

0848



# Minnesota State University, Mankato HOLD and CLEAR buttons only compatible with Acrobat V. 4 and 5 Curriculum Proposal

Please type or select the requested information. Print completed forms, add appropriate paper attachments, and route through MSU's curricular process for recommendations and decisions.

(Check all that apply):		Proposal # <u>90</u>
College: <u>Science, Engineering and Technology</u>	<input checked="" type="checkbox"/> Undergraduate	Effective Date of Change:
Department: <u>Information Systems &amp; Technology</u>	<input type="checkbox"/> Graduate	Academic Year <u>07-08</u>
Program: <u>Information Technology</u>	CIP # _____	(For Office Use Only)
Type of Change: <u>PROGRAM PROPOSALS</u>	Course Designator and Number	Number of Credits
Proposed: <u>New Minor</u>		
Title Current: _____		
Title Proposed: <u>Database Technologies minor</u>		20
24-Char. Abbrev: <u>Database Techn. Minor</u>		(if applicable)

Include a course or program description for the Bulletin (30-40 words maximum for courses, 100 for programs):

The Database Technologies minor provides students with the necessary knowledge to apply information technology principles and theory so they are able to address real world business and organizational challenges and opportunities. This minor focuses on planning, designing, programming and developing secure databases, and the challenges and specific issues in maintaining, managing and securing databases. Students are introduced to the security challenges and threats in database systems and are provided an understanding of the state-of-the art security technologies, and data recovery strategies.

### Rationale or Justification for change:

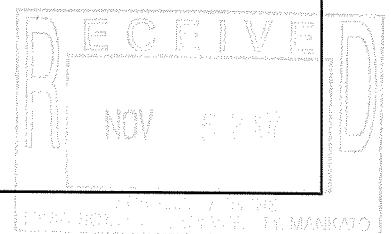
Robust and secure databases are critical to businesses and organizations in order to feed information and to make the related decision making processes effective and error free. Currently 'Database Technologies' is one of the areas of specialization already available in the Information Technology program. Courses have been selected from this specialization to create a minor that will allow students from other disciplines to obtain knowledge and skills in the application of databases.

### \*\*\*For General Education or Cultural Diversity Courses Only\*\*\*

<b>General Education Course:</b>		<b>Cultural Diversity Course:</b> (Please check one.)
GE Category #	GE Category Name (Maximum of 3 Categories)	
<u>N/A</u>		<input type="checkbox"/> Core (At least 75% devoted to topics of race, gender, sexual orientation, age, class, and disabilities as they occur in United States Society.)  <input type="checkbox"/> Related (At least 25% devoted to the above topics or to a global perspective on topics related to African American, Asian, Hispanic, and Native American inhabitants of the United States.)
<u>N/A</u>		
<u>N/A</u>		
<p>? For Writing Intensive Courses, attach a description of the kind and quantity of writing.          ? For Upper Division Courses, include a description of the respects in which it is broad and general rather than narrow and specific, and so suitable as GE.</p> <p>Attach paper copies of the following:</p> <ol style="list-style-type: none"> <li>Syllabus or course outline.</li> <li>Course's student learning outcomes associated with each GE competency or CD designation.</li> <li>List of strategies to be used to assess students' achievement of each GE competency or CD designation.</li> </ol>		

### \*\*\*For New Courses\*\*\*

(Check all that apply):	Instructional Type: <u>Lecture</u>	Course will be offered:
<input type="checkbox"/> Course is an elective.	Grading Format: <input type="checkbox"/> Grade <input type="checkbox"/> P/N	<input type="checkbox"/> Fall Semester
<input type="checkbox"/> Course is required for program		<input type="checkbox"/> Spring Semester
<input type="checkbox"/> Pre- or Co-requisites:		<input type="checkbox"/> Summer Session
<input type="checkbox"/> Other courses are being changed or eliminated. (Explain.) _____		
<input type="checkbox"/> Course content or title is similar to courses in other departments. (Attach copy of letter of agreement with other program(s) contacted. Indicate the nature of the discussions and/or resolution of differences or potential conflicts.)		
<p>Attach paper copies of the following:</p> <ol style="list-style-type: none"> <li>Syllabus or course outline.</li> <li>Course's student learning outcomes.</li> <li>A list of resources required to offer and support this course.</li> <li>A description of how teaching this course will affect department staffing.</li> <li>If 400/500 level course, an explanation of added expectations of graduate students.</li> </ol>		





