IDS 200. Intro to Management Information Systems. 4 hours.
Introduction to concepts and application of information technology for solving business problems and supporting organizational functions. Includes hands-on instruction on use of computer-based productivity tools. Course Information: Previously listed as IDS 100. Class Schedule Information: During the fall and spring terms, combined section final exam will be held on Thursday of finals week from 3:30 to 5:30 p.m. To be properly registered, students must enroll in one Laboratory-Discussion and one Lecture.

IDS 201. Introduction to Business Programming. 3 hours.
Disciplined computer-assisted problem solving. Structured programming, data types and data structures, modularization. Program design for business information- and decision-support. Course Information: Credit is not given for IDS 201 if the student has credit for MCS 260. Prerequisite(s): IDS 200 and MATH 160 or the equivalent courses. Class Schedule Information: To be properly registered, students must enroll in one Laboratory and one Lecture-Discussion.

Working with business data. Data summarization, visualization, business insights. Probability, sampling distributions, confidence intervals, hypothesis testing and introduction to linear regression. Use of software for data visualization and analysis. Course Information: Prerequisite(s): MATH 165 or MATH 180 or MATH 181. Class Schedule Information: To be properly registered, students must enroll in one Lecture and one Discussion.

IDS 312. Business Project Management. 3 hours.
An integrative approach to learning how projects contribute to the strategic goals of the organization. Major issues: selecting projects, project management techniques and tools, budgeting, monitoring, risk mitigation, and interpersonal skills.

IDS 331. Business Analysis Using Spreadsheets. 3 hours.

IDS 355. Operations Management. 3 hours.
Application of management sciences to the planning and design of production, distribution, and service systems. Course Information: Prerequisite(s): ENGL 161. Class Schedule Information: During the fall and spring terms, combined section final exam will be held on Thursday of finals week from 3:30 to 5:30 p.m. To be properly registered, students must enroll in one Discussion/Retitation and one Lecture.

Continuation of statistical concepts, techniques for managerial decisions. Analysis of variance, multivariate regression, time series, statistical process control, non-parametric methods. Use of statistical software for data visualization, analysis. Course Information: Prerequisite(s): IDS 270 and MATH 165.
IDS 400. Programming for Data Science in Business. 3 or 4 hours.
Aims to provide students the knowledge and skills for designing and
developing data science applications in various business areas, using a
language such as Python. Focuses on programming constructs and use of
functions and packages. Course Information: 3 undergraduate hours.
4 graduate hours. Extensive computer use required. Prerequisite(s):
IDS 201 and basic knowledge of programming at the level of IDS 201 or
equivalent. Recommended background: IDS 270.

IDS 401. Business Object Programming using Java. 0-4 hours.
Basic concepts in object-oriented programming such as objects,
classes, class inheritance and interfaces, data abstraction and
encapsulation, polymorphism, and dynamic binding. Course Information:
3 undergraduate hours. 4 graduate hours. Prerequisite(s): IDS 201 or
the equivalent. Class Schedule Information: To be properly registered,
students must enroll in one Laboratory and one Lecture-Discussion.

IDS 403. Information Security. 3 or 4 hours.
Examine the field of information security to prepare students for their
future roles as business decision-makers. Presents a balance of the
managerial and technical aspects of information security. Course
Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s):
IDS 200 or the equivalent.

IDS 405. Business Systems Analysis and Design. 3 or 4 hours.
Theory of analysis, design and development of information systems;
information management and database management systems; data
management and analysis; case studies in systems implementation
and evaluation. Course Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s):
IDS 201 or 331.

IDS 406. IDS Consulting Practicum. 3 or 4 hours.
Students interact with businesses or non-profit organizations to
design and develop technology, business and analytics-related
solutions in IDS areas. Experiential learning on all project phases from
investigation and analysis, through presentation. Course Information:
3 undergraduate hours. 4 graduate hours. Extensive computer use
required. Prerequisite(s): Knowledge of databases, programming,
statistics; or consent of instructor. Recommended background: Senior
standing; and familiarity with systems analysis and design.

IDS 410. Business Database Technology. 3 or 4 hours.
Computer software techniques used in business with emphasis on
information management and database management systems. Data
management and analysis. Major types of database management
systems, query languages. Course Information: 3 undergraduate hours.
4 graduate hours. Prerequisite(s): IDS 201 or IDS 331. For BS in Data
Science prerequisite is an equivalent course like CS 141.

