ENTERPRISE TECHNOLOGY INTEGRATION (ETI)

ETI 99: Foreign Studies
1-12 Credits/Maximum of 12
Courses offered in foreign countries by individual or group instruction.
International Cultures (IL)

ETI 199: Foreign Studies
1-12 Credits/Maximum of 12
Courses offered in foreign countries by individual or group instruction.
International Cultures (IL)

ETI 294: Research Project
1-12 Credits/Maximum of 12
Supervised student activities on research projects identified on an
individual or small-group basis.

ETI 296: Independent Studies
1-18 Credits/Maximum of 18
Creative projects, including research and design, that are supervised on
an individual basis and that fall outside the scope of formal courses.

ETI 297: Special Topics
1-9 Credits/Maximum of 9
Formal courses offered infrequently to explore, in depth, a comparatively
narrow subject which may be topical or of special interest.

ETI 300W: Development and Documentation of Enterprise Web
3 Credits
Organizations utilizing enterprise stack platforms leverage several
core components in order to be successful in implementations across
system boundaries. Students will draw upon their prior experience in
databases, networks, and programming to understand how cloud-based
infrastructure solutions are built, the possible choices an analyst will
have, and the written communication needed in order to convey these
design choices to others. In addition, understanding the development
life cycle and workflow needed to create web-based solutions and how
they overlap with elastic operations will also be explored. Students will
work in teams not only to better understand group collaboration, but
to appreciate differences in backgrounds and biases as they relate to
solutions development.

Enforced Prerequisite at Enrollment: IST 210 and IST 220 and IST 256

ETI 399: Foreign Studies
1-12 Credits/Maximum of 12
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ETI 435: Enterprise Analytics
3 Credits
Analytics and big data, enabling analytics through information
technology, ROI in analytics, leveraging proprietary data for analytical
advantage, analytics on the web, analytics of online engagement,
applying analytics at production scale, predictive analytics in the cloud,
analytical technology and the business user, using analytics for improved
organization performance, organizing analysts, engaging analytical
talent, analytics governance, and building a global analytical capability,
and analytics case studies in healthcare, manufacturing, HR, financial
services, etc.

Enforced Prerequisite at Enrollment: IST 210 and ETI 461

ETI 461: Database Management and Administration
3 Credits
A study of advanced topics in database management systems that
are fundamental to effective administration of modern enterprise
information systems. The objective of the course is to enable a student
to comprehend a range of issues in modern database management
and administration. The students will learn advanced SQL, database
 system development lifecycle topic that include: database planning,
requirements and design, database selection and application design,
prototyping, implementation, testing operational and maintenance;
database performance tuning concepts, monitoring the system for
improved performance, and DBMS performance tuning; database
transaction management covering transactions and the ACID properties,
concurrency control techniques, and database recovery management;
query processing and optimization techniques via query decomposition
and optimization options; introduction to distributed processing and
distributed database concepts, components and characteristics of
DDBMS, and distributed database design; web connectivity technologies
and XML; introduction to Business intelligence and data warehouses;
ingroduction to Big data, NOSQL and cloud databases; and database
security and database administration.

Enforced Prerequisite at Enrollment: IST 210 and IST 242

ETI 463: Distributed Database Management Systems
3 Credits
Today, most enterprise databases are no longer a centralized data store
that is accessed by thousands of users from multiple locations which
may be globally situated. These databases are typically web-based
and distributed across multiple sites for availability, low latency and
better reliability. This course exclusively focuses on the design and
system issues related to such distributed database systems. An initial
review of relational DBMS is required in the first week of the course.
Students will learn the architectural options and design issues and
choices for DDBMSs. Design considerations include fragmentation
alternatives (vertical or horizontal), fragment allocation and the data
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directory. Database integration covers at schema matching, integration, and mapping. Data cleaning is also studied under database integration. Processing distributed queries is challenging, and this topic is studied next by first trying to understand the query processing problem followed by: the objectives for query processing, characterization of query processors and layers of query processing. Query decomposition and localization of distributed data is then studied. The next issue is the problem of optimizing distributed queries using various techniques such as centralized query optimization, join ordering in distributed queries and distributed query optimization using dynamic, static. Semi-join and hybrid approaches. The ACID properties of transactions are studied and different types of transactions, and this is followed by distributed concurrency control using techniques such as locking, timestamps, and optimistic concurrency control algorithms. Deadlock management which is a problem in concurrency control schemes is also studied. Distributed reliability to address failures in DDBMSs is addressed by studying local reliability protocols, distributed reliability protocols, dealing with site failures and network partitioning. Data replication is an important aspect of reliability and various replication update management strategies and replication protocols are studied. Modern databases are web-based and this topic is considered next. Topics studied include: web searches, web querying and distributed XML processing. Many databases have moved to the cloud and cloud data management covers: cloud deployment models, service models SQL data services, and so on.

**Enforced Prerequisite at Enrollment:** IST 220 and IST 242 and ETI 461

**ETI 494:** Research Project

1-12 Credits/Maximum of 12

Supervised student activities on research projects identified on an individual or small-group basis.

**ETI 496:** Independent Studies

1-18 Credits/Maximum of 18

Creative projects, including research and design, that are supervised on an individual basis and that fall outside the scope of formal courses.

**ETI 497:** Special Topics

1-9 Credits/Maximum of 9

Formal courses offered infrequently to explore, in depth, a comparatively narrow subject which may be topical or of special interest.

**ETI 499:** Foreign Studies

1-12 Credits/Maximum of 12

Courses offered in foreign countries by individual or group instruction.

International Cultures (IL)