## PSYCHOLOGY

The psychological science department offers a master of science in industrial-organizational psychology (I-O). Our M.S. in I-O psychology degree provides a strong foundation in scientific methods, management of human resources, and applying strategies and training techniques to make organizations more effective. With predicted growth of 53 percent for I-O psychologists between 2012 and 2022, this career field is in high demand ([Occupational Outlook Handbook](https://www.bls.gov/ooh/psychologists.htm), U.S. Bureau of Labor Statistics). Requirements for the program are listed on our website, [http://psych.mst.edu/graduate/indorgpsych/](http://psych.mst.edu/graduate/indorgpsych/}. The M.S. program is offered on campus and via distance education. Additional information about our distance education program can be found at the distance and continuing education website, [http://dce.mst.edu/credit/degrees/iopsychology/](http://dce.mst.edu/credit/degrees/iopsychology/).

### Master of Science in Industrial-Organizational Psychology

#### Admission Requirements

Students interested in the M.S. in I-O psychology program should review the admissions requirements listed on our website ([http://psych.mst.edu/graduate/indorgpsych/](http://psych.mst.edu/graduate/indorgpsych/)).

#### Program Requirements

The M.S. in industrial-organizational psychology requires a minimum of 36 credit hours and allows students to select one of three non-thesis tracks (leadership in technological organizations, human factors, or psychometrics) or the thesis option. Students will complete 15 hours of core courses, 9 hours of methods courses, 9 hours of specialization courses within the track or the thesis option requirements, and 3 hours of electives from within any of the three specialization emphasis (track) areas.

#### Core Courses (15 hours, select 5 of 6 courses)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>PSYCH 5010</td>
<td>Seminar in Industrial / Organizational Psychology</td>
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<tr>
<td>PSYCH 5601</td>
<td>Advanced Group Dynamics</td>
</tr>
<tr>
<td>PSYCH 5602</td>
<td>Organizational Processes: Research and Practice</td>
</tr>
<tr>
<td>PSYCH 5700</td>
<td>Advanced Industrial Psychology</td>
</tr>
<tr>
<td>PSYCH 6610</td>
<td>Advanced Leadership Theory &amp; Practice</td>
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<tr>
<td>PSYCH 6702</td>
<td>Personnel Selection</td>
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#### Methods Courses (9 hours)

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>PSYCH 5201</td>
<td>Psychometrics</td>
</tr>
<tr>
<td>PSYCH 6210</td>
<td>Advanced Research Methods ¹</td>
</tr>
<tr>
<td>STAT 5345</td>
<td>Statistical Data Analysis</td>
</tr>
<tr>
<td>or STAT 6344</td>
<td>Design And Analysis Of Experiments</td>
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</tbody>
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#### Specialization Emphasis Courses (9 hours, of which 3 hours must be 6000-level)

**Human Factors (non-thesis):**

<table>
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<tr>
<td>PSYCH 5710</td>
<td>Advanced Human Factors</td>
</tr>
<tr>
<td>PSYCH 5720</td>
<td>Advanced Human-Computer Interaction</td>
</tr>
<tr>
<td>PSYCH 5730</td>
<td>Environmental Psychology: Research and Practice</td>
</tr>
<tr>
<td>PSYCH 6085</td>
<td>Internship</td>
</tr>
<tr>
<td>PSYCH 6099</td>
<td>Research</td>
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**Psychometrics emphasis (non-thesis):**

<table>
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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>STAT 5643</td>
<td>Probability And Statistics</td>
</tr>
<tr>
<td>STAT 5644</td>
<td>Mathematical Statistics</td>
</tr>
<tr>
<td>STAT 5346</td>
<td>Regression Analysis</td>
</tr>
<tr>
<td>STAT 6344</td>
<td>Design And Analysis Of Experiments</td>
</tr>
<tr>
<td>STAT 6545</td>
<td>Multivariate Statistical Methods</td>
</tr>
<tr>
<td>STAT 6553</td>
<td>Linear Statistical Models I</td>
</tr>
<tr>
<td>STAT 6554</td>
<td>Linear Statistical Models II</td>
</tr>
</tbody>
</table>