IDS 412. Distributed Business Systems. 3 or 4 hours.
Organizational aspects and underlying concepts of distributed business
systems, decentralization versus centralization issues, costs of distributed
computing, and performance evaluation measures. Course Information: 3
undergraduate hours. 4 graduate hours. Prerequisite(s): IDS 201 or IDS
330; and credit or concurrent registration in IDS 410.

IDS 413. Internet Technology and Management. 3 hours.
The technologies of World Wide Web development. Topics include: TCP/IP,
HTTP, HTML, HTML authoring, XML, ASP programming, client-side
programming, and Web 2.0, web servers, database servers, business
application servers and Internet. Course Information: Credit is not given
for IDS 413 if the student has credit for IDS 424. Extensive computer use
required. Prerequisite(s): IDS 201 or IDS 331; and IDS 410.

IDS 420. Business Model Simulation. 3 or 4 hours.
Simulation analysis of strategic business decision models for investment,
marketing, product introduction, and operational policies concerning
inventory, production planning, quality assurance and supply chain
management. Course Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s): Credit or concurrent registration in IDS 355; or
credit or concurrent registration in IDS 331 or the equivalent.

IDS 422. Text Mining for Business Applications. 3 or 4 hours.
Text mining for business applications. It will cover document
representation, text categorization and clustering, basic natural language
processing techniques, sentiment analysis, probabilistic topic models and
text visualization. Course Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s): IDS 371 or consent of the instructor.

IDS 435. Optimization for Analytics. 3 or 4 hours.
Optimization methods for machine learning and data science applications
in business, engineering, sciences. Core formulations and algorithms
for continuous, discrete, dynamic optimization problems. Why
algorithms work, and implementation of methods. Course Information:
3 undergraduate hours. 4 graduate hours. Prerequisite(s): IDS 371 or the equivalent; and knowledge of programming at the level of IDS 201 or
equivalent.

IDS 437. Stochastic Methods. 3 or 4 hours.
Stochastic processes and other applications of probability theory. Use
of spreadsheet and other software tools for analysis, simulation and
decision theory. Models for business operations and planning, computer
systems, transportation, finance. Course Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s): IDS 371.

IDS 446. Decision Analysis. 3 or 4 hours.
Prior and posterior distributions; conjugate priors; value of information;
applications to decision making in business. Course Information: 3
undergraduate hours. 4 graduate hours. Prerequisite(s): IDS 371.

IDS 450. Supply Chain Planning and Logistics. 3 or 4 hours.
Covers concepts in designing, analyzing, improving, measuring and
controlling logistics operations in modern supply chains. Students are
presented with logistics concepts, techniques, planning tools, and case
studies to facilitate learning. Course Information: 3 undergraduate hours.
4 graduate hours. Extensive computer use required. Prerequisite(s): IDS
355; and IDS 454. IDS 454 can be taken as a corequisite; or consent of
the instructor. Recommended background: Prior coursework/experience
in operations management.

IDS 451. Enterprise Operations and Supply Chain Systems. 0-4 hours.
Provides an overview of how enterprise business systems operate and
are used to manage operations and supply chains in order to make
effective business decisions. Course Information: 3 undergraduate hours.
4 graduate hours. May be repeated. Extensive computer use required.
Shows students how business processes integrate within an enterprise
and across the supply chain. Prerequisite(s): IDS 200 and credit or
concurrent registration in IDS 355; or credit or concurrent registration in
IDS 532. Class Schedule Information: To be properly registered, students
must enroll in one Lecture and one Laboratory.
IDS 453. Supply Chain Management: Sourcing and Procurement. 3 or 4 hours.
The course materials will focus on the fundamental tools, processes and
techniques in sourcing and procurement strategies, contract negotiation
and management, managing supplier relationships, evaluating
supplier performance, and global sourcing. Course Information: 3
undergraduate hours. 4 graduate hours. Prerequisite(s): IDS 355 or IDS
532. Recommended background: Prior coursework/experience in supply
chain management.

IDS 454. Introduction to Supply Chain Management. 3 or 4 hours.
Supply Chain Management is studied as an information-intensive,
integrated system for managing material flows, logistics and inter-
organizational partnership to deliver products and services. Course
Information: 3 undergraduate hours. 4 graduate hours. Prerequisite(s):
IDS 355.

IDS 460. Causal Inference. 3 hours.
Conceptual foundations and methods for causal inference, using causal
diagrams as well as the potential outcomes framework. Identification
and estimation of causal effects in randomized control trials and
observational studies. Course Information: Extensive computer use
required. Prerequisite(s): STAT 481 or IDS 371; and STAT 382 or IDS
462. Recommended Background: Familiarity with statistical packages
such as R, Stata, and/or SAS is recommended.

IDS 462. Statistical Software for Business Applications. 3 or 4 hours.
Hands-on experience with statistical software commonly used in industry.
Data preparation, advanced statistical methods for business problems -
marketing, finance, operations, etc. Interpretation and communication of
results to guide decision making. Course Information: 3 undergraduate
hours. 4 graduate hours. Prerequisite(s): IDS 371 or consent of the
instructor.

IDS 470. Multivariate Analysis. 3 or 4 hours.
Introduction to the structure and analysis of multivariate data. Emphasis
on the multivariate normal model. Regression; tests concerning
multivariate means, classification; discriminant analysis, principal
components. Course Information: 3 undergraduate hours. 4 graduate
hours. Prerequisite(s): IDS 371; or MATH 310; or MATH 320.

IDS 472. Business Data Mining. 3 or 4 hours.
Data mining for business insights and decisions. Classification, trees,
random forests, naïve Bayes, clustering, association rules, neural nets,
recommender systems, text mining. Hands-on application to problems in
finance, marketing, and operations. Course Information: 3 undergraduate
hours. 4 graduate hours. Credit is not given for IDS 472 if the student has
credit for IDS 572. Prerequisite(s): IDS 371 or the equivalent.

IDS 473. Risk Management and Insurance. 3 hours.
Introduction to risk management. Loan and credit management; credit
scoring. Risk measurements and reserves; banking and insurance capital
requirements, the BASEL accord, tail events and catastrophic event
insurance. Financial contracts and hedging. Course Information: Same as
FIN 473. Prerequisite(s): IDS 270 and FIN 300.

IDS 474. Quality and Productivity Improvement Using Statistical
Methods. 3 or 4 hours.
Directed experimentation for quality and productivity improvement, quality
surveillance, design and analysis of two-level factorial experiments
and multi-level experiments, data transformation. Course Information:
3 undergraduate hours. 4 graduate hours. Prerequisite(s): IDS 371 or
consent of the instructor.

IDS 475. Database Accounting Systems. 3 or 4 hours.
Concepts and principles of designing database systems to perform
accounting functions, applications of microcomputer accounting software
packages systems design tools, and computerized transaction cycles.
Course Information: Same as ACTG 475. 3 undergraduate hours. 4
graduate hours. Extensive computer use required. Prerequisite(s): A
passing grade in both ACTG 211 and IDS 200.

IDS 476. Business Forecasting Using Time Series Methods. 3 or 4
hours.
Autoregressive, moving average, and seasonal models for time series
analysis and business forecasting. Forecasting using multi-variable
transfer function models is also included. Course Information: Same as
ECON 450. 3 undergraduate hours. 4 graduate hours. Prerequisite(s):
IDS 371 or ECON 300 or ECON 400; or consent of the instructor.

IDS 478. Regression Analysis. 3 or 4 hours.
Data collection and exploration; model building; variable least squares;
residual analysis; variable selection; multicollinearity; ridge regression;
nonlinear regression; nonparametric regression. Course Information: 3
undergraduate hours. 4 graduate hours. Prerequisite(s): IDS 371.

IDS 479. Enterprise Risk Management. 3 or 4 hours.
Overview of enterprise-wide risk management strategies and techniques:
strategies that firms employ to enhance value and minimize exposure;
techniques used to identify, measure, reduce, and transfer risk. Course
Information: Same as FIN 479. 3 undergraduate hours. 4 graduate hours.
Prerequisite(s): FIN 300; or consent of the instructor. Recommended
background: IDS 473 or FIN 473.

IDS 494. Topics in Information and Decision Sciences. 3 or 4 hours.
Topics vary; selected readings; case analysis. Course Information: 3
undergraduate hours. 4 graduate hours. May be repeated up to 1 time(s)
if topics vary. Students may register in more than one section per term.
Prerequisite(s): Consent of the instructor.

IDS 495. Competitive Strategy. 4 hours.
Multidisciplinary analysis of organizational strategy and policy using
case method and/or business simulation. Assignments involve extensive
library research and oral and written reports. Course Information:
Prerequisite(s): Senior standing or above Senior standing in the College
of Business Administration and completion of all other CBA core courses.

IDS 499. Research Experience. 1-3 hours.
Research experience under the supervision of a faculty member. The
faculty member and student will determine the research project. Each
student must submit a written report and each student must participate at
a research event on campus. Course Information: May be repeated to a
maximum of 9 hours. Students may register in more than one section per
term. Prerequisite(s): Consent of the department and the instructor.