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Portland State University Faculty Senate

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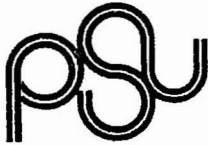
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portland state university

MEMORANDUM



To: Senators and Ex-officio Members to the Senate

From: Ulrich H. Hardt, Secretary of the Faculty

The Faculty Senate will hold its regular meeting on November 4, 1985, at 3:00 p.m. in 150 Cramer Hall.

AGENDA

A. Roll

*B. Approval of the Minutes of the October 7, 1985, Meeting

C. Announcements and Communications from the Floor

D. Question Period

1. Questions for Administrators
2. Questions from the Floor for the Chair

E. Reports from the Officers of Administration and Committees

1. Registration Up-date -- ~~Blumel~~ *Harris* + 2.7% by fees
4-4 1/2% by credit hours

F. Unfinished Business

- *1. Guideline for Selecting Courses for General Distribution Requirements -- Dressler *accepted*

G. New Business

- *1. Course and Program Proposals, Curriculum Committee -- Sestak
- *2. Course and Program Proposals, Graduate Council -- Sheridan
- *3. Proposed New Courses and Changes in Old Courses
- *4. Summary of Proposed Changes in Existing Programs

H. Adjournment

*The following documents are included with this mailing:

- B Minutes of the October 7, 1985, Meeting
- F₁ Guideline for Selecting Courses for General Distribution Requirements**
- G₁ Course and Program Proposals, Curriculum Committee**
- G₂ Course and Program Proposals, Graduate Council**
- G₃ Proposed New Courses and Changes in Old Courses**
- G₄ Summary of Proposed Changes in Existing Programs**

** Included for Senators and Ex-officio Members only

Senators unable to attend should pass materials to their alternates.

PORTLAND STATE UNIVERSITY

Minutes: Faculty Senate Meeting, October 7, 1985
Presiding Officer: Robert Jones
Secretary: Ulrich H. Hardt

Members Present: Beeson, Bennett, Bentley, Boyle, Brenner, Cabelly, Campbell, Cogan, Constans, Cumpston, Diman, Dressler, Dunkeld, Edner, Featheringill, Fisher, Goslin, Grimes, Hammond, Heneghan, A. Johnson, R. Johnson, Jones, Kimbrell, Kristof, Lutes, Mandaville, Maynard, Moor, Morris, Neklason, Olson, Parshall, Reardon, Rodich, Scheans, Scruggs, Solie, Sommerfeldt, Soohoo, Tang, Tracy, Weikel, Westover, White, Wyers.

Alternates Present: Kashoro for Badi'i, Kinnick for Kempner, Cease for Lockwood, DeGraaff for Newberry, Stowell for Stuart, Hein for Tayler

Members Absent: Bjork, Edwards-Allen, Goekjian, Hakanson, Peterson, Smeltzer, Steward, Wrench, Wurm.

Ex-officio Members Present: Blumel, Bogue, Dobson, Edgington, Forbes, Hardt, Harris, Heath, Leu, Miller, Morris, Paudler, Pfingsten, Schendel, Toulan, Trudeau.

APPROVAL OF THE MINUTES

The minutes of the June 3, 1985, meeting were approved as circulated.

ANNOUNCEMENTS AND COMMUNICATIONS FROM THE FLOOR

JONES welcomed Senators to the new year and also invited a round of applause for Nancy Tang, last year's presiding officer. He made the following announcements to help facilitate the smooth functioning of the Senate:

1. When speaking on the Senate floor, please state your name and department, so that we get to know each other and can have an accurate record of proceedings.
2. When motions or amendments are offered, please hand those to the Secretary in written form at the time of making them.
3. The Constitution requires that each Senator provide the Secretary to the Faculty with the name of an alternate. If you haven't done so already, please do.
4. Please inform the Secretary in writing of your presence if you arrive after the role has been taken.

REPORTS FROM OFFICERS OF THE ADMINISTRATION AND COMMITTEES

1. President BLUMEL reported that Fall registration will probably be up; form pick-up is up by 3% and fee payments are up 3.8% over the same time last year. Generally the increase seems to be across the board in most departments. HARRIS added that UO was up by 3%, WOSC by 10%

and EOSC by 20%. SOSC and OIT seemed to be about even with last year, while OSU had a drop of 2%, but was still above projections. System-wide there is a downward trend in the transfer category. RODICH wanted to know if there were many problems with over-enrollment for maximum number of hours. BLUMEL said that only a trivial number of students request permission and almost all are approved.

KIMBRELL inquired whether the budget was still enrollment driven. BLUMEL explained that BAS is now less enrollment-sensitive but will always be enrollment driven. Unless enrollment goes up or down by a given percentage, there is no effect on the budget for a given number of years.

2. MATSCHEK explained the EPC plan of attack for the writing-across-the-curriculum project and invited faculty input for the drafting of the proposal. Recommendations will be presented to the Senate in January 1986.

UNFINISHED BUSINESS

1. CABELLY moved that "at least 18 upper division credits must be taken in the academic distribution areas outside the major department, with no more than 12 credits in any one department. These credits may be a part of the 54 credits used to meet the distribution requirements."

JONES explained that transfers and students who change their majors are in trouble without this motion, amending the action of the Senate's April meeting. DIMAN gave a worst-scenario example where students who had taken 9 lower division credits in Political Science and in Sociology could then not have 6 upper division credits taken in Anthropology and History count. He also pointed out that the upper division hours did not have to be on the list.

The motion was passed unanimously.

2. In other unfinished business DIMAN gave the Advisory Council's interpretation that the constitution gives the responsibility of designating graduation requirements to the ARC. Any deviation from that would require a constitutional amendment.

TANG therefore moved "that the ARC develop general guidelines for the November 4, 1985, Senate meeting for departments selecting courses to meet general distribution requirements."

JONES asked if the motion violated the constitution. DIMAN replied that "normal channels" means ARC.

The motion was passed unanimously.

In answer to DRESSLER's question regarding the timeline, DOBSON said that materials for the next copy of the catalog would have to be ready by February 1.

ADJOURNMENT

There being no further business, the meeting was adjourned at 15:34.

TO: Faculty Senate

FROM: Academic Requirements Committee

RE: Guidelines for the selection of courses to meet the General Education Requirements.

The Academic Requirements Committee believes that it was the intent of the Senate that:

1. The distribution requirements should provide focus to the general education of the student.
2. The courses which can be used to meet the distribution requirements should be designated on a limited list in order to allow the student to elect those courses which will provide the best opportunity for the non-major to be introduced to the subject matter of and the approaches used by various disciplines.
3. Great care should be taken by departments in the selection of appropriate courses for the list.
4. Particular attention should be paid to the selection of appropriate upper division courses which may be used to meet both the basic 54 credit distribution requirement and the 18 credit upper division requirement. These courses should be either those designed for non-majors or those which, when combined with lower division pre-requisites or other courses on the list, provide a suitable 6-12 credit general education combination.

The Academic Requirements Committee understands that the routing of the list of courses will be as follows:

1. Courses for the proposed list are determined by departmental faculty.
2. The department chair forwards course recommendations to the school or college dean for comment. The dean then transmits the departmental recommendation and comments to the Office of Academic Affairs.
3. The Dean of Undergraduate Studies transmits all recommendations to the Academic Requirements Committee by Dec. 6, 1985.
4. The Academic Requirements Committee reviews all recommendations and prepares a recommendation for the Senate. This recommendation will include the lists of courses submitted by the departments.

ATTACHED: Copy of the distribution requirements as enacted by the Senate.

DISTRIBUTION REQUIREMENTS

- A. Every student earning a B.A. or B.S. in a major department must earn a minimum of 18 credits in each of the following academic distribution areas.

ARTS AND LETTERS

(Art, Dance, English, Foreign Languages, General Arts and Letters, Music, Philosophy, Speech Communication, Theater Arts)*

LIFE AND PHYSICAL SCIENCES AND MATHEMATICS

(Biology, Chemistry, Geology, Physics, Public Health Studies, Science, Computer Science, Mathematical Sciences)

SOCIAL SCIENCE

(Anthropology, Economics, General Social Science, Geography, History, Political Science, Psychology, Sociology)*

These credits must be earned in two departments in each academic distribution area with a minimum of six credits to be earned in any one department.

All courses used for these distribution requirements must be selected from a list of courses designated by each department as being usable for distribution requirements.

Courses used for these distribution requirements must be numbered 100-499 exclusive of 199, 299, 399, 400-410.

*The departments of Black Studies and Women's Studies will designate which of their courses can be used for Social Science distribution credit and which for Arts and Letters distribution credit.