**Leadership in Technical Organizations emphasis (non-thesis):**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYCH 4992</td>
<td>Cross-Cultural Psychology</td>
</tr>
<tr>
<td>PSYCH 5600</td>
<td>Advanced Social Psychology</td>
</tr>
<tr>
<td>PSYCH 5603</td>
<td>Advanced Social Influence</td>
</tr>
<tr>
<td>PSYCH 6611</td>
<td>Leadership for Engineers</td>
</tr>
<tr>
<td>PSYCH 6085</td>
<td>Internship</td>
</tr>
<tr>
<td>PSYCH 6099</td>
<td>Research</td>
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</tbody>
</table>

**Thesis Option (9 hours):**

Students completing a thesis would need to complete the following:

5000-level or 6000-level PSYCH, ENG MGT, IS&T, or STAT course pertaining to thesis topic (to be approved by student’s academic advisor)

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<tr>
<td>PSYCH 6085</td>
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<td>PSYCH 6099</td>
<td>Research</td>
</tr>
</tbody>
</table>

¹ To be designated by advisor

#### Electives (3 hours):

Three hours of electives from within any of the three specialization emphasis areas

**Thesis or internship experience:**
Students in one of the three specialization emphasis areas are not required to complete a thesis. There is a thesis option, which requires the completion of a thesis. The thesis will be a research project on an I-O topic selected by the student in consultation with his or her advisor. Students in one of the specialization areas may complete a thesis, but it will require hours beyond the minimum of 36 credit hours. Internships are encouraged, but not required of the students and also will require hours beyond the minimum of 36 credit hours.

**Psychology of Leadership**

This certificate program is designed to provide formalized education in the area of the psychology of leadership and is open to all persons holding a bachelor's, master's, or Ph.D. degree who have the required prerequisites for the courses offered. After being admitted to the program, a student must take three courses from a group of five and an additional fourth course from a second group of four.

**Choose three courses from the following:**

- PSYCH 5600 Advanced Social Psychology
- PSYCH 5602 Organizational Processes: Research and Practice
- PSYCH 6610 Advanced Leadership Theory & Practice
- ERP 5210 Performance Dashboard, Scorecard and Data Visualization
- IS&T 5251 Technological Innovation Management and Leadership

**Choose one course from the following:**

- PSYCH 5601 Advanced Group Dynamics
- PSYCH 5603 Advanced Social Influence
- IS&T 6680 Advanced Web and New Media Studies
- IS&T 6887 Research Methods in Business and IS&T

Other courses approved by the program advisor may be substituted for any of the above listed courses on a case-by-case basis.

In order to receive a graduate certificate, the student must have an average cumulative grade of 3.0 or better in the certificate courses. Students admitted to the certificate program will have a non-matriculated status as a graduate student. If they complete each of the four courses with a grade of B or better, they may be admitted to the master's degree program in industrial-organizational psychology or information science and technology if they apply and meet the program requirements. Students who do not have all of the prerequisite courses necessary to take a course in the certificate program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

**Psychometrics**

This certificate program is designed to provide formalized education in the area of psychometrics. Psychometrics is the field of study concerned with the theory and technique of psychological measurement and includes the measurement of knowledge, abilities, attitudes, and personality traits. The field is primarily concerned with the study of differences between individuals and involves two major research tasks: (1) the construction of instruments and procedures for measurement; and (2) the development and refinement of theoretical approaches to measurement. After being admitted to the program, a student must take two courses from a group of three and an additional two courses from a second group of three.

**Choose two courses from the following three:**

- PSYCH 5200 Theories and Practice of Psychological Measurement
- PSYCH 5201 Psychometrics
- PSYCH 5700 Advanced Industrial Psychology

**And an additional two from these three:**

- STAT 5346 Regression Analysis
- STAT 5353 Statistical Data Analysis
- STAT 6344 Design And Analysis Of Experiments

The psychometrics certificate program is open to all persons holding a bachelor's, master's, or Ph.D. degree and who have the required pre-requisites for the courses offered. In order to receive a graduate certificate, the student must have an average cumulative grade of 3.0 or better in the certificate courses.

Students admitted to the certificate program will have a non-matriculated status as a graduate student. If they complete each of the four courses with a grade of B or better, they may be admitted to the Missouri S&T master's degree program in industrial-organizational psychology or mathematics and statistics if they apply and meet the program requirements. Students who do not have all of the prerequisite courses necessary to take a course in the certificate program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certificate courses.

