
fulfill the practicum requirement.

Pre: Admitted to clinical master's program, OR
Permission of Director of Clinical Training

692 (2) Clinical Practicum II

Extension of Practicum I. Students complete the second 150 hours of the 300 hours of supervised practice.

Pre: Admitted to clinical master's program, OR
Permission of Director of Clinical Training

694 (1-2) Alternate Plan Paper

Individualized student paper based on an extensive review of literature in some area of Psychology.

695 (2) Research in Industrial/Organizational Psychology I

Developing research proposals/projects, ethic committee review, implementing consulting projects, data collection, report writing, presentation to professional societies and submitting funding requests.

Pre: Consent

696 (2) Research in Clinical Psychology I

Students participate on laboratory teams with clinical faculty. teams develop research proposals and write ethics committee proposals. Projects include clinical field studies, survey studies and single subject intervention. Students are expected to present findings at meetings of professional associations.

Pre: Permission of instructors, Director of Clinical Training, and admission to clinical program

697 (2) Research in Industrial/Organizational Psychology II

Continuation of Research in Industrial/Organizational Psychology I.

Pre: Consent

698 (2) Research in Clinical Psychology II

Continuation of Research in Clinical Psychology I.

Pre: Permission of instructors, Director of Clinical Training, and admission to clinical program

699 (3-6) Thesis

Individualized student research paper which involves a literature review and original research.

LIBRARY MEDIA EDUCATION MS

LIBRARY MEDIA EDUCATION SP

College of Education

125 Memorial Library • 507-389-1965

Graduate Coordinator: Frank Birmingham, Ph.D.

ating, producing, organizing and using print, audiovisual, and electronic media.

Library Media Education encompasses the bibliographic control, management and use of the products of people's minds. Today's rapid expansion of knowledge is characterized by a great variety of media through which knowledge is recorded and disseminated. Now and in the future, libraries and information centers must deal with transfer of data and information in all formats. Library Media personnel must:

1. meet the information needs, ranging from recreational to research, of everyone from preschool children to senior citizens,
2. manage information needs, and
3. help students and teachers acquire skills of evaluating and using information.

The master's and specialist degrees and licensure programs met all requirements for NCATE accreditation according to standards developed by AASL and AECT.

Admission. Students must meet all graduate college requirements and have a 3.0 grade point average for the last two years of undergraduate work. Students are urged to write the chairperson for details and meet with an advisor before beginning a program. Previous teaching licensure is generally required for this degree.

Two graduate credits from courses offered by departments outside the College of Education are required. A maximum of 10 graduate credits may be transferred into a degree program from other regionally accredited colleges or universities. All transfer credits need prior approval from both the student's graduate examining committee and the College of Graduate Studies before transfer of credits can be granted.

Admission Requirements for the Specialist Degree in Library Media: This degree prepares people to serve as school library media administrators. Applicants must have competencies equal to those required for Minnesota's Media Generalist licensing. Within the specialist degree program a student may expand in-depth knowledge in a specific area.

A note about a graduate degree in library media education: Although the state of Minnesota does not require a graduate degree in media for licensure as a school library media professional, many states do require master's degrees. Additionally, *Information Power*; the national guidelines for school library media programs, recommends that the master's degree be considered the entry level degree for professionals in school library media centers. The Library Media Education department also believes that a master's degree with a strong undergraduate general education background provides the best preparation for school library media professionals.

LIBRARY MEDIA EDUCATION MS
(Alternate Plan Paper - 35 cr)

The Library Media Education Department offers instruction and experience in acquiring, administering, evalu-

The Master of Science in Library Media Education is a professional degree program that will enable the graduate to enter the library media profession fully qualified for the elementary and secondary school. It should be understood by the student applying for graduate school that graduate work is not merely a continuation of undergraduate work. Graduate work demands scholarship which is clearly at a higher level of achievement; it places greater emphasis on research and creativity; and it requires much more initiative and responsibility.

The specific objectives of the MS in Library Media are: 1) To assist students in recognizing the role which libraries and information services play in our society; 2) To develop in students an awareness of the similarities and differences among the various library specializations in their societal contribution with special emphasis upon where and how school library media fits into the whole; 3) To provide students with the skills and competencies needed to select and acquire, organize and distribute, produce and utilize library media resources, and to manage library media programs with special emphasis upon school library media resources and programs; 4) To introduce students to the principles and methodology of research and to its effective utilization; and 5) To initiate or further the development of professionalism in students.

