used four broad categories: Core Economics courses (450610-450642), Advanced Economic Analysis courses (45065 series), Historical/Theory courses (45066 series), and other courses. Within these broad categories, the economic literature journals helped organize and sort the course titles. For the 2003 taxonomy, all items initially categorized as indeterminable or "other" were referred to on-line catalogue searches.

### CCM Code

**450601** Economy & Society, Economic Problems/Issues, Contemporary Economics, the Economic System, Economic Life, Intro to the American Economy

Courses with these titles were treated as "pre-disciplinary," that is, as something less than the traditional introduction to the methods, terms, and major concepts of the field. "Consumer Economics" is usually coded 190402, not here. For the 2003 taxonomy, catalogue searches were used to sort generalized titles between 450601 and 450610 (the course descriptions for the latter spelled out a Micro/Macro economics sequence).

**450610** Economics: Principles, Introduction, Principles & Problems, Basic Economic Theory/Analysis, Fundamentals, Macroeconomics, Microeconomics

Many introductory-level economics courses are divided into two terms, "Micro" and "Macro." These were not to be confused with intermediate level theory courses in micro and macroeconomics that are usually required of all economics majors. The decision rule was that unless the words "intermediate" or "theory" or "analysis" appeared in a title referring to "Micro" or "Macro," or the institutional course numbering system placed the entry at upper-division level, the course was classified here.

**450620** Intermediate Microeconomics, Microeconomic Theory, Microeconomic Analysis, Price Theory, Theory of Demand/Cost, Theory of the Firm, Economic Analysis of the Firm, Production Economics/Prices

**450630** Intermediate Macroeconomics, Aggregate Economic Analysis, Income and Employment, Growth Theory, Macroeconomic Theory/Analysis, Income Analysis/ Policy, Income and Business Cycles, Business Fluctuations, National Income, National Economy

**450641** Economic Statistics, Economic and Business Statistics, Introduction to Quantitative Economics, Mathematical Economics

CCM Code

- 450642** Econometrics, Forecasting, Forecasting & Business Cycles
- 450651** Public Finance, Economics of Government, Economics of the Public Sector, Budgetary Process/Controls, State and Local Government Finance
- See comments under 440401.
- 450652** International Trade/Finance/Economics, International Monetary Economics, Foreign Exchange, Economics of . . . (Specific Countries), Global Capital Markets
- 450653** Monetary Theory, Fiscal Policy, Stabilization Policy
- 450654** Environmental & Natural Resource Economics, Economics of Environment, Rural/Regional/Urban Economics, Economy of Cities
- 450655** Labor and Human Resource Economics, Manpower Economics, Manpower Development, Trade Unions and Labor Market, Welfare and Social Security, Wage Theory and Determination, Human Capital
- 450656 NEW** Industrial Organization
- 450657** Money & Banking, Money & Capital Markets
- 450661** History of Economic Thought/Doctrines
- 450662** Comparative Economic Systems
- 450663** Economic Development, Third World Economics, Economic Growth in Less Developed Countries, Problems of Underdevelopment, Agrarian Transformation
- 450679** Economics: Other Determinable Topics
- "Consumer Economics" was coded 190402, not here. And both  
"Managerial Economics" and "Business Economics" were coded 060501.
- 450699** Economics: Indeterminable

## **GEOGRAPHY (4507)**

Between the generation of the NLS-72 and that of High School & Beyond, the college curriculum in geography began to shift away from a paradigm of "area studies" presentations toward one focused on problems and methods (including quantitative methods). In many respects, these developments parallel those of international studies. This trend solidified during the period during which the NELS cohort attended college, 1992-2000.

