

**220B. Independent Study in Science and Culture**  
(320B.) Fall, Winter, Spring. 1 credit.  
May re-enroll for a maximum of 3 credits if different topics are taken.  
Independent study in science and culture.

**221A. Studies in Science**  
(321A.) Fall, Winter, Spring. 3(3-0) or 4(3-0) May re-enroll for a maximum of 12 credits if different topics are taken.  
Studies in selected topics and areas of the natural sciences.

**221B. Independent Study in Studies in Science**  
(321B.) Fall, Winter, Spring. 1 credit.  
May re-enroll for a maximum of 3 credits if different topics are taken.  
Independent study in topics or areas of the natural sciences.

**229A. Interdisciplinary Studies in Natural Science**  
Fall, Winter, Spring. 3(3-0) or 4(3-0)  
May re-enroll for a maximum of 8 credits if different topic is taken.  
Special interdisciplinary studies related to the natural sciences.

**229B. Independent Study in Interdisciplinary Studies in Natural Science**  
Fall, Winter, Spring. 1 to 4 credits.  
May re-enroll for a maximum of 8 credits if different topic is taken.  
Independent interdisciplinary study related to the natural sciences.

**329A. Interdisciplinary Studies in the Natural Sciences**  
Fall, Winter, Spring. 3(3-0) or 4(3-0)  
May re-enroll for a maximum of 8 credits. Juniors or approval of college.  
Study of a theme or topic from the perspectives of at least two disciplines.

**329B. Interdisciplinary Independent Study in the Natural Sciences**  
Fall, Winter, Spring. 1 to 4 credits.  
May re-enroll for a maximum of 8 credits. Juniors or approval of college.  
Independent study of a theme or topic from the perspectives of at least two disciplines.

### **Inquiry and Expression**

**100. Inquiry and Expression—Expository Writing I**  
Fall. 4(4-0)  
Trains students to write competent term papers, reports and essay examinations. Subject focuses on some significant social or personal problem with a background of information furnished through lectures, films, reading and discussion.

**101. Inquiry and Expression—Expository Writing II**  
Winter, Spring. 4(4-0) 100.  
Continuation of 100 with a different topic and more sophisticated elements of style; sometimes allows more freedom of form.

**102. Inquiry and Expression—Individual Writing Projects**  
Winter, Spring. 2(2-0) or 4(4-0) Completion of one University writing course.  
Lectures, films, readings, and group discussion. Writing assignments adapted to the individual student; personal essays, verse, fiction, or special types of exposition.

**103. Experiments in Expression**  
Winter, Spring. 2(2-0) or 4(4-0)  
Opportunity for a variety of forms of expression in response to lectures, films, and readings. Requires written work but includes experimentation in small groups with media such as audio and video tapes, photography, and various art forms.

### **Independent, Field, and Foreign Study**

**400A. Independent Study**  
Fall, Winter, Spring, Summer. 2 to 12 credits. Approval of college.  
Study in a selected number of ways on a selected number of topics under the guidance of the student's adviser.

**400B. Field Study**  
Fall, Winter, Spring, Summer. 4 to 15 credits. May re-enroll for a maximum of 27 credits. Approval of college.  
Study in off-campus situations in a variety of ways using involvement in community service, government, or business as means to cultural insight.

**400C. Foreign Study**  
Fall, Winter, Spring, Summer. 4 to 15 credits. May re-enroll for a maximum of 27 credits. Approval of college.  
Study abroad in a variety of places under the guidance of an adviser.

### **Other JMC Courses**

**190A. Approaches to a Life of Inquiry**  
Fall. 4(5 0) 190B concurrently.  
Emphasizes writing and other communications skills, and problem analysis. Writing topics will be suggested by issues covered in 190B sections.

**190B. Approaches to a Life of Inquiry**  
Fall. 4(3-0) 190A concurrently.  
Approaches to particular contemporary problems and issues through analysis and application of problem-solving techniques. Each section will focus on a separate problem area.

**191A. Approaches to a Life of Inquiry**  
Winter, Spring. 4(5-0) 190A and B, or approval of college. 191B concurrently.  
Emphasizes writing skills and personal values. Students will discuss and write about the values presented in films and selected writings, and examine processes of value clarification.

**191B. Approaches to a Life of Inquiry**  
Winter, Spring. 4(3-0) 190A and B, or approval of college. 191A concurrently.  
Emphasis on personal and societal values as approached through a selected disciplinary topic. Each selection will focus on a separate topic.

**192A. Approaches to a Life of Inquiry**  
Winter, Spring. 2(2-0) 190A and B, or approval of college. 192B concurrently.  
Emphasis on group skills and analysis, but with continued development of writing skills.

**192B. Approaches to a Life of Inquiry**  
Winter, Spring. 4(3-0) 190A and B, or approval of college. 192A concurrently.  
Approach to a disciplinary topic using group work as the primary learning mode. Each section will deal with a different topic.

**241. Creative Problem Solving**  
Winter. 3(3-0)  
Practice approach to problems through steps of problem identification, "brainstorming", evaluating ideas, and trying solutions, for the purpose of facilitating the creative process and developing autonomous learners.

**389A. Interdisciplinary Special Topics**  
Fall, Winter, Spring. 3(3-0) or 4(3-0)  
May re-enroll for a maximum of 8 credits if different topic is taken.  
Special studies relating material from several disciplines.

**389B. Independent Study in Interdisciplinary Special Topics**  
Fall, Winter, Spring. 1 to 4 credits.  
May re-enroll for a maximum of 8 credits.  
Independent study of topics relating material from several disciplines.

**410. Studies in Composition**  
Fall, Winter, Spring. 4 to 8 credits.  
103.  
Intensive individual and seminar instruction in advanced composition.

**497. Senior Project**  
Fall, Winter, Spring. 3 to 5 credits.  
Seniors.  
Project stressing integration and synthesis of a student's field of concentration under the guidance of the student's adviser.

**498. Senior Thesis**  
Fall, Winter, Spring. 3 to 5 credits.  
Seniors.  
Thesis stressing integration and synthesis of a student's field of concentration under the supervision of a faculty member.

**499. Senior Seminar**  
Fall, Winter, Spring. 3 credits. Seniors.  
Seminar on selected topics, stressing synthesis and integration of student's area of concentration.

## **LABOR AND INDUSTRIAL RELATIONS** LIR

**College of Social Science**

**801. Labor in Twentieth Century America**  
Fall, Winter. 4(3-0) EC 305 or approval of school.  
Review of the history of American labor and its evolving structure and an analysis of current problems facing unions.

**Descriptions — Labor and Industrial Relations of Courses**

**IDC. Seminar in Industrial Relations**  
For course description, see Interdisciplinary Courses.

**809. Labor Markets**  
Fall, Winter. 4(4-0) Approval of school.

Review of labor market structures and processes; forces affecting work and wages; and public policy on manpower development and utilization and on income maintenance.

**811. Manpower Programs and Institutions**  
Winter. 4(4-0) EC 457.

Role and effectiveness of the public employment service, vocational and apprenticeship programs, retraining and vocational rehabilitation activities, etc., as instruments of an active manpower policy.

**813. Income Maintenance Programs**  
Fall. 4(3-0) Approval of school.

Causes and social consequences of poverty. Nature and effectiveness of income transfer programs against poverty and insecurity. Integration with manpower programs. Relation between public and private programs.

**815. Labor Force Behavior**

Spring. 4(4-0) EC 457. Interdepartmental with the Department of Economics.

Theoretical and empirical analysis of factors affecting labor force participation rates, unemployment levels, employment distribution, hours of work, and labor mobility. Concepts and measurement methods.

**817. Methods of Program Evaluation**  
Winter. 4(3-0) Approval of school.

Principles of benefit-cost analysis, cost-effectiveness analysis, and other methods of evaluation applicable to human resource programs.

**823. Organizational Behavior in Labor and Industrial Relations**

Fall. 4(4-0) Approval of school. Interdepartmental with the Sociology Department.

Analysis of why organizations, individuals and groups in unions, management and government act as they do in industrial relations situations with emphasis on sociological, psychological and cultural factors.

**824. Employment Relations**

Fall, Winter. 4(3-0) Approval of school.

A social system approach to employment relations and employee utilization in private and public organizations.

**825. Employee Compensation and Incentives**

Spring. 4(3-0) MGT 810 or approval of school.

Theory and practice of payment systems in private and public employment. Compensation and motivation. Job evaluation and performance review. Incentive plans, executive compensation, and fringe benefits.

**826. Organizational Development**

Spring. 4(4-0) Approval of school.

