Eastern Illinois University
New/Revised Course Proposal Format
(Approved by CAA on 4/3/14 and CGS on 4/15/14, Effective Fall 2014)

CGS Agenda Item: 19-19
Effective Spring 2020

Banner/Catalog Information (Coversheet)

1. **_X__New Course or _____Revision of Existing Course**
2. **Course prefix and number:** __ MIS/CIT 4770_____
3. **Short title:** _ Database and Data Management _____
4. **Long title:** _Database and Data Management_____
5. **Hours per week:** __3_ Class __0_ Lab _3_ Credit
6. **Terms:** _X__ Fall ___ Spring __ Summer _X_ On demand
7. **Initial term**: ___ Fall _ X __ Spring ___ Summer Year: _2020___
8. **Catalog course description:** A study of database structures, design, and development. Includes the use of CASE tools and enterprise database management systems. Topics include: data normalization, data definition language, data manipulation language, data integrity, database applications development, and data mining.
9. **Course attributes:**

   General education component: ___ N/A _____

   ___ Cultural diversity ___ Honors ___ Writing centered ___ Writing intensive ___Writing active
10. **Instructional delivery**
    Type of Course:

    _X__ Lecture ___ Lab ___ Lecture/lab combined ___ Independent study/research

    ___ Internship ___ Performance ___ Practicum/clinical ___ Other, specify: _____

    Mode(s) of Delivery:

    _X__ Face to Face _X__ Online ___ Study Abroad

    _X_ Hybrid, specify approximate amount of on-line and face-to-face instruction: A maximum of 49% of the course will be online.
11. Course(s) to be deleted from the catalog once this course is approved. ___MIS 4200_____
12. **Equivalent course(s):** _____

    a. Are students allowed to take equivalent course(s) for credit? ___ Yes ___ No
13. **Prerequisite(s):** _ BUS 3500, or AET 4163, or CSM 3870 or permission of the Associate Chair, School of Business __

    a. Can prerequisite be taken concurrently? ___ Yes _X__ No

    b. Minimum grade required for the prerequisite course(s)? _C__

c. Use Banner coding to enforce prerequisite course(s)? _X_ Yes ___ No

d. Who may waive prerequisite(s)?

___ No one __ Chair ___ Instructor _____ Advisor _X_ Other (specify): Associate Chair

14. Co-requisite(s): ___NONE_____

15. Enrollment restrictions

a. Degrees, colleges, majors, levels, classes which <u>may</u> take the course: _

Junior or Senior or Graduate Standing.

b. Degrees, colleges, majors, levels, classes which may <u>not</u> take the course: __ Freshmen, Sophomore_____

16. Repeat status: _X__ May not be repeated ___ May be repeated once with credit

17. Enter the limit, if any, on hours which may be applied to a major or minor: ___

18. Grading methods: _X__ Standard ___ CR/NC __ Audit ___ ABC/NC

19. Special grading provisions:

___ Grade for course will <u>not</u> count in a student's grade point average.

___ Grade for course will <u>not</u> count in hours toward graduation.

___ Grade for course will be removed from GPA if student already has credit for or is registered in: _____

_X_ Credit hours for course will be removed from student's hours toward graduation if student already has credit for or is registered in: _CSM 3950_____

20. Additional costs to students:
Supplemental Materials or Software_____NONE_____

Course Fee _X__No ___Yes, Explain if yes_____

21. Community college transfer:

___ A community college course may be judged equivalent.

_X__ A community college may <u>not</u> be judged equivalent.

Note: Upper division credit (3000+) will <u>not</u> be granted for a community college course, even if the content is judged to be equivalent.

Rationale, Justifications, and Assurances (Part I)

1. _X__Course is required for the major(s) of _Management Information Systems, Computer and Information Technology___

   _X__Course is required for the minor(s) of _Management Information Systems_____

   ___Course is required for the certificate program(s) of _____

   _X_ Course is used as an elective for OSC Minor, Business Analytics Minor, MBA

2. **Rationale for proposal**: Database and Data Management contains important subject matter for students majoring in MIS, CIT, and CSM. This course is proposed as part of an effort to share courses with CSM and CIT. To that end, the MIS 4200 course will be split in to two separate courses: MIS 4770 (Database and Data Management) and MIS 4760 (System Analysis and Development).

3. **Justifications for (answer N/A if not applicable)**

   Similarity to other courses:

   This is part of an effort to share courses with CSM and CIT. The original course MIS 4200 will be split in to two separate courses, MIS 4770 Database and Data Management and MIS 4760 System Analysis, Design and Development. This course will be shared with CSM and CIT. The BS in Computer Science program offers CSM 3950 (Introduction to Database Concepts) as a core course. CSM 3950 (Introduction to Database Concepts) has very significant overlap with MIS 4770 (Database and Data Management) but since computer science and computer and information technology students will be required to take MIS 4770 this is not an issue with either program. The MS in Technology program offer two graduate level elective classes with database content including TEC 5323 (Advanced Database Technology) and TEC 5363 (Database Security and Reliability). There is very little overlap with and TEC 5363 (Database Security and Reliability) as the MIS 4770 (Database and Data Management) class has very minimal coverage of either the security and reliability topics. There is more but still minimal overlap between MIS 4770 and TEC 5323 (Advanced Database Technology) because the former focuses largely on creating and using databases effectively while the latter focuses on architecture, operations, system maintenance and management of databases.

   Prerequisites: This course builds on material from BUS 3500, or CSM 3870, or AET 4163. A successful completion of any of these courses is required to enroll in this course.