- B. At least 18 upper division credits must be taken in the academic distribution areas outside the major department, with no more than 12 credits in any one department. These credits may be a part of the 54 credits used to meet the distribution requirements.

November 4, 1985

TO: Faculty Senate

The University Curriculum Committee recommends approval of the following course changes, new courses, program changes, and course deletions.

Art

New Courses: ART 180, 367, 460, 461, 462, 470.

Course changes: ART 217, 218, 260, 261, 262, 296, 297, 298, 320, 321, 322, 330, 331, 332, 360, 361, 362, 365, 366, 436, 437, 438, 466, 467, 468.

Course deletions: ART 324, 325.

Chemistry

Program change as submitted

New Courses: CH 207, 208, 209.

Course changes: CH 104, 105, 114, 115, 106, 116, 204, 205, 206, 214, 215, 236, 237, 453.

Course deletions: CH 201, 202, 203, 216.

English

Course changes: ENG 300, 315.

Foreign Languages

New Courses: CHN 410, 424, 425, 426, JPN 410, 424, 425, 426.

Course changes: CHN 304, 305, 306; JPN 304, 305, 306.

Geography

Course deletion: GEOG 454.

Geology

Course changes: G 316, 421, 474.

International Studies

New courses: INTL 199, 399, 407.

Course changes: INTL 199A, 199S, 399A, 399S, 407A, 407S.

Mathematical Sciences

Course changes: MTH 100, 100A, 100B.

History

Course changes: HST 291, 292, 293, 437, 438, 439.

Physics

New courses: PH 317, 318.

Course changes: PH 101, 102

Course deletions: PH 103, 104, 105, 106.

Speech Communication

Program change as submitted

New courses: SP 335, 425, 445, 494.

Course changes: SP 220, 311, 400, 414, 415, 440, 460, 493.

General Studies: Arts & Letters, Science, Social Science

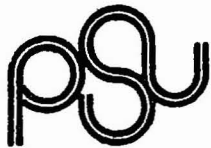
Linguistics

Course changes: 199A, 199E, 199F, 399A, 399E, 399F, 401A, 401E, 401F, 405A, 405E, 405F, 407A, 407E, 407F, 410A, 410E, 410F.

Course Change Summary

	New Courses	Course Changes	Deleted Courses
Art	6	25 (3)	2
Chemistry	3	14 (1)	4
English		2	
Foreign Lang	8	6	
Geography			1 (1)
Geology		3 (2)	
Intl Studies	3	6	
Mathematics		3	
History		6 (3)	
Physics	2	2	4
Speech	4 (2)	8 (5)	
Linguistics		18	

NOTE: (#) is the number of 400 level courses in the summary that also carry "grad" designation.



portland state university

G₂

MEMORANDUM

October 7, 1985

To: Faculty Senate

From: Graduate Council

Wilma Sheridan, Acting Chairperson, Seymour Adler, Sally Althoff,
Thomas Dieterich, Barbara Friesen, Pieter Frick, Adriane Gaffuri,
Leonard Kimbrell, Joseph Kohut, Robert Millette, Alan Raedels,
Vince Williams, Martin Zwick.

The Graduate Council has reviewed the following proposals for program changes, including new courses, changes in catalog descriptions, and elimination of courses as follows:

New Courses

GL 510, Fr 510, Span 510

G 541

Sp 494, Sp 516, Sp 575, Sp 576, Sp 577, Sp 579L

Courses to be dropped

Geog 454

Changes in Existing Courses

Art 436, 437, 438 Change in prerequisites, addition of graduate option,
and addition of graduate requirements

Ch 453 Change in recitation hours and laboratory hours

Ch 520 Change in credit hours

Ch 532 Change in credit hours and lecture hours

Ch 555 Change in credit hours and lecture hours

Ch 560 Change in credit hours

G 421 Change in credit hours and laboratory hours

G 474 Change in title

Hst 437, 438, 439 Change in number, prerequisites, and addition of
graduate option

Phl 423, 424 Addition of graduate option

Sp 400 Change in prerequisites

Sp 415 Change in prerequisites

Sp 440 Change in description and prerequisites

Sp 460 Change in description and prerequisites

Sp 493 Change in title

Sp 515 Change in prerequisites

Sp 540 Change in prerequisites

Sp 571 Change in title, description, and prerequisites

Sp 572 Change in prerequisites

Sp 579 Change in prerequisites and requires concurrent enrollment in Sp 579L

Ling 410A, 507A Offered for Anthropology credit only

Ling 410E, 507E Offered for English credit only

Ling 410F, 507F Offered for Foreign Language credit only

Addition of letter suffixes and clarification of credit

ART

New Courses

Art 180. Architecture: Form and Space. (3)

An introduction to the field of architecture and the many considerations that have an impact on building design. A study of perceptual, environmental and historical concepts through lectures and personal experience in observing architectural spaces and forms. Designed for the non-architect and those considering the profession.

Art 367. Fundamentals of Environmental Design. (3)

Introduction of basic concepts of climate and impacts on personal comfort. Thermal, lighting and acoustical topics covered. Architectural design concepts discussed to minimize mechanical systems. Prerequisites: concurrent enrollment in Art 360, 361, or 362 or consent of instructor.

Art 460, 461, 462. Architectural Design Studio III. (4, 4, 4)

Continued study of architectural and planning issues through execution of large scale projects. Exploration of special issues in architectural design. Prerequisites: Art 360, 361, 362 or equivalent.

Art 470. Graphic Design/Portfolio. (3)

A one-term course designed for art students who are interested in developing a portfolio that depicts in a consistent and professional manner their creative and technical abilities in their area of concentration. Maximum: 3 credits. Prerequisites: Art 466, 467 or consent of instructor.

Change in Old Courses

Art 217. Calligraphic Lettering. (3)

A one-term beginning course in lettering with the broad-edged pen. Students will study the Roman alphabet in three forms: capitals, minuscules and cursives. Emphasis will be on learning correct weights, proportions and forms of letters. Practical skills required to shape letters with the pen will be learned. Principles of good lettering, historical development of alphabets, materials and drawing tools, letter and word spacing, layout and composition and presentation of artwork will be covered. Maximum: 3 credits. Prerequisites: Art 195, 196, 197 or consent of instructor.

(Formerly Lettering. Change in title, description, credit hours from (1) to (3) and prerequisites.)

Art 218. Graphic Design/Lettering. (3)

A one-term introductory course in the fundamentals of production lettering for visual communication. Studio assignments will focus on basic techniques for construction of letters, the use of appropriate drawing and drafting tools, terminology related to lettering and typography, rendering procedures for built-up letterforms and creative usages of lettering and typography for logotypes, posters, album covers and other printed matter. Maximum: 3 credits. Prerequisites: Art 195, 196, 197. This course must be taken concurrently with either Art 296, 297, or 298.

(Formerly Art 323, 324, 325. Advanced Lettering. Change in number, title, description, credit hours from (1, 1, 1) to (3), prerequisites and separation of sequence.)

Art 260, 261, 262. Architectural Design Studio I. (3, 3, 3)

Projects and exercises to familiarize the student with fundamental form and space concepts of architecture and to develop sound bases for value judgments concerning proportion, scale, site and building design relationships. The release of the student's potential creative capabilities is a primary concern of the course. Courses must be taken in sequence.

(Formerly Art 180. Design Studio I. Change in number, title, description and credit hours from (3) to (3, 3, 3).)

Art 296, 297, 298. Graphic Design I. (3, 3, 3)

A three-term introductory sequence, that focuses on graphic arts production processes, methods, and techniques of working with graphic arts materials and tools. A variety of studio assignments will be undertaken that involve students with design theory, art and copy preparation and other production processes. Courses must be taken in sequence. Prerequisites: Art 195, 196, 197. Art 218 must be taken concurrently with either Art 296, 297, or 298.

(Formerly Art 299. Graphic Design. Change in course number, title, description, credit hours from (2-3) to (3, 3, 3) and prerequisites.)

Art 320, 321, 322. Graphic Design II. (3, 3, 3)

A three-term, intermediate sequence studio course that explores the application of images, signs and typography to design solutions of visual communication. A variety of assignments will be completed that explore the development of graphic images through many variations of a single idea. Courses must be taken in sequence. Prerequisites: Art 218 and Art 296, 297, 298.

(Formerly Graphic Production. Change in title, description and prerequisites.)

Art 330, 331, 332. Architectural Graphics. (3, 3, 3)

An exploration of the principles of light, color, and space representations in typical architectural forms. Use of various media and methods. Axonometrics, perspective, shades and shadows, rendering, and models. Prerequisites: Art 260, 261, 262 or consent of instructor.

(Formerly Art 211, 212, 213. Change in number, description and prerequisites.)