Minnesota State University, Mankato  
Curriculum Proposal

\*\*\*Signature Page\*\*\*

**Department**  
 Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)  
 Comments: \_\_\_\_\_

*[Signature]* 10-18-07  
 Department Chair Date

**College Curriculum Committee**  
 Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)  
 Comments: \_\_\_\_\_

*[Signature]* 10/30/07  
 Committee Chair Date

**College Dean**  
 Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)  
 Comments: \_\_\_\_\_

*[Signature]* 11/2/07  
 Dean Date

**General Education Subcommittee**  
 Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)  
 Comments: \_\_\_\_\_

\_\_\_\_\_  
 General Education Subcommittee Chair Date

**Undergraduate Curriculum and Academic Policy Committee**  
 Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)  
 Comments: \_\_\_\_\_

*[Signature]* 12/10/07  
 UCAP Faculty Chair Date

**Faculty Association Graduate Committee**  
 Recommended  
 Not Recommended  
 Comments: \_\_\_\_\_

\_\_\_\_\_  
 Faculty Association Graduate Chair Date

**Graduate Dean**  
 Recommended  
 Not Recommended  
 Comments: \_\_\_\_\_

\_\_\_\_\_  
 Graduate Dean Date

**Academic Affairs Council**  
 Recommended (Category/ies \_\_\_\_\_)  
 Not Recommended (Category/ies \_\_\_\_\_)  
 Comments: \_\_\_\_\_

*[Signature]* 12/20/07  
 Assistant Vice President Date

**Senior Vice President and Vice President for Academic Affairs**  
 Approved (Category/ies \_\_\_\_\_)  
 Not Approved (Category/ies \_\_\_\_\_)  
 Comments: \_\_\_\_\_

*[Signature]* 12/20/07  
 Sr. Vice President / Vice Pres. Academic Affairs Date

# Proposed Curriculum

## Database Technologies Minor

### **Database Technologies Minor (20 credits)**

IT 210 Fundamentals of Programming (4)

IT 214 Fundamentals of Software Development (4)

IT 340 Introduction to Database Systems (4)

*Choose two of the following Courses*

IT 440 Database Management Systems II (4)

IT 442 Database Security, Auditing, and Disaster Recovery (4)

IT 444 Data Warehousing and Mining (4)

## Database Technologies Minor Student Learning Outcome

The Database Technologies minor provides students with the necessary knowledge to apply information technology principles and theory so they are able to address real world business and organizational challenges and opportunities. This minor focuses on planning, designing, programming and developing secure databases, and the challenges and specific issues in maintaining, managing and securing databases. Students are introduced to the security challenges and threats in database systems and are provided an understanding of the state-of-the art security technologies, and data recovery strategies.

The student learning outcomes are as follows:

The Database Technologies minor will enable students to

- 1) Develop the planning, analytical and diagnostic skills needed in the design and management of databases.
- 2) Understand and use the vocabulary structures and forms of expression that characterize database management.
- 3) Design efficient queries for information retrieval, processing and storage.
- 4) Design commands to format and manipulate data, and create well formatted and appropriate reports.
- 5) Understand the models and mechanisms for access control, multi-level secure database architectures, recovery and fault tolerance, and the security problems raised by data warehousing and data mining.
- 6) Develop and implement a security plan for an enterprise level database.
- 7) Understand backup and recovery administration responsibilities.
- 8) Have a knowledge of team dynamics and the ability to work effectively in a team environment.

