NOVEMBER 22-24, 2013
MODERN MINING INFORMATION SYSTEMS: DATA INTEGRATION

Introductory Information Technology Short Course
Operations information system and business intelligence for mining engineers: a short course on the effective use of IT tools with case examples from real mines using real mining data. First part of a two-part series on data warehousing and data mining.
Who Should Attend This Course?

This three-day short course is designed for frontline technical personnel (engineers), mid-level managers, and process improvement technologists who are currently engaged in the investment and utilization of modern information technology (IT) for mines such as Fleet Management Systems (FMS), drill monitoring, computer maintenance management systems, and Enterprise Systems.

Why Attend This Course?

Advances in both the IT industry and evolution of the IT-based mining solutions have created excellent opportunities for improvement in performance monitoring and analysis, mine planning, and operations management. However, traditional mining engineering and management education have not incorporated these latest highly valuable skills in curricula. Other industries have undergone fundamental improvements in their business processes through the effective exploitation of stored data. This course is part of a series that will introduce the skill set needed to exploit these new opportunities.

Learn to:

- Access & manipulate commercial data systems
  - e.g. fleet management systems, historians, drill monitoring, and enterprise system data
- Query Databases through SQL Server 2008 & Excel
- Undertake Business Intelligence through Pivot Tables
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Topics:

- Basics of relational databases and database design
- Effective documentation of database solutions
- Commercial systems in mines and their data types
- Database design for engineers (non-IT personnel)
- Introduction to Data Warehousing and OLAP cubes

Day 1: 8AM to 4PM: classroom

- Introduction to topic: Business Intelligence
- Basics of DBs & Commercial Systems
- Database design for engineers
- Basic SQL codes

Day 2: 8AM to 4PM: Lab

- Review of previous day
- T-SQL and Views
- Project Planning & Presentation
- Pivot Table Analysis
- Design Project

Day 3: 8AM to 1PM: Lab

- Review of previous day
- Introduction to OLAP & Case Studies
- Introduction to Data Mining & Case Studies
- Completion of Projects
- Data to Action Project Presentations
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Instructor: Dr. Sean Dessureault

Dessureault is an associate professor currently engaged in applied research primarily related to the integration and effective use of modern mining information systems. He directs the Mining Intelligence Research Group (MIRG) laboratory, boasting data warehouses from over twenty mines, an integrated control room for distance control of mines and a team of experienced researchers and programmers. (www.mirg.arizona.edu). His consulting company MISOM Consulting Services Inc., (www.misomcs.com) designs, builds, deploys and services data warehouse business/operations intelligence systems, real-time control rooms, and mobile applications. MISOM also advises corporate leadership on technology strategy and selection. Another company, Stakeholder Listening & Analysis LLC (www.stakeholderla.com) co-founded by Dr. Dessureault, provides stakeholder monitoring, listening, dashboards, and online content creation and management, largely from social media and online news, to help companies better understand and communicate to stakeholders during the sensitive permitting phase of mineral development.

IMPORTANT INFORMATION

If registering for credit as part of the POST-BACCALAUREATE CERTIFICATE IN MINE PRODUCTION AND INFORMATION TECHNOLOGY:
Register for: MNE 597B - Modern Mining Information Systems – Data Integration


Location: E-commerce Hoffman Lab, McClelland Hall 218: 1130 E. Helen St Tucson AZ
Description:
Graduates of the Post-Baccalaureate Certificate in Mine Production and Information Technology will better understand how information technology can be used to maximize mine production and can advance on to Master of Science, or Master of Engineering programs. To qualify for this certificate program, applicants must have a Bachelor’s degree in engineering or related science and must meet the course pre-requisites for the courses in the certificate.

Curriculum:
15 units of credit beyond the Bachelors of Science in Mining Engineering or a related degree in engineering science, or business profession. The Mine Technology certificate option will consist of required classes:

- MNE 507 Equipment Operations Technology (3 units)
- SIE 554A The Systems Engineering Process (3 units)

The elective classes are:

- MNE 587 Applied Neural Network Computing (3 units)
- SIE 531 Simulation Modeling & Analysis (3 units)
- SIE 530 Engineering Statistics (3 units)
- SIE 548 Operations Research Modeling (3 units)
- MNE 597A – Introduction to Fleet Management Systems (1 unit)
- MNE 597B – Modern Mining Information Systems – Data Integration (1 unit)
- MNE 597C – Modern Mining Information Systems – Data Mining (1 unit)
- MNE 597D – Integrated Industrial Information Systems – Case of Mine to Mill (1 unit)

Course substitutions are allowed with the approval of MGE faculty member responsible.