### CCM Code

- 450701**      Geography: General; Introduction; World/Regional Geography
- 450702**      Remote Sensing, Analytic Cartography, Field Mapping, Spatial Analysis, Image Analysis
- 450703**      Cultural Geography, Human/Social Geography
- 450704**      Physical Geography, Envir. Geography, Geomorphology, Climate/Climatology, Land Forms
- 450705**      Economic Geography, Geography of World Economies
- 450706**      Urban Geography, Geography of Particular Cities
- 450710**      Geography of North America/Anglo-America
- 450711 NEW**    Geography of U.S. States/Regions
- 450720**      Geography of Europe, USSR
- 450730**      Geography of Africa, Near East, Asia, Pacific, Latin America, Caribbean
- 450740 SUS**    Geography of Asia, Pacific [Titles combined with 450730]
- 450750 SUS**    Geography of Latin America, Caribbean [Titles combined with 450730]
- 450760**      Political Geography, Geography of International Affairs, Geography of World Issues
- 450770**      Quantitative Geography, Geographical Data Analysis, GIS Applications
- 450799**      Geography: Other

## HISTORY (4508)

For the construction of the 1990 *CCM*, History presented a major challenge. Four sub-series were proposed and confirmed by the faculty review group: general titles and topics that cut across nations, continents, and periods; a set of U.S. history titles; a set of European history titles; and a set of non-Western history topics. The U.S. and European history series rely on dates dividing periods, and rules had to be established for sorting courses on one side or another of the dateline. The criterion selected was "majority of years." Thus, a course in 18th Century European History crosses the dateline of 1789, but was classified as 450822. A trickier title would be "The Ante-Bellum South, Civil War, and After," which was coded under "Topics in U.S. History to 1860" (450811) because "Anti-Bellum South" could cover as much as a century.

In the European series, if a specific country is identified in the title, that fact takes precedence over the period indicated. Hence, "English History, 1485-1714," was classified under "History of Individual Countries" (450826), not "European History: Renaissance to 1789."

For the 1995 version of the *CCM*, two new codes were added in women's history and military history, reflecting the growth of both fields. For the 2003 taxonomy, the catch-all survey category of 450801 was split into explicitly Western History/Civilization (450801) and World History/Civilizations (450803), and a number of highly specific topic codes were added, driven by the volume of course-taking.

### CCM Code

- 450801** Western Civilization
- 450802** Ancient History, Classical History, Pre-History, Ancient Greece/Rome/Middle East
- 450803 NEW** World Civilization/History, Modern World
- 450804** Economic/Business History
- All titles, regardless of country or region reference.
- 450805** History of Religion/Church History
- 450806 NEW** Intellectual/Cultural History: General, non-U.S.
- Formerly 450803.
- 450808** Historiography, Research Methods



CCM Code

**450809** History of Science, History of Technology

This category also included courses in the history of particular sciences and/or technologies.

**450810** U.S. History Surveys

The titles here are recognizable either as broad coverages ("The Evolution of the U.S.") or as segments ("U.S. from 1620 to 1860") of a survey.

**450811** Topics in U.S. History Through the Civil War, Colonial Society, Revolution and Constitution, National Period, the Age of Jackson

**450812** Topics in U.S. History Since the Civil War, the Gilded Age, the Depression, Vietnam War, U.S. in World War II, Civil Rights Era

But note new special topics codes in Vietnam (450860) and World War II (450850) that are not confined to U.S. history frameworks.

**450815** U.S. Cultural, Intellectual History, American Renaissance

**450816** History of Individual States, Regions (e.g. the South, Frontier)

**450817** Afro-American History

**450819** U.S. History: Other

What tends to fall in this category are titles in Diplomatic, Political and Social History that do not refer to a time period. "Crises in U.S. Diplomacy, 1898-1939" would go in 450812, but without the dates, it would be placed here.

**450821** European History: Dark & Middle Ages, Early Europe

**450822** European History: Renaissance to 1789

**450823** European History since 1789, Contemporary Europe, Europe Between the Wars

**450826** History of Individual (European) Countries

CCM Code

- 450829** European History: Other, General; Modern Europe
- European History survey titles analogous to 450810 (for U.S. History) were placed here and not under Western Civ (450801).
- 450831** Asian History, History of Individual (Asian) Countries/Regions
- 450832** African History
- Titles such as "North Africa" or "Sub-Saharan Africa" may be classified under area studies (050101) or geography, depending on department of instruction or student major.
- 450833** Latin American History, History of the Americas, History of Individual (Latin American) Countries
- 450834 NEW** Middle Eastern History
- 450839** History of Other World Regions, e.g. Oceania, Modern Middle East, Non-Western Civilization
- 450850 NEW** World War II
- 450860 NEW** Vietnam
- 450870** Women's History, Women in American History
- 450880** Military History, History of the Military Art, U.S. Military History, History of Warfare
- 450890 NEW** The Holocaust
- 450898 NEW** Independent Study/Research in History
- 450899** History: Other, Indeterminable

## POLITICAL SCIENCE (4510)

The principal reference point for the 1990 construction of political science categories was the set of test specifications for the Graduate Record field examination. The external faculty reviewers recommended finer distinctions in U.S. government and at least one category to cover political behavior. Courses concerning public opinion and propaganda, without a specific political reference, however, were classified under Communications (090902). Changes for the 1995 and current (2003) taxonomies were minor.

International relations codes are listed under this section even though, as a field, international relations is multidisciplinary. The codes from the *Classification of Instructional Programs* are retained for purposes of consistency.

### CCM Code

**450901** International Relations/Conflict/Communications, International/World Politics, Border Politics/Relations

"International Law" taught in law schools was classified under 220501. U.S. Foreign Relations/Diplomacy courses were coded 451012. International Trade courses are 450652 and titles such as "Conflict Resolution" and "War & Peace" were coded 300501.

**450902 NEW** International Political Economy

**451001** Political Science/Government: Introduction, Principles of, Essentials, Basic Issues of, Political Problems, Contemporary Issues/Public Affairs

**451002** U.S. Government & Politics, Federal and State Government

Where "Federal and State" were mentioned together, the title was classified here. If "State" stood alone or in another combination, the title went under 451011. Titles covering the Presidency and Congress were also classified here.

**451003** U.S. Constitutional Law/Politics/History, Civil Rights, Civil Liberties, Judiciary

If taught in law schools, these titles were classified under 220201.

**451004** Political Theory/Philosophy/Ideology/Thought

Courses on specific ideologies, e.g. Marxism, Authoritarian Regimes, Theory of Monarchy, etc. were all coded here.

CCM Code

- 451005** Comparative Government & Politics, Parliamentary Systems
- 451006** European Government & Politics
- The European context and/or countries must be named in the course title to place it here. "Parliamentary Government," for example, would be under comparative government, not European.
- 451007** Non-Western Government & Politics (including titles specifying Latin America, Near East, etc.), 3rd World Politics, Government in Developing Nations
- 451008** Methodology, Research Design, Political Statistics, Political Analysis
- 451009** Political Behavior/Elections/Voters, Political Parties, Pressure/Interest Groups
- 451010 NEW** Political Economy
- 451011** U.S. State, Local Government & Politics, Urban/Rural Politics, County/Municipal Government
- 451012 MOD** U.S. Foreign Policy, Diplomacy
- Courses on national security are now coded 290201.
- 451020** Political Sci/Government Internship, Practicum, Washington Intern
- 451080** Political Science: Other Determinable Topics
- 451099** Political Science: Indeterminable

**SOCIOLOGY (4511)**

Note that Demography (450501), Criminology (450401), and Urban Studies (which has a heavy sociological component) all have codes distinct from the 4511 series. For the 1995 *CCM*, there were some minor adjustments in the taxonomy, one resulting from the differentiation of Women's Studies (300701) and one from the growth of the health care/health administration field. For the 2003 taxonomy, the volume of course-taking in topical areas forced the addition of a half-dozen new codes.

CCM Code

**451101** Sociology: Introduction, General, Principles, Social View of the World, Society and Individual,

**451102** Marriage & Family, Family System, Courtship and Marriage, Family in Society, Marriage and Sex

"Family Relations" and "Family Development" are usually coded 190704, and "Sociology of Sex Roles" is now coded under the new 451116.