Art 360, 361, 362. Architectural Design Studio II. (4, 4, 4)

Introduction to design considerations based on supporting human activities, structure, and planning through lectures and studio projects; continued study of design process and methods encompassing concepts of architecture, landscape architecture, and interior design. Courses must be taken in sequence. Prerequisites: Art 260, 261, 262 or equivalent.

(Formerly Art 280. Design Studio II. Change in number, title, description, credit hours from (4) to (4, 4, 4) and prerequisites.)

Art 365. Fundamentals of Structure. (3)

Structural material used today; structural systems, both historical and modern; simple ideas of force and counter-force; survey of trends in structural design, with regard both to new materials and new methods; non-mathematical in approach. Prerequisites: concurrent enrollment in Art 360, 361, or 362 or consent of instructor.

(Formerly Art 221. Construction Theory. Change in number, title, description and prerequisites.)

Art 366. Fundamentals of Construction. (3)

Materials and techniques of construction used in buildings. Materials utilized in framing, fabrication, enveloping, surfacing, and finishing. Aspects of color, scale, texture; techniques for use. Emphasis on concept of shelter and ways in which different materials and systems provide shelter. Prerequisite: concurrent enrollment in Art 360, 361, or 362 or consent of instructor.

(Formerly Art 121. Construction Materials. Change in number, title, description and prerequisites.)

**Art 436, 437, 438. Painting. (3, 3, 3) (Grad)

Advanced painting problems based on various subjects. Work may include various media. May be offered with specific subtitles such as Figure Painting, Landscape Painting, or others. Prerequisites: 9 credits in Art 290 or consent of instructor. For graduate credit, additional work will be required which may take the form of extra paintings or a special project.

(Change in prerequisites, addition of graduate option and addition of graduate requirements.)

Art 466, 467, 468. Graphic Design III. (3, 3, 3)

A three-term sequence of advanced graphic design studio assignments that offer students design problems of greater complexity and broader scope than experienced in Graphic Design II. Emphasis on design theory, practical application of "real-world" design problems, professionalism and finished artwork. These courses must be taken in sequence. Prerequisites: Art 320, 321, 322.

(Formerly Advanced Graphic Design. Change in title, description, credit hours from (4, 4, 4) to (3, 3, 3), prerequisites and lecture hours.)

Old Courses Dropped

Art 324, 325. Advanced Lettering. (1, 1)

CHEMISTRY

New Course

**Ch 207, 208, 209. University Chemistry. (3, 3, 3)

Fundamental basis of Chemistry for chemistry majors and well-prepared science, engineering and health professional students. Three lectures. Requires concurrent enrollment in Ch 214 for Ch 207, in Ch 215 for Ch 208, Ch 217 for Ch 209 unless waived by advisor. Prerequisites for Ch 207: high school chemistry and Mth 102 or equivalent. Prerequisite for Ch 208 and Ch 209: grade of C or better in previous course.

Changes in Old Courses

****Ch 104, 105. Introductory Chemistry. (3, 3)**

A survey of chemistry for students in allied health fields such as nursing and dental hygiene, in forestry, and the liberal arts. This course is not intended for science, health professional or engineering majors. Three lectures. Must be taken in sequence. Prerequisite for Ch 104: Mth 100, or concurrent enrollment or equivalent.

****Ch 114, 115. Introductory Chemistry Laboratory. (2, 2)**

Laboratory work to accompany Ch 104, 105, respectively. Concurrent enrollment in the appropriate lecture course is required. One 1-hour recitation and one 2-hour laboratory period. Pass/No Pass only.

(Formerly Ch 104, 105, 106. Change in description, prerequisites, separation of laboratory from lecture, addition of Ch 114, 115 numbers for lab, P/NP only for lab and division of sequence.)

****Ch 106. Organic and Biochemistry. (4)**

A brief survey of organic chemistry and biochemistry for students in allied health fields such as nursing and dental hygiene, and for liberal arts students. This course is not intended for science or engineering majors. Four lectures. Prerequisite: Ch 105.

****Ch 116. Organic and Biochemistry Laboratory. (1)**

Laboratory work to accompany Ch 106. Concurrent enrollment in Ch 106 is required. One 3-hour laboratory period.

(Formerly Ch 104, 105, 106. Introductory Chemistry. Change in title, description, prerequisites, lecture hours, recitation hours, laboratory hours, separation of laboratory from lecture, addition of Ch 116 number for lab and division of sequence.)

****Ch 204, 205, 206. General Chemistry. (4, 4, 3)**

Fundamental basis of chemistry for science, engineering and health professional students (such as pre dental, premedical, premedical technology and veterinary students). Ch 204, 205: four lectures. Ch 206: three lectures. Requires concurrent enrollment in Ch 214 for Ch 204, Ch 215 for Ch 205, and Ch 217 for Ch 206 unless waived by advisor. Prerequisite for Ch 204: Mth 101 or concurrent enrollment.

(Change in description, prerequisites, lecture hours and recitation hours.)

****Ch 214, 215. General Chemistry Laboratory. (1, 1)**

Laboratory work to accompany General Chemistry (Ch 204, 205) or University Chemistry (Ch 207, 208). Concurrent enrollment in the appropriate lecture course is required. One three-hour laboratory. Pass/No Pass only.

(Change in description.)

****Ch 236, 237. Elements of Organic Chemistry. (3, 3)**

Chemistry of the carbon compounds, the aliphatics, aromatics and derivatives. Meets pre dental, premedical technology, and preveterinary requirements. Three lectures. Prerequisites: Ch 105, or Ch 206, or Ch 209 and concurrent enrollment in Ch 238, 239, respectively.

(Change in prerequisites.)

Ch 453. Biochemistry Laboratory. (2) (Grad)

Laboratory work to accompany Ch 450. Introduction to general techniques of biochemistry including purification and characterization of enzymes. One 4-hour laboratory period. Prerequisite: Ch 450 or concurrent registration.

(Change in recitation hours and laboratory hours.)

Ch 520. Selected Topics in Analytical Chemistry. (2-4)
(Change credit hours from (2) to (2-4).)

Ch 532. Advanced Topics in Organic Chemistry. (2-4)
Current topics such as stereochemistry, natural products, pericyclic reactions, structure-reactivity relationships, carbonium ions, heterocyclic and polycyclic compounds, organic photochemistry. As subject matter will vary, course may be repeated with consent of instructor.
Prerequisite: Ch 432 or equivalent.
(Change in credit hours from (3) to (2-4) and lecture hours.)

Ch 555. Advances in Biochemistry. (2-4)
Current topics in biochemistry such as neurobiochemistry, membrane structure, differentiation, metabolic regulation, bioenergetics, nucleic acids. As subject matter will vary, course may be repeated with consent of instructor. Prerequisite: Ch 452 or equivalent.
(Change in credit hours from (2) to (2-4) and lecture hours.)

Ch 560. Selected Topics in Physical Chemistry. (2-4)
(Change in credit hours from (2) to (2-4).)

Old Courses Dropped

**Ch 201, 202, 203. Chemistry for Engineering Majors. (3, 3, 3)

**Ch 216. General Chemistry Laboratory. (1)

ENGLISH

Changes in Old Courses

Eng 300. Critical Approaches to Literature. (3)
(Formerly Applied Literary Criticism. Change in title.)

Eng 315. The Shorter Poem. (3)
Shorter poems in world literature. Primary attention given to poems in the English language, but the classics of other languages will be read in translation as appropriate to tracing of forms and themes.
(Formerly Lyric Poetry. Change in title and description.)

FOREIGN LANGUAGES

New Courses

German

GL 510. Selected Topics. Credit to be arranged.

Chinese

Chn 410. Selected Topics. Credit to be arranged.

Chn 424, 425, 426. Advanced Chinese Reading, Translation, and Conversation.
(3, 3, 3)

Development of facility with complex grammatical patterns, translation skills, and reading and discussing a variety of texts. Prerequisites: Chn 314, 315, 316 or consent of instructor.

Japanese

Jpn 410. Selected Topics. Credit to be arranged.

Jpn 424, 425, 426. Advanced Japanese Reading, Translation, and Conversation. (3, 3, 3)

Development of facility with complex grammatical patterns, translation skills, and reading and discussing a variety of texts. Prerequisites: Jpn 314, 315, 316 or consent of instructor.

French

Fr 510. Selected Topics. Credit to be arranged.

Spanish

Span 510. Selected Topics. Credit to be arranged.

Changes in Old Courses

Chinese

Chn 304, 305, 306. Chinese Literature in Translation. (3, 3, 3)
(Formerly Eng 301, 302, 303. Change in number and change of rubric from Eng to Chn.)

