

TO: The Engineering Faculty
FROM: The Faculty of the School of Electrical Engineering
RE: Changes in EE 562

The Faculty of the School of Electrical Engineering has approved the following course changes in EE 562. This action is now submitted to the Engineering Faculty with a recommendation for approval.

FROM:

EE 562. INTRODUCTION TO DATA MANAGEMENT & ARTIFICIAL INTELLIGENCE
Sem. 2, class 3, credit 3
Prerequisite: Graduate standing or consent of instructor

Emphasis on the use of artificial intelligence techniques for the design of systems which understand queries in English and certain other high level formal languages and retrieve data from large data bases. Data models and data independence, normalization in relational data bases, development of high level query languages, database management systems, different approaches to machine understanding of queries in English and fuzzy queries intelligent databases and knowledge bases.

Objective: To acquaint graduate students with up-to-date knowledge on database systems and applications of AI techniques to databases.

Text: C. J. Date, *An Introduction to Data Base Systems*, 4th ed., Volume 1, Addison Wesley. (0-201-14201-5)

Outline:

| | Weeks |
|--|-------|
| Overview and Introduction | 0.5 |
| Data Models | 1.0 |
| Relational Algebra | 1.0 |
| DB2 and SQL | 1.0 |
| INGRES and QUEL | 1.0 |
| Query by Example | 1.0 |
| Design of Databases: Dependence & Normalization | 2.5 |
| Other DBMS Issues | 1.0 |
| Distributed Databases | 0.5 |
| Knowledge Representation Methods | 1.0 |
| Knowledge Base and Database | 1.0 |
| High-Level Languages and English for Queries | 0.5 |
| Parsing by Augmented Transition Networks | 0.5 |
| Design of Database Front Ends to Accept English Queries | 1.0 |
| Some Commercial Front End Systems | 0.5 |

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE COMMITTEE ON
FACULTY RELATIONS

MINUTES#846.....

DATE11/15/95.....

R. Neal Houze
CHAIRMAN CFR

TO:

EE 562. INTRODUCTION TO DATA MANAGEMENT

Sem. 2, class 3, credit 3

Prerequisite: Graduate standing or consent of instructor

Emphasis is on the design of systems which can manipulate and retrieve data from large data bases using high level formal languages. Topics covered are: data models and data independence, normalization in relational data bases, development of high level query languages for relational and hierarchical models, pictorial query languages, object oriented systems and object oriented data bases. The course includes a project which accounts for about twenty percent of the grade for the course.

Objective: To acquaint graduate students with up-to-date knowledge of the theory of relational and object oriented databases and the development of database systems for applications.

References:

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Richard Frost, *Introduction to Knowledge Base Systems*, McMillan, 1986.

J. D. Ullman, *Principles of Data Base Systems*, Computer Science Press.

Outline:

| Chapter | Weeks |
|---|-------|
| I. Knowledge and data and information | 1/2 |
| II. Representation of knowledge in conventional data base system | 1 |
| III. Semantic modelling: entity relationship | 1/2 |
| IV. Overview of data base management | 1/2 |
| V. Relational data structure | 1 |
| VI. Relational integrity rules | 1/2 |
| VII. Relational algebra | 1 |
| VIII. First order predicate calculus | 1 |
| IX. Relational calculus | 1 |
| X. QBE | 1 |
| XI. Data manipulation by SQL | 1 |
| XII. Normal forms (paper by Salzburg) and formal design theory of data bases | 1 |
| XIII. Knowledge intensive data models in engineering: object oriented framework | 1 |
| Visual query language for graphical interaction | 1 |
| XIV. Association algebra: a mathematical foundation for object oriented databases | 1/2 |
| XV. Object oriented intelligent computer integrated design, process planning and inspection | 1/2 |
| XVI. Intelligent computer integrated manufacturing | 1/2 |
| XVII. Computer supported cooperative work | 1/2 |

REASON: The proposed changes more accurately reflect the course as it is now taught.

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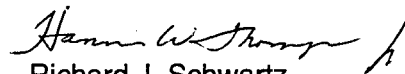
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