Required Technology (8 cr)

- LME 629 Electronic Communications: (Internet/Web etc.) (2)
LME 628 Distance Learning (ITV & multimedia) (2)
LME 522 Design & Production of Learning Resources (2)
LME 643 Instructional System Development (2)
LME 624 Digital Production (2)

Required Management & Organization (7 cr)

- LME 631 School Library Media Leadership (3)
LME 541 Organization of Information (2)
LME 511 Information Resources (2)

Required Philosophy & Vision (6 cr)

- LME 635 Media Services & Learning (4)
LME 600 Information & Society (2)

Required Materials (8 cr)

- LME 512 Materials for Children (3)
LME 513 Materials for Young Adults (3)
LME 517 Evaluation and Selection (2)

Required Electives outside Education (2 cr)

Choose any 500/600 level course selected in consultation with an advisor

Required Research (3 cr)

- LME 692 Research Methods (2)
LME 694 Alternate Plan Paper (1)

The plan for this paper will be developed by the student while enrolled in LME 692, Research Methods.

Additional Requirements:

Students must complete a minimum of 50% of all graduate credit at the 600 level, and must maintain a grade point average of "B" or above in all coursework. Satisfactory completion of a comprehensive examination during the semester (or prior to) of graduation is required.

LIBRARY MEDIA SP

(30 cr)

The Library Media Specialist Degree is available for library media professionals who are seeking an advanced level of preparation as media administrators managing the human and material resources of the media program. An individual's program seeks to expand his/her competencies and/or develop in-depth specialization in a specific area. Within the Specialist program a student obtains an in-depth knowledge in a specific area; i.e., administration, materials, production. The program may or may not lead to additional certification or licensure.

Prerequisite:

Media Generalist license or competencies equal to those required for Media Generalist license.

Required Research (4 cr)

- EDFN 601, 602, or 603
LME 692 Research Methods or equivalent (2)

Required Library Media Education (minimum 8 cr)

- LME 698 Internship (2)
LME 699 Thesis (6)

Required Library Media Specialization (minimum 4 cr)

Choose a minimum of 4 credits in student's area of specialization.

Required Library Media Education or Educational Administration or Curriculum and Instruction (10 cr)

Choose courses in consultation with an advisor.

Required External Electives (minimum 3 cr)

Choose a minimum of 3 credits outside of the College of Education.

General Requirements:

A preliminary oral exam, a final comprehensive exam, and an oral thesis defense.

MEDIA GENERALIST LICENSURE

(31 cr)

A media generalist is a teacher who is qualified to work at a specialized professional level in media (library science, audiovisual education and other emerging instructional technologies) in an elementary/secondary school or school district.

Programs for licensure for all students may have either degree or non-degree status. Depending on an individual student's previous preparation, licensing may be

obtained during a Master's program, but additional preparation is often necessary. Students who plan to become full-time school librarians/media specialists should recognize that licensing courses of study are minimal programs that meet most state licensing requirements but do not meet the accreditation requirements of the American Library Association. Anyone wishing to be fully qualified to accept a school position should plan to enter a graduate degree program. Licensure programs offer instruction in the fundamental principles and practices of school library media programs and provide the basic preparation for advanced professional study.

Minnesota state licensing for school library media personnel on the graduate level is offered for the following endorsement: Media Generalist.

The Minnesota Board of Teaching requires competencies included in the following courses:

Prerequisite:

LME 401 Instructional Media Utilization (2)

Required Core (30 cr)

- LME 511 Information Resources (2)
- LME 512 Materials for Children (3)
- LME 513 Materials for Young Adults (3)
- LME 517 Evaluation and Selection (2)
- LME 522 Design & Production of Resources (2)
- LME 541 Organization of Information (2)
- LME 624 Digital Production (2)
- LME 643 Inst. System Dev. (2)
- LME 628 Distance Learning (2)
- LME 629 Electronic Communication (2)
- LME 631 School Library Media Leadership (3)
- LME 635 Media Services and Learning (3)
- LME 698 Internship (4)

A 200 hour internship is required. Students are not required to take specific courses if competency can be satisfactorily demonstrated. Requirements for licensure, in addition to courses, include a valid teaching license.

COURSE DESCRIPTIONS

502 (2) Media Utilization for Secondary Education

Instructional media used in the secondary classroom is demonstrated and used by the students. Resource selection and evaluation is stressed. Electronic media, computer aided instruction, telecommunications, and standard classroom media applications are stressed. Ethical issues of copyright discussed.

510 (2) Materials for Younger Child

Examination of print and audiovisual media for younger children birth to age seven. Identification of selection sources to identify materials. Evaluation of resources and practice in using them. Use of electronic search engines to identify resources, including but not limited to, research collections, discussion groups, and electronic periodicals.

511 (2) Information Resources

Examination of information resources used in K-12 school library media programs. Categories include but are not limited to encyclopedias, dictionaries, atlases, government publications, biography sources, indexes, on-line public access catalogs (OPACS), ERIC, and electronic reference resources.

512 (3) Materials for Children

Print, audiovisual and electronic media: their selection, evaluation, and use with children in grades K-6. 3 credit section includes storytelling.
Pre: LME 401

513 (3) Materials for Young Adults

Print and audiovisual media selection and use.

522 (2) Design and Production of Resources

Design and production of instructional media for the classroom. Design and production of media for a professional presentation. Basic 35mm color slide and print photography. Utilization of computers in instructional settings. Presentation of designed resources.

529 (2) Utilization of Internet Resources

The student will understand the Internet and learn how to utilize Internet resources and apply them to K-12 media programs.

530 (2) WWW Construction for Educators

This course will teach professional educators how to design and produce World Wide Web (WWW) pages of their own and how this knowledge can be transferred to the classroom.

541 (2) Organization of Educational Media

Dewey Decimal Classification system, Introduction to the Library of Congress Classification, Sears and LC Subject Headings, Commercial processing.
Pre: LME 511

580 (1-3) Seminar

In depth study and narrow focus on an educational topic. Students do extended research outside of class and defend their research in class.

589 (1-3) Selected Topics

Specific focus on an educational topic that may be taught as a regular course such as: Topic: Web Resources for the Classroom (usually a group requests a specific topic).

590 (1-6) Workshop

Specific focus on an educational topic that is conducted for a special group.

600 (2) Information and Society

Social, cultural, and educational role of the library; librarianship as a profession; current issues in information science.

607 (1) Library Strategies

Identification and practice in use of print and

electronic resources in graduate programs.

610 (3) Introduction to Technology in Education

All formats of information technology for educational settings. Learn about interactive video, microcomputers, computer networks, Internet, electronic information including bibliographic data bases, electronic newspapers, on-line encyclopedias and distance education.

611 (2) Advanced Reference Materials

Specialized sources in the sciences, arts, and humanities. Patron interviewing techniques.
Pre: LME 411/511

612-01 (2) Advanced Materials for Children

In-depth examination of authors of a particular genre. Examination of the Caldecott award winning titles. Children's magazines. Examination of award winning titles from other countries. Electronic resources: Netscape and microcomputer software.
Pre: LME 412/512

612-02 (2) Materials: Advanced Young Adult Literature

Examination of trends in recent young adult fiction. Selection, evaluation and use of young adult fiction. Reading and discussion of current young adult fiction.

612-03 (2) Multicultural Materials

To identify books and other media with multicultural themes and topics for young adults.
Pre: LME 413/513

612-04 (2) Materials: Popular Adult Literature

Examination of current popular adult literature—New York Times Best Sellers—Local bookstore best sellers.

631 (3) School Library Media Leadership

Function and role of media specialist. Components of effective school library media program: resources, personnel, spaces, budget, planning, organizing and policy development.

633 (2) Censorship Issues

First Amendment, Library Bill of Rights, Freedom to View and Listen in relation to societal pressures, court cases, selection policies and reevaluation procedures.

635 (4) Media Service and Learning

Integrating media into the curriculum. Instructional role of media spec. Information literacy. Philosophy, function, and role of the library media program.

639 (2) District Level Administration

Philosophy of district media service, relationships with school personnel,, goal setting, and budget planning.

641 (2) Technical Services II

Organization and operation of a technical services department at a school district level.
Pre: LME 441/541

642 (1-3) Library of Congress Classification

Work with LC classification schedules and worksheets. Assign LC subject headings. Become familiar with the work flow pattern used in processing university library collections. Study professional literature of the library media field. Requirements: interview of university cataloging staff, reaction papers, exams.
Pre: LME 441/541

643 (2) Instructional System Development

Instructional systems approach to the development of coursework will be examined. Proper selection of content will be stressed. Selecting, evaluating, and/or production of course materials will be emphasized. Proper testing procedures will be stressed. Formative and summative evaluations will be done.

646 (2) Library Automation

Students will be required to learn the following: Checklist for automation planning, examination of Winnebago and Follett automation software systems, MARC format—importance of consistency and global editing, circulation, bar coding and issues, using automation reports to their fullest, and networking and cooperation issues.
Pre: LME 441/541

647 (2) Information Storage and Retrieval

Bibliographic databases, networks and selected databases and networks will be examined.