   Co-requisites: NONE

   Enrollment restrictions:

   This perquisite for this course require students to be juniors, seniors or graduate students.

   Writing active, intensive, centered: N/A

4. **General education assurances (answer N/A if not applicable)**

   General education component: N/A

   Curriculum: N/A

   Instruction: N/A

Assessment: N/A

5. Online/Hybrid delivery justification & assurances (answer N/A if not applicable)

Online or hybrid delivery justification:
Online or hybrid delivery justification: Offering and instructing this course through a hybrid or online model allows and increases the enrollment probability of students in the Summer semester who have moved away from campus and may attempt an equivalent course at another institution. An online course gives EIU the opportunity to market to these students as well as other students interested in taking the course in an alternative format. EIU School of Business continues to deliver high quality education through traditional methods of teaching and technologically advanced methods such as online and hybrid education. Students are able to watch recorded videos whenever they prefer, stop the video, take notes and ask questions of the instructor and their peers. Database and Data Management content is suitable for online or hybrid education.

Instruction: Lectures from the face-to-face courses may be recorded and posted online for students to view. Other online components such as tutorials, videos, and online discussion forums can be included. All faculty who will deliver this course online are/will be OCDI (or appropriate equivalent) trained

Integrity: Students will take exams through an online testing taking monitoring system, or they will take them at a proctored facility such as a community college in their area.

Interaction: At the discretion of the faculty, provisions and requirements would vary but generally will utilize Email, Web-Based Discussions, and Web-conferencing.

Model Syllabus (Part II)

Please include the following information:

1. Course number and title
MIS 4770 – Database and Data Management

2. Catalog description
A study of database structures, design, and development. Includes the use of CASE tools and and enterprise database management systems. Topics include: data normalization, data definition language, data manipulation language, data integrity, database applications development, and data mining.

3. Learning objectives.
Upon completion of this course, students will be able to:
1. Design, develop and implement applications database according to user requirements and create appropriate diagrams and documentation using Computer Aided Software Engineering (CASE) and other tools. (CT 1-4, WR 1-3, SL 1-7) (Graduate 1, 2, 3)
2. Normalize database. (CT 1-4) (Graduate 1, 2)
3. Implement integrity and constraints in databases applications. (CT 1-4, WR 4) (Graduate 1, 2)
4. Create Structured Query Language (SQL) such as data definition (DDL) and data manipulation (DML) code. (CT 1-4, WR 4, SL 1, QR 5-6) (Graduate 1, 2, 3)
5. Perform basic data mining. (CT 1-6, WR 2, SL 1, SL 3, QR 2-6) (Graduate 1, 2, 3)

4. Course materials.
This will include lecture notes, online resources (such as videos), etc as well as textbook(s). Textbook(s) may vary over time as new materials become available, but the following is representative:

Hoffer, Ramesh and Topi, Modern Database Management, 13th edition, 2018

Joan Casteel, Oracle 12c: SQL, 3rd Edition, Course Technology, 2016
Oracle Data Miner: Free documentation available at:
http://www.oracle.com/technetwork/database/options/odm/dataminerworkflow-168677.html

5. Weekly outline of content.

The following is a tentative outline of the course; it might change, based on time constraints:

Week	**Topics**	**75-minutes class period equivalents**
Week 1	Introduction to database design	2 periods
Week 2-3	Data modeling	4 periods
Week 4-5	Logic modeling and Normalization	4 periods
Week 6	Creating and modifying database structure	2 periods
Week 7	Implementing integrity and constraints	2 periods
Week 8	Managing (i.e., inserting, updating, deleting) records and views	2 periods
Week 9-10	Query, joins (i.e., inner, outer, self), nested query	4 periods
Week 11	Designing forms and reports	2 periods
Week12-13	Database application development	4 periods
Week 14-15	Data mining (e.g., descriptive and predictive analytics)	4 periods
Week 16	Final Exam	2 hours
	Total	Thirty 75-minutes periods + Two hours of final exam

6. Assignments and evaluation, including weights for final course grade.
Grade weighting may vary by instructor, but it is generally considered as follows:

	Undergraduate	Graduate
Assignments	10%	10%
Participation	10%	10%
Mid-term Exam	30%	25%
Final Exam	30%	25%
Group Project	20%	20%
Individual Project	N/A	10%
Total	100%	100%

7. Grading scale.

90% or better	A
80-89%	B
70-79%	C
60-69%	D
Less than 60%	F

8. Correlation of learning objectives to assignments and evaluation.

The students' achievement of the stated course objectives will be assessed as follows:

Objectives	**Assignments** (10%)	**Participation** (10%)	**Group Project** (20%)	**Midterm** (25-30%)	**Final** (25-30%)	**Individual Project** (0-10%)
1 (CT 1-4, WR 1-3, SL 1-7) (Graduate 1, 2, 3)	X	X	X	X	X	
2 (CT 1-4) (Graduate 1, 2)	X	X	X	X	X	
3 (CT 1-4, WR 4) (Graduate 1, 2)	X	X	X	X	X	
4 (CT 1-4, WR 4, SL 1, QR 5-6) (Graduate 1, 2, 3)	X	X	X		X	
5 (CT 1-6, WR 2, SL 1, SL 3, QR 2-6) (Graduate 1, 2, 3)	X	X				X

Date approved by the department: MIS/OM: November 6, 2018
Date approved by the school: School of Business: November 14, 2018 (Curriculum); December 4, 2018 (Grad)
Date approved by the school: School of Technology: December 3, 2018
Date approved by the college curriculum committee: January 22, 2019
Date approved by the Honors Council *(if this is an honors course):*
Date approved by CAA: CGS: