STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

MASTER SYLLABUS

CITA/MINS 430 – DATA AND KNOWLEDGE MANAGEMENT

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Canino School of Engineering Technology
Department of Decision & Graphic Media Systems
Fall/2018

A. % **TITLE**: Data and Knowledge Management

B. % **COURSE NUMBER:** MINS/CITA 430

C. % **CREDIT HOURS: (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)**

 # Credit Hours: 3
 # Lecture Hours: 3 **per week**
 # Lab Hours: **per week**
Other: **per week**

Course Length: 15 **Weeks**

D. **WRITING INTENSIVE COURSE**: No

E. **GER CATEGORY:** No

F. **SEMESTER(S) OFFERED:** Fall/Spring

G. **COURSE DESCRIPTION:** This course focuses on the development of a knowledge-management system using an organization's tacit and explicit knowledge to execute its strategy. The course explores practices entailed in developing a knowledge infrastructure, managing the interaction of people and technology, valuing knowledge assets, leveraging teams, and transferring knowledge across organizations.

H. % **PRE-REQUISITES/CO-REQUISITES:**

a. Pre-requisite(s): CITA/MINS 300 Management Information Systems
b. Co-requisite(s): None

I. % **STUDENT LEARNING OUTCOMES:**

Course Student Learning Outcome [SLO]	***PSLO***	***GER***	***ISLO***
a. Interpret the concepts of knowledge management	2. Identify issues and collaborate on solutions concerning IT in an effective and professional manner		2 [CA]
b. Analyze knowledge processes within an organization	3. Demonstrate a solid understanding of the methodologies and foundations of IT		2 [CA]
c. Evaluate approaches that organizations may take to make a significant contribution to an organization's knowledge processes, and analyze the issues involved	3. Demonstrate a solid understanding of the methodologies and foundations of IT		2 [CA]
d. Apply knowledge management technologies to make intellectual capital	3. Demonstrate a solid understanding		2 [CA] 5

decisions in knowledge intensive organization	of the methodologies and foundations of IT		
e. Analyze the underlying impact of macro-economic industry and organizational effects issues on human capital metrics	3. Demonstrate a solid understanding of the methodologies and foundations of IT		2 [CA]
f. Analyze practical situations, preparing, and proposing recommendations for enhancement of knowledge management within an organization	2. Identify issues and collaborate on solutions concerning IT in an effective and professional manner 3. Demonstrate a solid understanding of the methodologies and foundations of IT		2 [CA] 5

KEY	**Institutional Student Learning Outcomes [ISLO 1 – 5]**
ISLO #	**ISLO & Subsets**
1	**Communication Skills** Oral [O], Written [W]
2	**Critical Thinking** *Critical Analysis [CA] , Inquiry & Analysis [IA] , Problem Solving [PS]*
3	**Foundational Skills** *Information Management [IM], Quantitative Lit,/Reasoning [QTR]*
4	**Social Responsibility** *Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]*
5	**Industry, Professional, Discipline Specific Knowledge and Skills**

J. APPLIED LEARNING COMPONENT: **Yes_____** **No___X___**

K. TEXTS:

Dalkir, Kimiz (2017) Knowledge Management in Theory and Practice, 3rd edition, The MIT press

L. REFERENCES: None

M. EQUIPMENT: Technology Enhanced Classroom

N. GRADING METHOD: Standard A-F grading

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

Essays, quizzes, exams.

P. DETAILED COURSE OUTLINE:

I. Principles of Knowledge Management

A. Overview of Knowledge Management
1. What is Knowledge Management
2. Knowledge Management Systems

B. The Nature of Knowledge
1. Alternative Views of Knowledge
2. Different Types of Knowledge
3. Locations of Knowledge

C. Knowledge Management Solutions
1. Knowledge Management Processes
2. Knowledge Management Systems
3. Knowledge Management Infrastructure

D. Organizational Impacts of Knowledge Management
1. Impact on People
2. Impact on Processes
3. Impact on Products
4. Impact on Organizational Performance

E. Factors Influencing Knowledge Management
1. Effects of Task Characteristics
2. Effects of Knowledge Characteristics
3. Effects of Organizational and Environmental Characteristics

F. Knowledge Management Assessment of an Organization
1. Types of KM Assessment
2. Assessment of Knowledge Management Solutions
3. Assessment of Knowledge
4. Assessment of Impacts

II. Knowledge Management Technologies

A. Technologies to Manage Knowledge
1. Artificial Intelligence
2. Digital Libraries,
3. Repositories

B. Preserving and Applying Human Expertise: Knowledge-Based Systems
1. Representing Knowledge
2. Automated Reasoning Process
3. Developing Knowledge-Based Systems
4. Knowledge-Based System Tools

C. Using Past History Explicitly as Knowledge: Case-Based Systems
1. Weaknesses of Rule-Based Systems
2. Basic Concepts in Case-Based Reasoning
3. Indexing and Case Library Organization
4. Matching and Retrieval
5. Evaluation and Adaptation

D. Knowledge Elicitation: Converting Tacit Knowledge to Explicit

1. Manual Knowledge Elicitation
2. Facilitating the Knowledge Elicitation Process
3. Automating the Knowledge Capture Process

E. The Computer as a Medium for Sharing Knowledge
1. World Wide Web
2. WEB Search Engines
3. Network Security
4. Workflow Systems
5. Document Management via the Web

F. Discovering New Knowledge:
1. Symbolic Approach
2. Artificial Neural Networks
2. Statistical Methods

III. Knowledge Management Systems

A. Knowledge Discovery: Systems that Create Knowledge
1. Designing the Knowledge Discovery Systems
2. Discovering Knowledge on the Web
3. Data Mining and Customer Relationship Management
4. Barriers to the Use of Knowledge Discovery Systems

B. Knowledge Capture Systems: Systems that Preserve and Formalize Knowledge;
1. Concept Maps
2. Context Based Reasoning
3. Barriers to the Use of Knowledge Capture Systems

C. Knowledge Sharing Systems: Systems that Organize and Distribute Knowledge
1. Designing the Knowledge Sharing Systems
2. Lessons Learned Systems
3. Barriers to the Use of Knowledge Sharing Systems

D. Knowledge Application Systems: Systems that Utilize Knowledge
1. Technologies for Knowledge Application Systems
2. Developing Knowledge Application Systems
3. Types of Knowledge Application Systems
4. Limitations of Knowledge Application Systems

IV. The Future of knowledge management
A. Protecting Intellectual Property
B. Knowledge Management: A New Paradigm for Decision Making
C. Looking at the Future

Q. <u>LABORATORY OUTLINE</u>: Not applicable