**451103** Sociology of Race, Minorities, Ethnic Groups, Race Relations

**451104** Organizational Sociology, Organizational Processes, Complex Organizations, Formal Organizations, Organizations and Society, Bureaucracy

For an "Organizational Processes" title, student major was a strong guide: an 06 major (Business/Management) placed the title under 061501.

**451105** Sociology of Aging, Youth, Life-Cycle

**451106** Social Change, Movements, Collective Behavior, Crowd Behavior, Psychology of Social Movements

**451107** Social Theory, Social Thought

**451108** Comparative Sociology, Third World Sociology

**451109** Social Problems, Deviance, Social Disorganization

**451110** Sociological Research Methods, Survey Design, Data Collection

**451111** Community/Rural/Urban Sociology

**451112** Social Stratification, Inequality, Poverty

**451113** Small Group Sociology, Socialization

**451114** Medical Sociology, Sociology of Medicine/Health, Sociology of Health Care

**451115 NEW** Sociology of Education

**451116 NEW** Sociology/Anthropology of Gender/Sexuality

CCM Code

**451117 NEW** Race-Class-Gender

**451118 NEW** Drugs and Society

**451120** Applied Sociology, Internships

**451140 NEW** Political Sociology

**451150 NEW** Sociology of Work

**451199** Sociology: Other

**451201** Urban Studies, Urbanization, Urban Economy/Economics

Urban Planning/Development, City Form and Function and similar titles, on the other hand, were classified under Urban Design (040701).

**458001** Social Statistics, Statistics for Social Sciences, Quantitative Research in Social Science

Titles here are distinct from those statistics and methodology courses in specific disciplines, for example, Quantitative Psychology (421501), Educational Statistics (130603), and Content Analysis in Politics (451008).

**459999** Social Sciences: Other, Indeterminable

**CONSTRUCTION TRADES (46)**

Most of the courses in this section are taken by students in trade schools, Area Vocational-Technical Institutes (AVTIs), and community colleges. For 1995, a new code was established as a result of the reconfiguration of the taxonomy in construction-related engineering technologies (15 series).

CCM Code

**460101 DEL** Brickmasonry, Stone, Tile

Titles moved to 469999

**460201** Carpentry

CCM Code

**460301** Electric & Power Transmission Installation, Telecommunications Transmission, Coaxial Cables, Cable Construction/Splicing/Grounding

The new titles in this category, reflecting the growth of the cable industry, refer to installation and mechanics, not design and systems operation (see 100109).

**460302** Electrician, Wiring, Electrical Codes

The category includes courses in wiring and electrical codes, but not electrical circuits (usually engineering or engineering technology).

**460401 DEL** Building & Property Maintenance

**460503** Plumbing and Pipefitting: All Titles.

**460901** Construction Practices, Construction OJT, Construction Equipment/ Documents/Tools, Blueprint Reading for Building Trades

This code was developed particularly for programs in trade schools, Area Vocational Technical Institutes, and some community colleges.

**469999** Building Trades: Other

This category covers specialties such as concrete placing/finishing, drywall, floor covering installation, glazing, insulation, painting, plastering, masonry and roofing

**MECHANICS, INSTALLERS, MAINTENANCE, AND REPAIRERS (47)**

Most cases of potential miscoding in this area involve failure to take student major, let alone institutional type, into account. A computer engineering major at a research university, for example, who took a course entitled, "Computer Trouble-Shooting," was not taking a course under 470104, "Computer Electronics Repair." On the other hand, a student at an Area Vocational-Technical School who earned a certificate in "Electronics" and took a course entitled, "Computer Trouble-Shooting," was, in fact, taking a 470104 course.

CCM Code

**470101 MOD** General Tech Electric, Basic Electricity, Electrical Appliances

This category took over the previous Industrial Arts general introduction to electricity.

**470103** Communication Electronics Repair, Receivers, Telephone

**470104** Computer Electronics Repair, Trouble-Shooting

**470105** Industrial Electronics

**470201** Heating, AC & Refrigeration Mechanics: General

**470202** Cooling & Refrigeration

**470203** Heating

**470301** Industrial Equipment Maintenance & Repair

**470401** Electromechanical, Hydraulic, Pneumatic Instrument Repair, Hydraulics & Pneumatics, Pumps

But "Hydraulics" titles, in particular are also found in Civil Engineering (140801), Agricultural Engineering (140301), and Agricultural Mechanics (010206). Student major and department of instruction are the principal determinants of coding in those cases.