Japanese

Jpn 304, 305, 306. Japanese Literature in Translation. (3, 3, 3)
(Formerly Eng 304, 305, 306. Change of rubric from Eng to Jpn.)

GEOGRAPHY

Old Course Dropped

Geog 454. Western Pacific Rim. (3) (Grad)

GEOLOGY

New Course

G 541. Ground Water Modeling. (3)

The study of groundwater modeling using finite difference and finite element methods. Prerequisites: G 418, Mth 203 or Mth 206, and CS 208.

Changes in Old Courses

G 316. Sedimentary Mineralogy and Petrography. (4)

Descriptive study of terrigenous, allochemical and orthochemical sedimentary rocks and minerals, including their genesis by weathering, diagenesis and other geochemical processes. Emphasis on the petrographic character of sedimentary rocks. Two lectures and two 2-hour laboratory periods. Prerequisite: G 314 or consent of instructor.

(Change in description, credit hours from (3) to (4) and laboratory hours.)

G 421. Economic Geology. (4) (Grad)

Economics of mineral deposits: geology of metallic and non metallic mineral deposits. Three lectures; one 3-hour laboratory. Prerequisites: G 316, G 393 or consent of instructor.

(Change in credit hours from (3) to (4) and laboratory hours.)

**G 474. Geomorphic Processes. (3) (Grad)

(Formerly Dynamic Physiography. Change in title.)

HISTORY

Change in Old Courses

Hst 291. Foundations of East Asian Civilization. (3)

A presentation of the major philosophical and religious traditions of China, Japan, and Korea, including Confucianism, Taoism, Buddhism, and Shinto. Attention will also be given to basic patterns of social life and political organization. Artistic and literary material, as well as primary historical documents, will be used to illustrate the main themes of East Asian civilization.

Hst 292. China, Past and Present. (3)

A thematic survey of China in traditional and modern times. Emphasis will be placed on connections between traditional forms of social and political organization and their transformation in modern times. Attention will also be given to similar connections in intellectual and cultural developments through the use of historical documents, artifacts, and literature.

Hst 293. Japan, Past and Present. (3)

A thematic survey of Japan in traditional and modern times. Emphasis on the historical legacy of traditional Japan in the modern era. Political, social, economic, and cultural topics will be examined, and art and literature will be used to illustrate connections between past and present.

(Formerly East Asian Civilization. Change in title, description and division of sequence.)

Hst 437. Early Japan to 1600. (3) (Grad)

History of Japan from the origins of the Japanese people and formation of the early Japanese state through the development of Japanese feudal institutions. Emphasis on the relationship between native ideas and institutions and Chinese influence, culture of the Heian court aristocracy, evolution of Japanese feudalism. Art, literature, and documents in translation used in addition to textbook material. Prerequisite: upper division standing.

(Formerly Hst 391. Change in number, prerequisites and addition of graduate option.)

Hst 438. Tokugawa Japan, 1600-1850. (3) (Grad)

History of Japan from establishment of Tokugawa rule in 1600 through mid-nineteenth century, prior to "opening" of Japan by the West. Emphasis on Tokugawa political institutions, Neo-Confucianism as political and social ideology, cult of the samurai, and economic changes that laid foundations for modern Japan; cultural developments such as kabuki and bunraku theater, haiku poetry, literature and art of the "floating world". Prerequisite: upper division standing.

(Formerly Hst 392. Change in number, prerequisites and addition of graduate option.)

Hst 439. Modern Japan, 1850-present. (3) (Grad)

History of Japan from Perry Expedition in 1853 to the present. Emphasis on Tokugawa foundations for rapid transformation of Japan beginning with the Meiji Restoration; Westernization; evolution of modern political institutions; rise of Japanese militaries and imperialism in Asia. Modern literature, postwar social change, and status of Japan as leading industrial nation. Prerequisite: upper division standing.

(Formerly Hst 393. Change in number, prerequisites and addition of graduate option.)

INTERNATIONAL STUDIES

New Courses

Intl 199. Special Studies. Credit to be arranged.

Intl 399. Special Studies. Credit to be arranged.

Intl 407. Seminar. Credit to be arranged.

Changes in Old Courses

Intl 199A. Special Studies. Credit to be arranged.

This course is offered for Arts & Letters credit only.

Intl 199S. Special Studies. Credit to be arranged.

This course is offered for Social Science credit only.

(Formerly Intl 199. Addition of letter suffixes and addition of credit clarification phrase.)

Intl 399A. Special Studies. Credit to be arranged.

This course is offered for Arts & Letters credit only.

Intl 399S. Special Studies. Credit to be arranged.

This course is offered for Social Science credit only.

(Formerly Intl 399. Addition of letter suffixes and addition of credit clarification phrase.)

Intl 407A. Seminar. Credit to be arranged.

This course is offered for Arts & Letters credit only.

Intl 407S. Seminar. Credit to be arranged.

This course is offered for Social Science credit only.

(Formerly Intl 407. Addition of letter suffixes and addition of credit clarification phrase.)

MATHEMATICAL SCIENCES

*Mth 100. Intermediate Algebra. (4)

Prerequisite: one year of high school algebra, or Mth 94. In most cases, a student cannot receive credit for this course after taking a higher numbered mathematics course. Consent of department is required in advance for exceptions. Mth 100 cannot be used to satisfy University distribution requirements.

*Mth 100A, 100B. Intermediate Algebra. (2, 2)

Prerequisite: one year of high school algebra, or Mth 94. In most cases, a student cannot receive credit for this course after taking a higher numbered mathematics course. Consent of department is required in advance for exceptions. Mth 100A and Mth 100B cannot be used to satisfy University distribution requirements. Mth 100A, 100B must be taken in sequence.

(Formerly Mth 100. Intermediate Algebra. (4). Addition of two term, two credit option and addition of footnote: *A student may receive credit for either Mth 100 or Mth 100A, 100B.)

PHILOSOPHY

Changes in Old Courses

- Phl 423. Metaphysics. (3) (Grad)
(Addition of graduate option.)
- Phl 424. Epistemology. (3) (Grad)
(Addition of graduate option.)

PHYSICS

New Course

- Ph 317, 318. Solid State Physics for Engineering Students. ~~(3)~~ (3/2)
A two term survey of solid state physics including topics necessary for understanding crystalline solids and their electron transport processes. Topics include crystal lattices, x-ray diffraction, concepts of quantum physics, Schrodinger equation, electron tunneling, physical statistics, free electron theory of metals, effect of periodic potential on electrons, intrinsic and impurity semiconductors and analysis of p-n semiconductor junction. Prerequisite: Ph 207, 208, 209 or equivalent.

Changes in Old Courses

- Ph 101, 102. Essentials of Physics. (4, 4)
An elementary introduction to the basic principles of physics, their interpretation and application. This course is designed to accommodate students in science related areas of study and students in all other fields. Three lectures; one 2-hour laboratory period. Prerequisite: Mth 100, or equivalent proficiency.
(Formerly Ph 101, 102, 103. Change in description, credit hours from (3, 3, 3) to (4, 4), laboratory hours, division of sequence and combining lecture with required laboratory.)

Old Courses Dropped

- Ph 103. Essentials of Physics. (3)
- Ph 104, 105, 106. Physics Laboratory. (1, 1, 1)

SPEECH COMMUNICATION

New Courses

- Sp 335. Interviewing. (3)
The study of effective and practical interviewing principles including types of interview structures, preparation of interview schedules, oral language styles and questioning. Informational/employment, problem solving, and persuasive interviewing processes will be examined from both interviewer and interviewee perspectives.