Application of general systems and organizational behavior theories to the problems of organizational change and development in labor and industrial relations, with particular emphasis on the roles of leadership and change agents.

**833. Data Sources and Research Methods in Labor and Industrial Relations**

Fall, Winter. 4(3-0) One undergraduate statistics course.

Review and evaluation of sources and data, analysis of research design and methods used in study of labor and industrial relations.

**841. Collective Bargaining in Public Employment**

Spring, Summer. 4(3-0) EC 305 or approval of school.

History and current status of collective bargaining practices and governmental policies in the public sector.

**854. Comparative Industrial Relations Systems**

Winter. 4(3-0) EC 305.

Comparative analysis of industrial relations systems of countries in various stages of economic development.

**857. Wage Theory**

Fall. 3 credits. EC 320, 324, or approval of department. Interdepartmental with and administered by the Economics Department.

Advanced analysis of: theories of wage determination; labor market research; economic effects of collective bargaining upon the national wage structure, output, employment, distribution of national income, the price level; nature and effects of government wage policies.

**858. Industrial Relations**

Winter. 3(3-0) EC 305 and approval of department. Open to graduate students in economics and related fields such as labor and industrial relations, psychology, sociology, anthropology, political science, business, and history. Interdepartmental with the Department of Economics.

Problems and issues in the administration and negotiation of collective bargaining agreements; includes both economic and noneconomic aspects of industrial relations policies and practices.

**863. Law of Labor-Management Relations**

Winter, Spring. 4(4-0) Approval of school.

The National Labor Relations Act as amended: rights to organize and undertake concerted activity; legal framework of contract negotiations; representation of bargaining unit members; union member rights; proposed statutory changes.

**865. Grievance Administration and Arbitration**

Winter, Spring. 4(3-0) Approval of school.

Grievance procedure and arbitration as the terminal step in the grievance process. Analysis of industrial common law.

**881. Advanced Seminar in Labor and Industrial Relations**

Spring. 4(4-0) May re-enroll for a maximum of 8 credits. Twelve graduate credits or approval of school.

Integrative and synthesizing seminar for advanced students; intensive analysis of selected problems in labor and industrial relations.

**895. Readings in Labor and Industrial Relations**

Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 8 credits. Approval of school.

**899. Research in Labor and Industrial Relations**

Fall, Winter, Spring, Summer. Variable credit. May re-enroll for a maximum of 9 credits. Approval of school.

**901. Seminar in Trade Union Behavior**  
Fall. 4(4-0) 801 or approval of school.

Research and policy analysis of selected problems of trade union behavior.

**911. Seminar in Manpower**

Fall. 4(3-0) Approval of school.

Critical study of research and policy on selected manpower problems.

**923. Seminar in Organizational Behavior**

Spring. 4(4-0) Approval of school.

Research and policy on selected problems of organizational behavior in labor and industrial relations.

**958. Seminar in Collective Bargaining**  
Spring. 4(3-0) EC 858 or approval of school.

Critical study of selected contemporary areas and issues in collective bargaining.

## LANDSCAPE ARCHITECTURE

See Urban Planning and Landscape Architecture

## LARGE ANIMAL SURGERY AND MEDICINE

LSM

### College of Veterinary Medicine

**412. Livestock Hygiene and Disease Control**

Winter. 3(3-0) Juniors; Agriculture majors.

Fundamentals of health and disease in animals, relation of infectious and parasitic diseases of animals to human health, disease prevention and role of veterinarian in preventive medicine.

**IDC. The Impact of Animal Resource Management Upon the World's Developing Nations**

For course description, see Interdisciplinary Courses.

**601. Large Animal Clinic I**

Fall, Winter, Spring, Summer. 6(0-18) Veterinary Medicine students in terms 9, 10, or 11 electing Small Animal or Non-Practice options and approval of department.

Introductory concepts and practices in large animal clinical medicine, emphasizing diagnosis, patient care, medicine, surgery, disease prevention and herd health in a rotation through clinical services.

**602. Large Animal Clinic II**

Fall, Winter, Spring, Summer. 3(0-9) to 12(0-36) May re-enroll for a maximum of 24 credits. Veterinary Medicine students in terms 9, 10, or 11 electing the Large Animal or Mixed-Practice options and approval of department.

Concepts and practices in large animal clinical medicine—rotation through clinical services with assignment and care of clinical patients supervised by faculty and staff.