650 (1) Technology Tour

On-site visits to schools, libraries and other technology rich facilities to see first hand how the technology is put to use in education and training.

661 (2) Library Networking

Evaluation and selection of hardware and software for connectivity and networking of computer terminals. Cooperation among library systems examined.

677 (2) Trends in Education Technology

Student and faculty agree upon a specific unit of study to work on. Student does assignments and reports back to the faculty member for evaluation.

692 (2) Research Methods

Searching, documenting, evaluating, and applying information in the library media field.

693 (1) Evaluation and Selection of Education Software

Evaluation of educational software for K-12 schools. Selection of software for elementary and secondary collections. Integration of software into the curriculum.

694 (1) Alternate Plan Paper

Specialized guidance in conducting research and writing of the alternate plan paper. Individual appointments are set up with Professor McDonald.
Pre: LME 692, or permission

698 (1-8) Internship

On-the-job training in school library media center. Work is jointly supervised by the academic unit and the cooperating school. Six credits of internship is required for Media Generalist licensure.

699 (3-6) Thesis

Course provides students with opportunity to focus on a research problem related to their Specialist degree. Work with advisor in writing the thesis.

MANUFACTURING ENGINEERING TECHNOLOGY MS

*College of Science, Engineering & Technology
Automotive and Manufacturing Engineering
Technology Department
E205 Trafton • 507-389-6383 • Fax: 507-389-5002*

Chair and Graduate Coordinator: Kirk Ready, Ed.S.

Ann Goebel, MS, Bruce Jones, Ph.D., Andrzej Markowski, Ph.D., Harry Petersen, Ph.D., Paul Sullivan, Ph.D.

Manufacturing Engineering Technology is a Master of Science program intended for students with an undergraduate degree in engineering technology or engineering who have a desire to obtain a specialized education in modern manufacturing. Students with other undergraduate majors may also enter the program but may have a considerable number of deficiencies which must be made up at the undergraduate level. The emphasis of the program is the technology and organization of manufacturing in a competitive global world.

Admission. Students seeking admission to the Manufacturing program must be admitted to the College of Graduate Studies and in addition must have completed undergraduate coursework which includes: Calculus I, Calculus II, a Computer Science programming language, Electronic Circuit Analysis, Computer Aided Design (CAD), Materials and Metallurgy, Statics, Materials Processing and Manufacturing Automation.

Applicants who do not have the prerequisites completed will be conditionally admitted to the program with the undergraduate courses listed as deficiencies. These deficiencies must be made up before the student submits a plan of study before the completion of the first 16 graduate credits.

Financial Assistance. The department typically has two to five graduate assistants. Duties include research assisting and laboratory supervision. Application forms are available from the College of Graduate Studies or from the Automotive and Manufacturing Engineering

Technology Department Office. Completed forms and any support materials should be sent to the department chairperson. Applications can be completed at any time. The department typically makes its decision in May for assistantships which begin in August.

MANUFACTURING ENGINEERING TECHNOLOGY MS

(Thesis Plan - 32 cr)

(Alternate Plan Paper - 34 cr)

Required Core (16 cr)

MET 532 Manufacturing Project Management (3)
MET 600 Manufacturing Research Methods (2)
MET 645 CAD Applications (2)
AND one of the following:
MET 678 Manufacturing Processes (2)
MET 691 In-Service (1-4)
MET 692 Manufacturing Seminar (1-3)

Choose additional electives in MET to total 16 credits.

Required Concentration (10 cr)

Choose 10 credits in a concentration area in another department such as automotive engineering technology, business, computer science, or one of the natural sciences. The area chosen should reflect the background and occupational goals of the individual and must be approved by the student's graduate committee.

Required Electives (6-8 cr)

These courses can be from any graduate level courses.

Required Thesis or Alternate Plan Paper

MET 694 Alternate Plan Paper (1-2)
MET 699 Thesis (2-4)

Additional Requirements:

Each student must obtain practical experience in manufacturing through an internship, independent study, alternate plan paper or manufacturing work experience. A minimum of 50% of all graduate level coursework applied toward the degree must be at the 600 level. Each student must successfully complete a final written comprehensive examination.

COURSE DESCRIPTIONS

507 (2) Facilities Planning

A study of industrial plant layout for maximum facility utilization. Topics include: factory layout, materials storage and handling, industrial equipment selection and mechanization.

523 (2) Ergonomics

Investigation of work place design and environmental stress from heat, noise, vibration, repetitive motion and illumination in personal machine systems. Topics: human-machining

524 (2) Industrial Safety