- Sp 425. Student Teaching: Speech-Language Pathology. (12) (Grad)
Practicum in speech-language pathology in the public school setting, under the direction of a supervising speech-language clinician (ASHA CCC-SP). Students will participate in the following activities: diagnosis and evaluation; selection of caseload and scheduling; management of an entire caseload; maintaining appropriate records; handling both incoming and outgoing referrals; and parent/teacher/staff conferences. Concurrent registration in Sp 495. Prerequisites: Admission to teacher education program, 3 terms of clinical practicum to include one completed at PSU, 3.0 GPA in speech major. Admission by approved application only, one full academic term in advance.
- Sp 445. Communication in New China. (3)
An intercultural communication approach to a study of the People's Republic of China with emphasis on internal Chinese communicative practices. Course includes study of Chinese films, newspapers, laws, adult and children's literature, philosophy and speeches. Prerequisite: upper division standing.
- Sp 494. Survey of Language Remediation. (3) (Grad)
A survey of the causes, evaluation and management of language disorders in the public school setting. Emphasis is placed upon the developmental stages of language acquisition, language sampling techniques and remediation programs in the school curriculum. Designed for the regular and special educator. Special project or additional work required for graduate credit. Prerequisite: upper division standing.
- Sp 516. Advanced Puppetry for Clinic and Classroom. (3)
Advanced Puppetry allows students to further develop knowledge and skills in puppetry for the classroom, public, counseling and/or therapy rehabilitation environment. Projects include designing and developing more complex and sophisticated lessons and puppets. The student will develop lessons or units relative to grade level and interest. Recommended for therapists, special education teachers, classroom teachers and counselors. Prerequisites: graduate standing, Sp 415 or professional experience, and/or consent of instructor.
- Sp 575. Pediatric Audiology. (3)
This course will provide an overview of: genetic and metabolic disorders associated with hearing loss in children; behavioral and electrophysiological procedures used to assess hearing in children; the effects of early childhood hearing impairment on speech and language development; management of the hearing impaired child. Prerequisite: Sp 488 or consent of instructor.
- Sp 576. Geriatric Audiology. (3)
The study of hearing in aging. Physiological changes in the hearing mechanism associated with primary and secondary aging. Audiologic assessment of the presbycusis patient, as well as intervention procedures are emphasized. Psychosocial forces associated with hearing impairment during the aging years are examined. Prerequisite: Sp 488.
- Sp 577. Educational Audiology. (3)
This course will provide theoretical and practical information dealing with service to public school children with hearing impairments. Topics covered include incidence of hearing problems in the school age population, hearing conservation programs, and diagnosis and management of the child with peripheral and central auditory deficits. Prerequisite: Sp 490 or consent of instructor.

Sp 579L. Hearing Aid Laboratory. (1)

This course is designed to provide students with experience in performance of electroacoustic and psychoacoustic evaluation of hearing aid operating characteristics. Requires concurrent enrollment in Sp 579.

Changes in Old Courses

Sp 220. Public Speaking. (4)

Theory, forms, and practice in public speaking. Audience analysis for special types of public speeches. Critical thinking in oral discourse. (Change in description and prerequisites.)

Sp 311. Advanced Interpretation. (3)

Instruction in the discovery and oral expression of meaning and feeling in prose, poetry, and dramatic literature. Prerequisites: Sp 210 or Sp 212 or consent of instructor. (Change in prerequisites.)

Sp 400. Communication Theory. (3) (Grad)

A multidisciplinary approach to problems in human communication. Special emphasis on the study and construction of "communication models" which serve to integrate and order concepts from related disciplines that are relevant to an understanding of communicative processes. Prerequisites: upper division standing or consent of instructor. (Change in prerequisites.)

Sp 414. Teaching Speech in the Secondary School. (3)

Speech practices and projects utilizing methods and materials suitable for high school classrooms and extracurricular programs. Recommended for all teachers of language arts on the secondary level. Prerequisites: CI 310, CI 312, and admission to the teacher education program; or consent of instructor. (Change in prerequisites.)

Sp 415. Puppetry for Clinic and Classroom. (3) (Grad)

Emphasis on the introduction and use of puppets with children in a therapeutic or classroom environment. Projects for the teacher include: construction of several types of puppets; development of lessons or units relative to grade level and interest; development of a historical perspective and appreciation concerning puppetry; development and demonstration of teaching techniques with puppets; and instruction in the manipulation of various puppets. Recommended for therapists, special education teachers, and classroom teachers. Prerequisites: upper division standing, and minimum 9 credits in education or teaching experience, or consent of instructor. (Change in prerequisites.)

Sp 440. Problems of Intercultural Communication. (3) (Grad)

A theoretic probe and research review of the special problems of understanding and expression which occur whenever persons are in communication with those who have different cultural or ethnic backgrounds. Course includes opportunities for students to explore their own intercultural communication abilities through introspection and activities of an intercultural nature. Prerequisite: upper division standing. (Change in description and prerequisites.)

Sp 460. Urban Communication. (3) (Grad)

An exploration of the nature and problems of communication in the American city. Description and critical analysis of selected communicators, groups, and institutions. A consideration of theories and practices which may provide solutions to the urban communication crisis. Both verbal and nonverbal aspects of communication will be included. Prerequisites: upper division standing or consent of instructor.

(Change in prerequisites.)

Sp 493. Survey of Speech, Language and Hearing Disorders. (3) (Grad)

(Formerly Principles and Techniques of Speech Correction. Change in title.)

Sp 515. Teaching Speech in the College. (3)

Problems of teaching the basic college speech course and specialized speech courses, including a consideration of theory, methods, and materials. Prerequisite: Consent of instructor.

(Change in prerequisites.)

Sp 540. Advanced Intercultural Communication. (3)

A sophisticated analysis of reality-construct assumptions underlying intercultural communication concepts of value difference and cultural relativity. Emphasis is on the intercultural application of communication theory. Students develop and present an in-depth analysis of intercultural communication implementation in an interpersonal or organizational context. Prerequisites: Sp 440 or consent of instructor.

(Change in prerequisites.)

Sp 571. Physiological Acoustics. (3)

Study of contemporary auditory theory and its historical development; theories related to the function of physiological and neurological mechanisms in light of empirical findings; psychophysical findings related to physiological findings. Prerequisites: Sp 471 or consent of instructor.

(Formerly Anatomy and Physiology of the Ear. Change in title, description and prerequisites.)

Sp 572. Psychoacoustics. (3)

A detailed study and investigation of the research concerning both monaural and binaural auditory phenomena including: localization and lateralization, combination tones, adaptation and fatigue, time and intensity trading ratios, temporal and sensory masking, aural overload, periodicity pitch, integration time and binaural fusion. Prerequisites: Sp 471 or consent of instructor.

(Change in prerequisites.)

Sp 579. Hearing Aids and Hearing Aid Evaluation. (3)

Behavioral assessment of human responses to hearing aid amplification. Subjective and objective methods for determining appropriate forms of amplification and earmold fitting among hearing handicapped individuals are evaluated, and the electroacoustic components of amplifying systems and prostheses. Class demonstration clinics and guest lectures.

Prerequisite: Sp 488. Requires concurrent enrollment in Sp 579L.

(Change in prerequisites and requires concurrent enrollment in Sp 579L.)

GENERAL STUDIES: Arts & Letters, Science, Social Science

Change in Old Course

Linguistics

- Ling 199A. Special Studies. Credit to be arranged.
This course is offered for Anthropology credit only.
- Ling 199E. Special Studies. Credit to be arranged.
This course is offered for English credit only.
- Ling 199F. Special Studies. Credit to be arranged.
This course is offered for Foreign Language credit only.
(Formerly Ling 199. Addition of letter suffixes and addition of credit clarification phrase.)
- Ling 399A. Special Studies. Credit to be arranged.
This course is offered for Anthropology credit only.
- Ling 399E. Special Studies. Credit to be arranged.
This course is offered for English credit only.
- Ling 399F. Special Studies. Credit to be arranged.
This course is offered for Foreign Language credit only.
(Formerly Ling 399. Addition of letter suffixes and addition of credit clarification phrase.)
- Ling 401A. Research. Credit to be arranged.
This course is offered for Anthropology credit only.
- Ling 401E. Research. Credit to be arranged.
This course is offered for English credit only.
- Ling 401F. Research. Credit to be arranged.
This course is offered for Foreign Language credit only.
(Formerly Ling 401. Addition of letter suffixes and addition of credit clarification phrase.)
- Ling 405A. Reading and Conference. Credit to be arranged.
This course is offered for Anthropology credit only.
- Ling 405E. Reading and Conference. Credit to be arranged.
This course is offered for English credit only.
- Ling 405F. Reading and Conference. Credit to be arranged.
This course is offered for Foreign Language credit only.
(Formerly Ling 405. Addition of letter suffixes and addition of credit clarification phrase.)
- Ling 407A. Seminar. Credit to be arranged.
This course is offered for Anthropology credit only.
- Ling 407E. Seminar. Credit to be arranged.
This course is offered for English credit only.
- Ling 407F. Seminar. Credit to be arranged.
This course is offered for Foreign Language credit only.
(Formerly Ling 407. Addition of letter suffixes and addition of credit clarification phrase.)
- Ling 410A. Selected Topics. Credit to be arranged. (Grad)
This course is offered for Anthropology credit only.
- Ling 410E. Selected Topics. Credit to be arranged. (Grad)
This course is offered for English credit only.
- Ling 410F. Selected Topics. Credit to be arranged. (Grad)
This course is offered for Foreign Language credit only.
(Formerly Ling 410. Add graduate option, addition of letter suffixes and addition of credit clarification phrase.)