## Database Technologies Minor Assessment Plan (page 1/2)

Student Learning Outcomes (performance, knowledge, attitudes)	Related College Goals	Related Univ. Goals	Method(s) of Assessment	Who Assessed (Students from what courses - population)	When Assessed (dates)	Standard of Mastery/ Criterion of Achievement	What is Hoped to Be Learned?
1) Develop the planning, analytical and diagnostic skills needed in the design and management of databases.	1, 2, 4	2	A1, A2, A3	Courses in the minor	semester end	>80% passing	Core areas of Database design and management
2) Understand and use the vocabulary structures and forms of expression that characterize database management.	1, 2, 4	2	A1, A2, A3,	Courses in the minor	semester end	>80% passing	Database vocabularies
3) Design queries for efficient information retrieval, processing and storage.	1, 2, 4	2	A1, A2, A3,	Courses in the minor	semester end	>80% passing	Database queries
4) Design commands to format and manipulate data, and create well formatted and appropriate reports.	1, 2, , 4	2	A1, A2, A3,	Courses in the minor	semester end	>80% passing	Database reports
5) Understand the models and mechanisms for access control, multi-level secure database architectures, recovery and fault tolerance, and the security problems raised by data warehousing and data mining.	1, 2, 4	2	A1, A2, A3, A4, A5	Courses in the minor	semester end	>80% passing	Models of secure systems
6) Develop and implement a security plan for an enterprise level database;	1, 2, 3, 4	2	A1, A2, A3, A4	Courses in the minor	semester end	>80% passing	Design correct secure system
7) Understand backup and recovery administration responsibilities.	1, 2, 3, 4	2	A1, A2, A3, A4, A5	Courses in the minor	semester end	>80% passing	Backup and Recovery
8) Have a knowledge of team dynamics and the ability to work effectively in a team environment.	1, 2, 3, 4	2	A1, A2, A3, A5	Courses in the minor that require team projects	semester end	>80% passing	Work effectively in team

## Database Technologies Minor Assessment Plan (page 2/2)

What will the program do with results of information? The department will use the results of information to determine what changes may be needed to improve the minor, and to implement those changes.

### Codes for methods of Assessment:

- A1 Evaluation of student performances in their exams, home works, quizzes
- A2 Course Evaluation
- A3 Student Survey
- A4 Research papers
- A5 Project report submission

### Numbers Used for Related College Goals column:

Extracted from: <http://cset.mnsu.edu/about/mission-goals.html>

1. Provide students an in-depth knowledge of their discipline, accompanied with critical thinking skills, laboratory skills and problem solving skills,
2. Assure that all graduates of the college have strong oral and written communication skills.
3. Provide each major a thorough understanding of the ethical nature of their discipline and its application to societal needs.
4. Commit to life-long learning through a variety of technologies and research tools so each learner can adapt their knowledge base to new situations.

### Numbers used for Related Univ. Goals column:

Extracted from: <http://www.mnsu.edu/supersite/about/mission.html>

2. The University will prepare students for careers and for life-long learning by providing a clearly defined general education program and focused undergraduate preprofessional, professional, and liberal arts programs.

## **Database Technologies Resources Requirements:**

### **Resources Required to Offer and Support the New Minor**

Resources currently in place within the department are adequate to support this minor. All courses included in the minor are currently offered by the department. Sufficient seats are available in the classes because of current low enrollments.

### **Impact on Staffing in the Department to Support the New Minor**

This minor will be able to be offered with the current staffing. All courses included in the minor are currently offered by the department and there is sufficient seating in the classes because of low enrollments. No new sections will be required.

### **List of Additional Library Holdings Required for this Major**

Resources currently in place within University Library will support this new minor.

ISYS & IT Faculty Meeting  
Monday 10-15-07

In attendance: Tietz, Cornell, Schilling, G. Asher, Slack, Hart

Lee Cornell made the motion to approve the minutes from the 10-3-07 meeting. Allan Hart seconded the motion.

Motion was made by Lee Cornell to make IT 100 meet Gen Ed category 9 (Ethic & Civic Responsibility). Motion seconded by Susan Schilling. No discussion, motion passed.

Motion was made by Gregg Asher to change the name of IT 462 from Network Administration and Programming to Network Security, Administration & Programming, which will better reflect the course content. Allan Hart seconded the motion. No discussion. Motion passed.

Lee Cornell made the motion to create 3 new minors with the goal of converting these to Undergraduate certificates in the near future. Susan Schilling seconded the motion. No discussion, motion passed.

**i. Database Technologies Minor (20 credits)**

- 210
- 214
- 340

Plus any two of:

- 440
- 442
- 444

**ii. Networking and Information Security Minor (20 credits)**

- 210
- 214
- 350
- 360

Plus any one of:

- 450
- 460
- 462

**iii. Software Development Minor (20 credits)**

- 210
- 214
- 310
- 380

Plus any one of:

- 414
- 480
- 484