**Leadership in Engineering Organizations**

The leadership in engineering organizations certificate program aims to equip students with a set of tools that will allow them to become effective leaders of groups, programs, and departments engaged in engineering and technology work. Specifically this certificate program will enable graduates to:

- understand the technical leadership roles in engineering organizations
- understand and develop a personal leadership style and develop the skill to critically analyze, evaluate, improve, and adapt existing technical and/or managerial systems
- organize and lead complex projects, groups, and organizations

The leadership in engineering organizations certificate program consists of the following four courses:

- ENG MGT 5110 Managerial Decision Making
- PSYCH 5602 Organizational Processes: Research and Practice
- PSYCH 6610 Advanced Leadership Theory & Practice
- PSYCH 6611 Leadership for Engineers

Students will be responsible for prerequisite knowledge as determined by course instructors. With the approval of the departments, appropriate courses may be substituted for a certificate course if that course is not available.

The leadership in engineering organizations certificate program is open to all persons holding a B.S., M.S., or Ph.D. degree in an engineering or related field and who have a minimum of 12-months of professional experience.
employment experience or are currently accepted into a graduate engineering degree program at S&T.

In order to receive a graduate certificate, the student must have an average cumulative grade point of 3.0 or better in the certificate courses. A student will be given three years to complete the program so long as he/she maintains a B average in the courses taken.

Students admitted to the certificate program will have non-degree graduate status but will earn graduate credit for the courses they complete. If the four-course sequence is completed with a grade of B or better in each of the courses taken, they may be admitted to the engineering management M.S. program if they apply and meet the requirements. The certificate courses taken by students admitted to the M.S. program will count towards their master’s degrees. Students who do not have all of the prerequisite courses necessary to take the courses in the certificate program will be allowed to take "bridge" courses at either the graduate or undergraduate level to prepare for the formal certification courses.

Jessica L. Cundiff, Assistant Professor
PHD Pennsylvania State University

Amber M Henslee, Assistant Professor
PHD Auburn University Main Campus

Brandi A Klein, Assistant Professor
PHD Bowling Green State University

Frances H Montgomery, Chancellor's Professor
PHD Florida State University

Nancy J Stone, Professor
PHD Texas Tech University

Nathan W Weidner, Assistant Professor
PHD Wayne State University

PSYCH 5000 Special Problems (IND 0.0-6.0)
Problems or readings on specific subjects or projects in the department. Consent of instructor required.

PSYCH 5001 Special Topics (LEC 0.0-6.0)
This course is designed to give the department an opportunity to test a new graduate level course. Variable title.

PSYCH 5010 Seminar in Industrial / Organizational Psychology (RSD 3.0)
Review of the most recent theoretical and applied research in advanced personnel and organizational psychology. Topics will include personnel selection, training and performance appraisal, job attitudes, motivation, work groups and teams, leadership, organizational culture, and organizational development. Prerequisite: Nine hours of psychology.

PSYCH 5200 Theories and Practice of Psychological Measurement (LEC 3.0)
An overview of psychological tests and batteries used in a variety of disciplines. An emphasis is placed on the proper development and use of these tests and test batteries. Tests examined will include tests of intelligence, aptitude, personality, and psychopathology. Prerequisite: Psych 4200 or graduate standing.

PSYCH 5201 Psychometrics (LEC 3.0)
An examination of statistical methods used to develop and refine measures of human performance, aptitudes, and personality. Topics include reliability and validity, data reduction, measuring interrelationships among variables (e.g., factor analysis, multiple regression), and testing group differences. Prerequisites: Psych 1101 and Psych 2200.

PSYCH 5600 Advanced Social Psychology (LEC 3.0)
An advanced study of the behavior of individuals in interaction within groups. Consideration will also be given to the experimental literature dealing with the formal properties of groups, conformity and deviation, intergroup relations, and attitude formation and attitude change. Prerequisite: Psych 4600.