- Ling 507A. Seminar. Credit to be arranged.
This course is offered for Anthropology credit only.
- Ling 507E. Seminar. Credit to be arranged.
This course is offered for English credit only.
- Ling 507F. Seminar. Credit to be arranged.
This course is offered for Foreign Language credit only.
(Formerly Ling 507. Addition of letter suffixes and addition of credit clarification phrase.)

SCHOOL OF BUSINESS ADMINISTRATION

MANAGEMENT

New Courses

- ISQA 409. Practicum in Information Systems and Quantitative Analysis. (3)
This course requires the student to work with a community organization in performing an information systems/quantitative analysis feasibility study. The study may include a current systems analysis, design of the new system, personnel development or training requirements, hardware and/or software recommendations, and assistance in system documentation.
Prerequisites: ISQA 421 and consent of instructor.
- ISQA 421. Information Systems Design. (3)
This course examines organizational information flows, data bases, alternative processing systems, and system considerations including equipment, software, procedures and personnel. Feasibility studies and the system development life cycle are discussed. Business software packages and organizational case studies are reviewed. Prerequisite: ISQA 335.
- ISQA 422. Major Applications of MIS/DSS. (3)
Advanced information systems applications are discussed. These include office automation, local area networks, telecommunications, electronic mail, new hardware and software technologies, and shared data bases. Computer application case studies are reviewed and analyzed.
Prerequisite: ISQA 421.
- ISQA 423. Advanced Computer Methods and Models. (3)
Current productivity and functional software tools for financial modeling, project scheduling, operations research, statistics, and accounting are analyzed in this course. These topical areas will be covered with emphasis on the use of desktop computers in decision making and increasing productivity in a variety of business disciplines. Prerequisite: ISQA 421.
- ISQA 435. Business Research Design and Analysis. (3)
This course is concerned with the application of multivariate methods of data analysis in business research. Emphasis is on the process of business data analysis including research design, implementation, and hypothesis testing. Prerequisite: ISQA 461.
- ISQA 463. Mathematical Modeling in Decision Making. (3)
The incorporation of numerical considerations and applied mathematics into the modeling process is the primary focus of this course. Students will gain practice in creative and empirical model construction, model analysis and model research for practical and realistic problems. The emphasis is on the importance of the assumptions in a model and on testing the sensitivity and appropriateness of assumptions against empirical data.
Prerequisite: ISQA 461.

Changes in Old Courses

Change in prefixes:

BA 335 to ISQA 335
BA 344, 345 to ISQA 344, 345
Mgmt 111 to ISQA 111
Mgmt 329 to ISQA 329
Mgmt 459 to ISQA 459
Mgmt 461 to ISQA 461
Mgmt 462 to ISQA 462

Mgmt 363. Organizational Behavior. (3)
(Formerly Mgmt 346. Change in number.)

ISQA 429. Materials Decision Systems. (3) grad
(Formerly Mgmt 429. Materials Management. Change in prefix and title.)

ISQA 439. Purchasing Systems. (3) grad
(Formerly Mgmt 439. Purchasing. Change in prefix and title.)

ISQA 449. Capacity Planning and Analysis. (3) grad
(Formerly Mgmt 449. Capacity Management. Change in prefix and title.)

ISQA 469. Productivity Analysis. (3) grad
(Formerly Mgmt 469. Productivity Management. Change in prefix and title.)

MARKETING

Change in Old Course

Mktg 565. Cases in Marketing Management. (3)
Course provides the student with a firm understanding of marketing problems and analysis from the perspective of the marketing manager. The course involves detailed analysis of marketing environments and the design and implementation of marketing systems. The student will develop proficiency in case analysis and presentation. Prerequisites: Mktg 536, FinL 535.
(Change in prerequisites.)

SCHOOL OF EDUCATION

SPECIAL STUDIES

New Courses

Coun 580. Using Tests in Counseling. (3)
The course is a graduate level introduction to testing. It offers the student the option of test usage in the counseling process and introduces issues related to such usage. In addition, the course acquaints the student, through hands-on experience, with test taking, scoring, norming, profiling and interpreting. Prerequisite: Coun 485.

Coun 590. Multicultural Perspectives in Counseling. (3)

A study of the human, ecological and societal forces influencing the provision of counseling services to culturally diverse students and other clients in educational and community settings. Current issues, problems and trends will be examined. Increased competence in individual and group counseling strategies and techniques will be emphasized, using didactic and experiential approaches. Prerequisite: Coun 485.

Change in Old Course

Coun 485. Introduction to Counseling. (3) grad

The need for counseling services in schools; tests, inventories, questionnaires and records; the role of the home and the community in counseling; individual and group counseling; consultation; career counseling; orientation to professional groups, ethics, and current issues and trends. Prerequisite: completion of 135 credits.

(Formerly Principles and Practices of Guidance Services. Change in title and description.)

Old Course Dropped

SpEd 468. Diagnostic and Remedial Techniques in the Basic Skills. (3) grad

SCHOOL OF ENGINEERING AND APPLIED SCIENCE

CIVIL ENGINEERING

New Courses

CE 442. In situ Behavior and Testing of Soils. (3)

Introduction to field behavior of soils related to engineering properties; site investigation procedures and in situ testing. Development of fundamental analytical solution techniques for engineering with soil, the use and limitations of elasticity assumptions. Two lectures, one 3-hour laboratory period. Prerequisite: CE 441.

Changes in Old Courses

CE 441. Soil Classification and Properties. (3)

(Formerly Soil Mechanics. Change in title.)

CE 444. Geotechnical Design. (3)

Effect of soil conditions upon the behavior and choice of type of foundation; study of earth pressure theories; design of foundations and earth-retaining structures. Prerequisite: CE 442.

(Formerly Foundation Engineering. Change in title and prerequisite.)

CE 547. Earth Dams. (3)

Design, construction, and operation of earth and earth-rock dams; seepage analysis, slope stability, and construction procedures. Emphasis includes both the design of new structures and the evaluation of safety of existing facilities. Prerequisite: CE 442.

(Formerly CE 447. Change in number and prerequisite.)

CE 561. Water Resource Systems Analysis. (3)

A development of quantitative techniques used in the analysis of water resource systems for planning, design and operation. Emphasis is placed on the investigation of physical, legal and economic aspects into simulation models. Applications will include reservoir systems for water supply and hydropower, irrigation planning and operation, and water quality management.

Prerequisite: CE 464 or equivalent, or consent of instructor.

(Formerly Water Resource Systems. Change in title and description.)

COMPUTER SCIENCE

Changes in Old Courses

CS 355, 356. Algorithmic Languages and Compiler Design. (4,4)

Introduction to formal language theory and to the theory and practice of constructing translators for these languages. Emphasis on context-free languages and synthetic analysis. Students will construct a compiler for a suitable subset of a known high-level language. Three lectures; one 2-hour project design laboratory. Prerequisites: CS 245 and CS 311 or equivalent.

(Change in credit hours from (3,3) to (4,4), prerequisites, and addition of laboratory hours.)

CS 431, 432. Operating Systems (4,4) grad

This course will cover the fundamental elements of operating systems and implementation of the concepts. Case studies and projects will reinforce the principles. Three lectures; one 2-hour project design laboratory.

Prerequisite: CS 330 or equivalent.

(Change in credit hours from (3,3) to (4,4) and addition of laboratory hours.)

ELECTRICAL ENGINEERING

New Courses

EE 372. Microcomputer Systems. (4)

This course covers the fundamentals of microprocessor architecture, software development and hardware interfacing. Emphasis is placed on eight bit microprocessor systems. Machine and assembly language programming, applications of microprocessors in controls, microprocessor systems design, and memory and I/O interfacing are among the topics studied. Laboratory work includes several software and hardware development projects. Three lectures; one 3-hour laboratory period. Prerequisite: EE 371.

EE 425. Digital Integrated Circuit Analysis and Design. (4) grad

Senior level students in electrical and computer engineering are introduced to the analysis and design of digital integrated circuits. The coursework is supplemented by three hour laboratory assignments.

Prerequisites: EE 323 and EE 411.

EE 426. Computer Aided VLSI Digital System Design. (4) grad
Students are instructed in the use of computer aided design tools for the design and testing of large scale integrated digital circuits. A significant design project is required as part of this course.
Prerequisite: EE 425.

EE 431, 432. Laser and Electromagnetic Systems I, II. (4, 4) grad
Laser topics stress the design and application of lasers. These include ray and beam optics and their application to communication systems and laser oscillators. The design of light amplifiers and optical systems such as interferometers and heterodyne detectors will be studied. Electromagnetic topics include in-depth study of transmission lines, waveguides, linear antennas and phased antenna arrays. A significant design component will be included in both courses. Prerequisite: EE 331.