**470501 RES** Stationary Energy Sources, Conventional Power Generation

**470601** Vehicle/Mobile Equipment Mechanics: General, Multi-Cylinder Engines, Small Engines, Motorcycles

**470602** Aircraft Mechanics, Airframe, Powerplant

Student major and institutional type are keys to the assignment of titles here, as aeronautical engineers take courses with abbreviated titles such as "Powerplant." Such cases were coded elsewhere, for example, 140201 or 150801.

**470603** Auto Body Repair, Chassis



CCM Code

**470604** Automotive Mechanics, Electrical System, Tune-Up, Transmission, Engines, Engine Rebuilding, Brakes

**470605** Diesel Engine Mechanics, Cummins TM, Detroit TM, 4 Stroke, 2 Stroke

**470801 NEW** Generic Principles of Mechanics

Like 470101, this category was created to absorb the old Industrial Arts introduction to mechanics. These are not physics courses.

**479001 NEW** Shop Tools, Hand Tools, Shop Organization/Safety

**479999** Mechanics & Repairers: Other

**PRECISION PRODUCTION (48)**

This section of the taxonomy covers curricula pursued by students in all types of institutions and at all postsecondary degree levels. The portions dealing with Drafting (4801) and Graphic/Printing Communications (4802) are cases in point. They reflect much of what traditional college students do in applied arts as well as the growth of the service sectors of the economy. The other subsections of the 48 series, with the exception of welding, are more sparsely populated. In fact, the number of categories either suspended, merged or deleted for the 1995 *CCM* reflected the decline of these skilled crafts in the economy of the times. The minor additions of the 2003 taxonomy do not change this reflection.

The various drafting titles (4801) are not industrial arts courses. They are usually taken as part of Engineering Technology (15 series) programs. The student's total record is the guide to coding assignment here.

CCM Code

**480101** Drafting: General, Technical Drafting/Drawing

"Engineering Drawing" for fine arts and other non-engineering majors was coded here. For engineering majors, it was coded 155001.

**480102** Architectural Drafting/Detailing/Drawing/Rendering/Delineation/Graphics

**480103** Civil/Structural Drafting, Construction Drafting/Graphics

**480104** Electrical/Electronics Drafting

CCM Code

- 480105** Mechanical Drafting, Aircraft Drawing, Industrial Drafting
- 480201** Graphic & Printing Communications: General, Intro to Printing/Print Media, Communication Design, Graphic Reproduction Theory, Publication Production
- 480202 NEW** Electronic/Desk-Top Publishing
- 480203** Commercial Art, Production Art, Air Brush, Paste-Ups, Media Graphics, Advertising Design, Storyboards
- 480204** Commercial Photography, Advertising Photography, Industrial Photography
- 480205** Typesetting, Composition, Typography
- 480206** Lithography, Platemaking
- 480207** Photographic Lab & Darkroom
- 480208 MOD** Printing Technology, Printing Press Operations, Bookbinding
- 480209** Silk Screen Making & Printing, Serigraphy
- 480301 SUS** Leatherworking & Upholstery: All [Titles moved to 489999]
- 480402 SUS** Meatcutting
- 480501** Precision Metal Work: General
- 480503** Machine Tool Operation/Machine Shop, Lathe Operation, Vertical Milling, Horizontal Milling, Drill Press, Bench Work
- 480504** Metal Fabrication and Finishing, Threads and Fasteners
- 480506 NEW** Gunsmithing
- 480506 RES** Sheet Metal
- 480507** Tool & Die Making

"Tool Design" is an engineering technology course, and coded 150805.

CCM Code

**480508** Welding

There are many titles referring to welding. Most of them belong here. Those dealing with the theoretical and design aspects of welding were classified under 150610.