PSYCH 5601 Advanced Group Dynamics (LEC 3.0)
An in-depth review of the concepts and theories related to group dynamics. Topics include group goals, communication within groups, group structure, norms, leadership, decision making, controversy, conflict resolution, power, diversity issues, and team development. Students will consider theoretical implications and practical applications of topics in group dynamics in the form of independent reading, research proposals, and observational assignments. Prerequisite: Psych 4601 or graduate standing.

PSYCH 5602 Organizational Processes: Research and Practice (LEC 3.0)
Examination of the field of Organizational Psychology. An emphasis is placed on research methods and application of practices related to individual processes, group processes, organizational structure and function. Prerequisites: Psych 4602 or graduate standing.

PSYCH 5603 Advanced Social Influence (LEC 3.0)
An in-depth review of the principles and procedures that affect the process of social influence, with consideration given to attitudinal, compliance inducing, and perceptual influences. Students will consider the theoretical implications and practical applications of topics in social influence in the form of independent reading, research proposals and/or projects, and observational assignments. Prerequisite: Psych 4603 or graduate standing.

PSYCH 5700 Advanced Industrial Psychology (LEC 3.0)
An in-depth examination of the field of Industrial psychology. An emphasis is placed on research methods and application of practices related to Job Analysis, Recruitment, Selection, Training, and Performance Appraisal. Prerequisite: Psych 4700 or graduate standing.

PSYCH 5710 Advanced Human Factors (LEC 3.0)
An in-depth review of the foundations of human factors, focusing on the interaction of people with various forms of technology in a variety of environments. Topics include research and evaluation methods, displays (e.g., visual, auditory), attention and information processing, decision making, motor skills, anthropometry, and biomechanics, with a strong focus on application (e.g., environmental design, human error, safety). Prerequisite: Psych 4710 or graduate standing.

PSYCH 5720 Advanced Human-Computer Interaction (LEC 3.0)
This course examines the psychological research and theories that contribute to the field of human-computer interaction. An emphasis will be placed on engaging in critical evaluation of research and applying theoretical knowledge to effectively use computers in organizations. Prerequisite: Psych 4720 or graduate standing.
**PSYCH 5730 Environmental Psychology: Research and Practice** (LEC 3.0)
An in-depth review of the theoretical perspectives in environmental psychology and the psychological effects of various environments. An emphasis is placed on the review and integration of the research to explain the psychological issues related to various environments as well as to understand ways to effectively design living, educational, work, and recreational environments. Prerequisite: Psych 4730 or graduate standing.

**PSYCH 6085 Internship** (IND 0.0-6.0)
Students will apply critical thinking skills and discipline specific knowledge in a work setting based on a project designed by the advisor and employee. Activities will vary depending on the students background and the setting. Requires a major report. Prerequisites: Completed Core and Methods courses; instructor consent.

**PSYCH 6099 Research** (IND 0.0-6.0)
Investigations of an advanced nature leading to the preparation of a thesis or dissertation. Prerequisites: Consent of instructor required.

**PSYCH 6210 Advanced Research Methods** (LEC 3.0)
Advanced techniques class, including advanced analysis of variance, multiple regression, multiple and partial correlation, analysis of covariance and the examination of some quasi-research designs. Prerequisites: Graduate standing.

**PSYCH 6610 Advanced Leadership Theory & Practice** (LEC 3.0)
Examination of research surrounding the major theories of leadership. Topics include leadership measurement of traits and skills, major theories of leadership including LMX, Charismatic, Transformational, and Authentic Leadership Theories. An emphasis is given on researching leadership topics and applying findings of leadership research in organizations. Prerequisite: Psych 4610 or graduate standing.

**PSYCH 6611 Leadership for Engineers** (LEC 3.0)
Provides engineers with a background in leadership concepts and principles; enables students to develop practical skills in leading and managing through multiple personal assessment. Topics include leadership styles, managing commitments, conflict resolution, change management, emotional intelligence, team dynamics and business ethics. Prerequisite: Eng Mgt 5110 or Psych 4602. (Co-listed with Eng Mgt 6112).

**PSYCH 6702 Personnel Selection** (LEC 3.0)
Developing and using assessment tools for personnel selection, classification, and promotion; measuring the impact of cultural variables on test performance; early identification of managerial potential; and emphasis on alternatives to cognitive abilities testing, including physical fitness and personality assessment. Prerequisites: Graduate standing.