EE 570, 571. Switching Circuits and Systems. (4,4)
Graduate students in electrical and computer engineering are introduced to the design of logic circuits and machines, sequential and asynchronous circuits. A significant design project of a finite state machine is undertaken in the second term. Prerequisite: graduate standing in electrical engineering.

Changes in Old Courses

EE 270. Logic Circuits and Systems. (4)
As a second course in digital circuits and systems, the course covers flip flops, shift registers and counters, analysis and synthesis of synchronous and asynchronous sequential circuits and iterative networks. Three lectures; one 3-hour laboratory period. Prerequisite: EE 170.
(Change in lecture hours and addition of laboratory hours.)

EE 321. Electronics I. (4)
Introduction to the physical properties and characteristics of solid state electronic devices. Analysis and design of bipolar junction and field-effect transistor circuits. Application of a computer aided design (CAD) tool such as SPICE. Three lectures; one 3-hour laboratory period. Prerequisite: EE 250.
(Formerly Electronic Devices. Change in title, description, and prerequisite.)

EE 322. Electronics II. (4)
Study of digital circuits used in various logic families. Analysis of electronic amplifiers using small-signal models of electronic devices. Introduction to feedback amplifier analysis and design. Review of transfer function and Bode analysis. Computer aided design. Three lectures; one 3-hour laboratory period. Prerequisite: EE 321.
(Formerly Electronic Circuits. Change in title and description.)

- EE 323. Electronics III. (4)
Introduction to differential and operational amplifier circuits. Study of operational amplifier design techniques involving current mirrors and active loads. Design and analyze active filters, waveform generators, and large-signal electronic amplifiers. Computer aided design. Three lectures; one 3-hour laboratory period. Prerequisite: EE 322.
(Formerly Electronic Amplifiers. Change in title and description.)
- EE 341. Electrical Machinery I. (3)
(Change in credit hours from (4) to (3).)
- EE 342. Electrical Machinery II. (4)
(Change in credit hours from (3) to (4).)
- EE 421, 422. Analog Integrated Circuit Analysis and Design. (4,4) grad
IC modeling; MOS technology, design and test of IC amplifiers; stability and noise in IC circuits. CAD tools for circuit design and testing. Three lectures; one 3-hour laboratory period. Prerequisites: EE 323 and EE 411.
(Formerly EE 421, 422, 423. Advanced Electronics. Change in title, description, prerequisites and division of sequence.)
- EE 471, 472. Microprocessor System Design. (4,4) grad
Introduction to microprocessor technology. Hardware requirements, software fundamentals, computer aids to software design, intermediate software design and introduction to hardware design. Courses must be taken in sequence. Three lectures; three hours of laboratory.
Prerequisite: EE 372 or consent of instructor.
(Formerly EE 471, 472, 473. Change in description, prerequisites, division of sequence, and addition of grad option.)
- EE 511. Quantum Electronics. (4)
Linear and nonlinear optics, propagation of Gaussian beams, optical cavities, electro-optic and magneto-optic effects, modulation, optical networks. Prerequisite: EE 530 and EE 411.
(Change in credit hours from (3) to (4) and prerequisites.)
- EE 512. Advanced Topics in Solid State Devices. (4)
(Change in credit hours from (3) to (4).)
- EE 520, 521, 522. Electronics and Electronic Systems I, II, III. (4,4,4)
Network analysis and synthesis, VLSI design techniques and methodology, testing of VLSI circuits. Prerequisites: EE 422 or equivalent.
(Change in credit hours from (3,3,3) to (4,4,4) and prerequisites.)
- EE 530, 531. Electromagnetics I, II. (4,4)
(Change in credit hours from (3,3) to (4,4).)
- EE 532. Laser Systems. (4)
Laser principles, gain and saturation, power characteristics, transient phenomena including ultrashort pulses and instabilities, mirrorless lasers, specific laser systems. Prerequisite: EE 530 or equivalent.
(Change in description, credit hours from (3) to (4), and prerequisite.)

EE 541. Energy Systems Analysis. (4)

Equivalent circuits for transmission lines and transformers. Graph theory and representation of the electrical network including bus admittance and impedance matrices. Model transformation, symmetrical components and sequence networks. Fault calculation with fault admittance and impedance matrices. Power flow calculations using Gauss Seidel, Newton Raphson and Fast Decoupled Methods. Introduction to stability studies. Prerequisite: EE 442 or equivalent.

(Change in credit hours from (3) to (4), and prerequisite.)

EE 542. Energy System Dynamics and Control. (4)

(Change in credit hours from (3) to (4).)

EE 543. Energy Control Center Design. (4)

(Change in credit hours from (3) to (4).)

EE 550, 551, 552. Modern Feedback Control Systems I, II, III. (4,4,4)

(Change in credit hours from (3,3,3) to (4,4,4).)

EE 560. Signals and Noise. (4)

(Change in credit hours from (3) to (4).)

EE 561. Advanced Signal Processing. (4)

(Change in credit hours from (3) to (4).)

EE 562. Advanced Communication Theory. (4)

(Change in credit hours from (3) to (4).)

EE 575. Computer Memory Systems. (4)

Advanced topics in the operation, design and testing of memory systems are discussed. One third of the course is devoted to the discussion of memory organizational strategies and hierarchies. Prerequisite: EE 472 or equivalent.

(Change in credit hours from (3) to (4) and prerequisite.)

EE 576, 577. Computer Architecture. (4,4)

(Change in credit hours from (3,3) to (4,4).)

EE 580. Computational and Research Tools in Electrical Engineering. (4)

(Change in credit hours from (3) to (4).)

EE 581. Computational Methods in Electrical Engineering. (4)

(Change in credit hours from (3) to (4).)

EE 582. Interactive Computer Graphics. (4)

An introduction to the principles of interactive computer graphics including logical devices, physical devices, transformation, viewing and clipping in two and three dimensions. Prerequisite: EE 580.

(Change in credit hours from (3) to (4), and prerequisite.)

Old Courses Dropped

- EE 423. Advanced Electronics. (4) grad
- EE 443. Electrical Energy Systems III. (4) grad
- EE 473. Microprocessor System Design. (4)

MECHANICAL ENGINEERING

New Courses

- ME 431. Fluid Control Systems. (3) grad
Air and air flow in devices and systems; air sensors; pneumatic and fluidic devices; application of Boolean algebra in digital control circuit design; special design methods; cybergram and state diagram methods. Prerequisite: senior standing in mechanical engineering or consent of instructor.
- ME 434. Industrial Fluid Power. (3) grad
Fluid power circuits: constant flow, demand flow, pressure control and directional control; hydrostatic transmission and hydraulic servos; heat generation and control, hydraulic oil and filtration; components selection and trouble shooting the hydraulic systems. Prerequisite: senior standing in mechanical engineering or consent of instructor.
- ME 454. Fixed Automation. (3) grad
Tooling for automated fixed manufacturing, sensors, actuators, controls, programmable controllers, related aspects of facility layout, production control and economics. Comprehensive design project required.
Prerequisite: ME 491 (ME 481 desirable).
- ME 456. Flexible Automation. (3) grad
Basics of the new wave of automation - generally known as flexible automation. Robotic programming and integration with ancillary systems including optical sensing, tactile feedback and vision, various support devices now being used in flexible automation for orientation, feeding, inspecting, and processing, mechanical as well as electronic communication and integration of flexible automation systems to current processes. CAM, CIM with SAS integration. Prerequisite: ME 492 (ME 454 desirable).
- ME 486. Methods of Analysis and Work Measurement in Industrial Engineering. (3) grad
A systematic approach to the analysis and improvement of all aspects of a work operation. Techniques include methods in engineering approach, questioning attitude, motion economy, act breakdown, allowances and ratings, time study and the use of predetermined time systems.
Prerequisite: upper division standing in mechanical engineering or consent of instructor.

ME 552. Computers in Mechanical Engineering. (3)

Role of computers in mechanical engineering, current practice and future trends towards computerized design and manufacturing. Topics include geometric solid modeling, the integrated mechanisms program, finite elements, and expert systems. Student projects are required.

Prerequisites: ME 451 or consent of instructor.

ME 553. Digital Control Systems. (3)

Mathematical foundations, state-space formulation, stability, frequency response, time domain analysis of discrete- and sampled-data systems.

Applications of digital implementation of controllers and the use of programmable controllers are covered. Prerequisite: ME 452 or equivalent.

Changes in Old Courses

ME 311. Advanced Dynamics. (3)

Advanced topics in dynamics: Euler equations applications; dynamic balancing; gyroscopic motion, elements of generalized dynamics; Lagrange equations; introductory vibrations, single degree of freedom systems. Upper division standing. Prerequisites: EAS 215 and Mth 321.

(Change in prerequisites.)