**480509 NEW** Blueprint Reading for Precision Production, Precision Production Measurements

**480602** Jewelry Design/Fabrication/Repair

Other than institutional type, there are no clues to distinguish a "jewelry design" title here from one under 500206.

**480701** Woodworking, Cabinet Making, Millwork, Wood Techniques, Furniture Making

**TRANSPORTATION AND MATERIAL MOVING (49)**

As in the case of precision production, there was some rationalization of the taxonomy for the 1995 *CCM*, reflecting contracting in enrollments in sub-fields, a contraction confirmed in the data that form the grounds of the 2003 taxonomy.

CCM Code

**490101** Air Transport: General, Fundamentals of Aviation, Theory of Flight

**490102** Airplane Piloting & Navigation, Ground School, Commercial Pilot, Advanced Aviation, Aircraft Performance, Aviation Meteorology, Instrument Flight, Sailplane Indoctrination, Flight Instruction, Glider Instruction

"Aeronautics" is usually classified as 150801, not here.

**490104** Aviation Management, Aviation Laws/Regulations/Safety, Airport Operation, Air Traffic Control, Aviation Problems, Normal/Emergency Operations

**490107** Airplane Piloting: Private

**490201** Vehicle & Equipment Operation: All

This category covers titles referring to truck and bus driving, construction equipment operation, and mining equipment operation, all of which originally had their own codes.

CCM Code

**490301** Water Transport; Sailors, Deckhands, Rigging, Signaling, Deep Water Diving

**499999** Transportation: Other

**FINE AND PERFORMING ARTS (50)**

Most of the coding work for the 1990 *CCM* focused on either disaggregation of general categories such as art history and music history, or on distinguishing *performance* from production courses in dance and theater. And while many "Film Studies" courses are taught in literature departments, unless "literature" was specifically referenced in the title, the course was classified in the 5006 series (otherwise the course would be 239004). The 1995 version of this series simply refined and elaborated the topical coverage under the various codes.

The 2003 taxonomy reflects the growth of enrollments in applied design courses in the 1990s, further disaggregation in art history, and computer applications in both art and music.

CCM Code

**500101** Visual & Performing Arts: General, Survey, Art Forms, Experiencing Arts, Concepts in Art, Issues in Art, Art/Music, Drama/Film

**500102** Visual Communications, Visual Experience, Visual Analysis/Thinking/Research, Visual Form

The consensus elements of college catalogue descriptions indicate a general visual semiotics course. The illustrative contexts included advertising, television, and graphics.

**500202** Ceramics, Pottery

**500204** Fiber/Textiles/Weaving, Loom

"Textiles and Clothing" (190901) would not be coded here.

**500205 RES** Glass, Glassblowing

**500206** Metal, Jewelry

**500301** Dance, Choreography, Labanotation

Folk, square, ballroom, and social dancing titles were not classified here, rather in 360108. See comments for 360108.

CCM Code

- 500302** History of Dance
- 500401** Design: General, 2D, 3D, Design and Composition, Design Media
- 500402** Graphic Design/Arts/Lettering, Calligraphy, Marker Indication, Keylining
- 500403** Illustration Design, Illustration, Technical/Product Illustration
- 500404** Industrial Design, Product Design, Packaging
- 500405** Theater Design, Stagecraft
- Includes Costuming, Make-up, Lighting, Set Design, and other related titles. "Costuming" is not a home economics course.
- 500406 NEW** Electronic Design, Digital Imaging/Illustration, Computer-Based Design
- 500407 NEW** Interior Design
- In previous editions of the taxonomy, there was some confusion about where these titles were classified. Reading of on-line catalogue descriptions for the NELS cohort history resulted in the creation of a separate code, except for those courses taken by architecture students (See 040501).
- 500499** Design: Other
- 500501** Dramatic Arts, Acting, Directing
- 500502** History of Theater, Drama Criticism, Drama Appreciation
- 500503 NEW** Voice, Diction, Oral Interpretation
- Formerly coded 231002.
- 500601** Film Arts: General, Language of Film, Film and Society
- "Scripting" and "Screenwriting" courses are now in the new category covering writing for the media (090601).

CCM Code

**500602** Cinematography/Film-Making/Production, Film Animation, Film Techniques, Sight and Sound, Film Editing, Cartoon Workshop, Narrative Workshop, AFI Seminar

Courses in "Lighting," "Projection," and 8 mm and 16mm techniques were coded under Communication Technologies (100102).

**500605** Photography, Light/Colors, Black & White Photography, Portrait Photography, Still Photography, History of Photography

**500606** Video

**500607** History of Film, Theory, Criticism, Film Genres, Hollywood History, Film Aesthetics, International Cinema, Contemporary Cinema, Film Styles, Film Noir

All course titles referring to films of noted directors (Ford, Bergman, Eisenstein) are coded here, along with courses in film genres (mystery, romance, documentary).

**500701** Fine Arts: General, Theory, Principles, Foundations/Fundamentals of Art, Basic Studio, Studio Arts, Studio Fundamentals

**500702 NEW** Art Appreciation

These titles were split out from Art History even though the course work inevitably involved historical examples and considerations.

**500703** Art History

Includes courses in all periods except ancient, movements, artists (for example, Dutch Mannerists, Cubism, Monet).

**500704 NEW** Ancient Art, Art of Classical Greece and Rome, Ancient Egyptian Art,

**500705** Drawing, Drawing and Painting, Drawing and . . .

The word, "drawing," in combination with other fine arts media, placed the title here.

**500708** Painting, Watercolor, Oil

**500709** Sculpture

CCM Code

- 500710** Printmaking, Intaglio
- 500711** Color, Color Theory, Color and Design
- 500712 NEW** Rendering Techniques
- 500730** Non-Western Art: Hist & Appreciation, Oriental Art, Art of Sub-Saharan Africa
- 500740** History of Architecture, Appreciation of Architecture, Architectural Criticism
- 500760 NEW** Arts Management
- 500799** Fine Arts: Other
- 500901** Music: Ear Training, Dictation, Solfeggio, Sight-Singing, Basic Musicianship, Music Fundamentals, Introduction to Music
- 500902** Music History & Appreciation: General, Art of Listening, Concert Music/Hour, Heritage of Music, Humanities: Music, Masterpieces
- 500903** Music Performance, Applied Music, Music Lessons, Band, Chorus, Orchestra, Ensemble, Chamber Players, Conducting, Class Piano, Class Woodwind, Class Strings/Percussion/Brass
- 500904** Music Theory, Form and Analysis, Harmony, Counterpoint, Orchestration, Arranging, Composing
- 500905** Music Literature, Brass/Woodwind/Keyboard/Strings Literature
- 500906** Music History: Classical, Baroque, Romantic, Chamber, Symphony
- 500907** Music History: Opera & Musical Theater, Musical Comedy, Broadway
- 500908** Music History: Jazz
- 500909** Music History: Pop, Rock, Folk
- 500910** Music History: Afro-American Music

A title such as "Duke, Miles, "Trane" is Jazz History (500908), even though all three subjects are African-Americans. "History of Motown" would be here.

CCM Code

**500911 NEW** American Music

**500920** Non-Western Music

**500930 NEW** Electronic/Computer-Based Music/Composition

**500960** Business/Industry of Music, Music Copyright, Music Careers

**500999** Music: Other, Indeterminable

**509999** Visual & Performing Arts: Other

**OTHER (90)**

Over 20 new codes were added to this residual “chapter” for the 2003 taxonomy, most of them accounting for examinations ranging from Advanced Placement and CLEP to state basic skills tests to departmental language exams—all of which increasingly showed up on transcripts in the 1990s.

**901000** Cooperative Education, Internship: Field Unspecified

**902000** Readings, Seminars, Independent Study: Field Unspecified

"Tutorial" was coded here if it was a discrete form of non-remedial, academic independent study or seminar. It is distinct from both "tutoring" as a student service (330201) and remedial work.

**903000** College/Freshman Orientation, Orientation & Study Skills for College

**904000** Senior Seminars, Theses: Field Unspecified, Capstone Course: Field Unspecified

**905000** Study Abroad: Field Unspecified

The titles in this category did not indicate specific subject matter. "Florence Semester" or "Mexico Field Experience" were typical entries. Titles indicating specific subject matter were coded with the rest of the taxonomy. These were comparatively easy to identify as study abroad, since they are usually entered on transcripts in clusters, with a special term designation.

**906000 NEW** Undergraduate Teaching Assistantship



CCM Code

**907001 NEW** State Basic Skills/Rising Junior Examinations.

CLAST (College Level Academic Skills Test) was unique to public institutions of higher education in Florida, and TASP (Texas Academic Skills Program) to those in Texas. The English exams under the Georgia Regents Testing Program (RTP) are found in 230403.

**907002 NEW** Review Courses for State Basic Skills Tests

**907110 NEW** AP Examination: English literature, English composition

**907111 NEW** AP Examination: U.S. History

**907112 NEW** AP Examination: European History, World History

**907113 NEW** AP Examination: Calculus AB, BC

The way this examination was entered on transcripts it was often difficult to determine what was AB and what was BC, so the two were combined.

**907114 NEW** AP Examination: Computer Science

**907115 NEW** AP Examination: Biology

**907116 NEW** AP Examination: Chemistry

**907117 NEW** AP Examinations: Languages Other than English

Because some transcript entries did not specify the language at issue, and because the volume of examinations in the less-commonly-taught languages was small, all of the exams were combined in the same category.

**907118 NEW** AP Examinations: Other Fields

The fields included art, music, physics, government. The volume was too low in any one of these to justify a separate category.

**907119 NEW** AP Examinations: Subjects Not Specified

CCM Code

**907200 NEW CLEP:** General Fields (e.g. Social Sciences) and Unspecified

**907201 NEW CLEP:** Spanish Language

**907202 NEW CLEP:** College Algebra

**907203 NEW CLEP:** Other Specific Subjects

**907301 NEW Departmental Language Examinations:** Spanish

**907302 NEW Departmental Language Examinations:** French

**907303 NEW Departmental Language Examinations:** Other Languages and Unspecified

**907310 NEW Other Named Department/School Examinations**

**908000**           Unclassifiable Titles

## References

- Adelman, C. 1990. *A College Course Map: Taxonomy and Transcript Data*. Washington, DC: U.S. Department of Education.
- Adelman, C. 1995. *The New College Course Map and Transcript Files: Changes in Course Taking and Achievement, 1972-1993*. Washington, DC: U.S. Department of Education (2<sup>nd</sup> edition, 1999).
- Adelman, C. 2004a. *The Empirical Curriculum: Changes in Postsecondary Course Taking, 1972-2000*. Washington, DC: U.S. Department of Education.
- Adelman, C. 2004b. *The Empirical Curriculum: Changes in Student Course-Taking, 1972-2000*. Washington, DC: U.S. Department of Education.
- Albers, D.J., Loftsgaarden, D.O., Rung, D.C., and Watkins, A.E. 1992. *Statistical Abstract of Undergraduate Programs in the Mathematical Sciences and Computer Science in the United States*. Washington, DC: Mathematical Association of America.
- Ben-David, J. 1977. *Centers of Learning*. New York: McGraw-Hill.
- Green, P.J., Dugoni, B.L., and Ingels, S.J. 1995. *Trends Among High School Seniors, 1972-1992*. Washington, DC: National Center for Education Statistics.
- Holton, G. 1961. "Scientific Research and Scholarship." *Daedalus*, vol. 91, pp. 362-399.
- Hopman, S. 1991. "The Multiple Realities of Curriculum Policy Making." Paper presented at the 1991 Annual Meeting of the American Educational Research Association. ERIC Document #ED 023-291.
- Malitz, G. 1981. *Classification of Instructional Programs*. Washington, DC: National Center for Education Statistics.
- Mueller, M. 1989. "Yellow Stripes and Dead Armadillos," in P. Franklin (ed.), *Profession, 1989*. New York: The Modern Language Association of America.