ME 312. Stress Analysis of Mechanical Components. (3)

Review of stress analysis for axial, bending, torsional and shearing loads. To include unsymmetric loading and geometry, thermal loads and indeterminate problems. Energy methods as a general method of analysis and as applied to failure theories and numerical analysis techniques.

Prerequisites: EAS 212, Mth 321 concurrently.

(Change in prerequisites.)

ME 422. Solar Heating Design. (3) grad

Introduction to design of active and passive systems utilizing solar energy for space and water heating in buildings. Emphasis on energy efficient building design and passive solar heating design methodologies. Heat loss and gain in buildings, load calculations, "quick and dirty" design procedures, detailed calculation procedures, computer simulation techniques, and economics of solar heating. Project in design/simulation. Prerequisites: ME 323, ME 421, and familiarity with use of microcomputers.

(Change in prerequisites.)

SCHOOL OF PERFORMING ARTS

DANCE

New Courses

D 235. Conditioning and Body Therapies for Dance. (3)

The study and practical application of concepts of correct alignment and muscle use in dance technique; a survey of body therapy techniques as they apply to dance.

- D 350. Dance Improvisation/Rhythms. (3)
Introduction to improvisational forms of American contemporary dance and African and Latin American rhythms.
- D 450. Creative Dance for Children. (3)
Exploration and evaluation of dance for children. The understanding of the value of creative movement exploration in child development. Methods, materials and activities contributing to children's original expression.
- D 455. Advance Dance Production. (Credit to be arranged.)
Instruction and experience in dance production including lighting and set design and contemporary technical innovations. Prerequisite: D 451 or consent of instructor.

Changes in Old Courses

- D 351. Dance Composition. (3)
Exploration of the basic elements of dance composition through readings, observation and preparation of solo dance studies. Prerequisite: D 350.
(Change in prerequisite.)
- D 452. Dance History - Overview. (3)
Introduction to the form and function of dance in relation to other aspects of culture in selected societies throughout the world and during the period of European and American recorded history. Emphasis on 20th Century theatrical dance. Prerequisite: junior standing or consent of instructor.
(Formerly Dance History - Current Trends. Change in title and description.)
- D 493. Dance Aesthetics. (3)
The study of the philosophy of dance as an art form. Prerequisite: D 452.
(Change in prerequisite.)

Old Course Dropped

- D 350. Jazz Choreography. (3)

THEATER ARTS

New Courses

- TA 326. Pattern Development. (2)
A study and practical application of the methods for creating patterns for theatrical costumes, including flat drafting, draping, and period pattern adaptation. Prerequisites: TA 321, 325 or consent of instructor.

TA 327. Costume Technology. (2)

A study and practical application of methods of costume craft and decorative techniques, including fabric dyeing and painting, properties fabrication and jewelry construction. Prerequisite: TA 321 or consent of instructor. Maximum: 6 credits.

Changes in Old Courses

TA 111. Theater Appreciation. (3)

(Formerly Introduction to Theater. Change in title.)'

TA 321. Fundamental State Costuming. (4)

An introduction to the theory, techniques, and design principles of contemporary stage costume. The course includes three lectures and a two hour laboratory period per week.

(Change in description, lecture hours from (4) to (3), and addition of laboratory hours.)

TA 325. Costume Construction. (2)

(Change in credit hours from (3) to (2).)

TA 412. Stage Lighting. (3) grad

Study of the history and practice in lighting theater productions together with considerations of contemporary technical innovations in the field. Special work required for graduate credit. Prerequisites: TA 213 and TA 315.

(Change in prerequisites.)

TA 464, 465, 466. Development of Dramatic Literature. (3,3,3) grad

(Formerly Development of Dramatic Art. Change in title.)

Old Course Dropped

TA 307. Children's Theater. (3)

SCHOOL OF URBAN AND PUBLIC AFFAIRS

PUBLIC ADMINISTRATION

New Courses

PA 535. Administrative Law and Regulation. (3)

The constitutional basis for administrative law; the Administrative Procedures Act; promulgating regulations--notice, hearings and reasoning processes; practical problems in rule making; administrative adjudication--discovery, hearings, and decisions; informal administrative decisions--fairness vs. efficiency; technical law--jurisdiction, standing, rightness, court procedures; designing administrative procedures to reach good decisions quickly with reasonable resources; freedom of information; current administrative law problems.

PA 557. Operations Research. (3)

This course addresses the need for today's public administrators to have some understanding of the increasingly important tools of management science and operations research. It has no prerequisite: quantitative or technical background is not required. A variety of topics will be covered, with some flexibility in choice of topics according to students' interest. Topics include: linear programming, queueing, simulation, decision analysis, forecasting, PERT/CPM, inventory analysis, and replacement analysis.

URBAN STUDIES AND PLANNING

Changes in Old Courses

USP 426. Neighborhood Conservation and Change. (3) grad

The dynamics of neighborhood development, including economic and institutional factors in neighborhood change; neighborhood definition and image, residential choice; residential segregation; neighborhoods in the political process; and neighborhood conservation strategies.

Prerequisite: junior standing.

(Formerly Neighborhood Preservation and Rehabilitation. Change in title and description.)

USP 442. Community Development Practice. (3) grad

The process of implementing community development strategies in established neighborhoods. Topics include federal, state, and local community development strategies and policies; monitoring neighborhood change; housing, infrastructure, and economic development programs; the roles of professionals, organizations, and citizens as change agents.

Prerequisite: consent of instructor (USP441 recommended).

(Formerly Community Development: Principles and Practice. Change in title and description.)

SUMMARY - 1986-87 PROPOSED CHANGES IN EXISTING PROGRAMS

COLLEGE OF LIBERAL ARTS AND SCIENCES

- A. The Department of Chemistry proposes to adjust the requirements for its BA/BS degree by realigning freshmen chemistry courses. Well-prepared chemistry majors will be encouraged to enroll in Ch 207,8,9, University Chemistry (3,3,3: 9 cr) rather than Ch 204,5,6, General Chemistry (4,4,3: 11 cr).
- B. The Department of Speech Communication proposes modest revisions to its BA/BS degree: (1) requiring all major courses be taken for a grade and (2) reducing the number of credits required for the General Speech Concentration from 40 to 37. Credits required for the degree are reduced from 52 to 49.

SCHOOL OF BUSINESS ADMINISTRATION

- A. The Department of Management proposes to add a fourth option for its BA/BS degree, Information Systems and Quantitative Analysis, and to change the prefix and course titles required for the existing Operations and Materials Management Option. The new option, like the others offered by the department, will require 15 credits of designated courses using the prefix ISQA. The new option will allow students to select courses clearly related to their academic interests and career needs. Courses in the Operations and Materials Management option will also use the ISQA prefix. New course titles will bring consistency to groups of similar courses within the School.

SCHOOL OF ENGINEERING AND APPLIED SCIENCE

- A. The Department of Civil Engineering proposes to modify its BA/BS degree by requiring one additional 3 credit course and changing the content in two other 3 credit courses in order to strengthen students' training in geotechnical engineering (soil testing, site investigation, ground monitoring, etc).
- B. The Department of Electrical Engineering proposes alteration of its BA/BS degree in Computer Engineering to provide a larger number of electives in computer science courses in order to conform to the IEEE Computer Society's Model Curriculum for Computer Engineering Programs.
- C. For the BA/BS in Electrical Engineering, the Department of Electrical Engineering proposes to change electrical engineering course electives in the junior and senior years in order to provide flexibility.
- D. The Department of Mechanical Engineering requests approval to strengthen its coverage and strength in design areas of the BA/BS degree program by adding discretely numbered courses dealing with various design topics as elective courses counting towards the degree.

- E. The School proposes to change the names of its MA/MS degree programs as follows: MA/MS in Engineering-Civil to MA/MS in Civil Engineering; MA/MS in Engineering-Electrical and Computer to MA/MS in Electrical and Computer Engineering; MA/MS in Engineering-Mechanical to MA/MS in Mechanical Engineering. The changes will properly identify existing graduate programs, a fact valuable to students and to the professional community.
- F. The Department of Electrical Engineering proposes minor changes to the MA/MS degree in Electrical and Computer Engineering: students will be required to complete one complete course sequence plus EE 580 (Computation and Research Tools in EE) but will no longer be required to take EE 581 and EE 582 or at least three common core courses.

SCHOOL OF PERFORMING ARTS

- A. The Department of Dance proposes to change the requirements for its Certificate program by adding D 297 (Dance Laboratory II) and D 350 (Improvisation/Rhythms) and deleting PE 394, PE 395, and D 409. The total number of credits required (49) is unchanged. The changes will meet specific needs of prospective dancer/teachers in the field of contemporary dance.