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## Teaching of Information storage and retrieval at the Department for Information Science of the University of Amsterdam

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## Abstract:

*In Sept 2002 the Faculty of Humanities of the University of Amsterdam will replace the current Master curriculum of 4 years by a Bachelor – Master system: 3 years for the BA and 1, 1,5 or 2 years for the MA. At the same time the separate curricula for Archivistics and Information Science will be replaced by one integrated curriculum. In this paper after a general overview the modules dealing with information storage and retrieval are discussed.*

### Introduction

In September 2002 the teaching at the Department for Information Science will undergo major changes. The so-called "bovenbouwstudies[1]" *Archive Science* and *Information Science* will be replaced by one integrated Bachelor Study (three years), followed by two Master Studies: *Information Science* (one year) and *Archive Science* (one and a half year).

A year will contain six courses ("Modules") of each 280 hours study.

In the following I will first give an overview of all subjects, and then a more detailed account about the modules that deal with information storage and retrieval.

**Overview of the Bachelor Information Science**

The bachelor study consists in total of 18 modules. 8½ modules are information science modules, 6 modules are optional subjects, of which at least 3 should be linked to a minor, and 3½ are general modules.

@ Modules of information science (major)

# Optional modules

& General modules

*First year*

- o   Information and society @
- o   Information and communication law &
- o   Research skills (140 hours: &, 140 hours: @)
- o   Documentary information sources @
- o   Technology and cultural memory &
- o   Culture and society (140 hours) &
- o   Information landscape (140 hours) @

*Second year*

- o   Information and organization @
- o   Philosophy of Science (140 hours: &, 140 hours: @)
- o   Retrieval and representation @
- o   Minor (3 linked modules) #

*Third year*

- o   Methods and techniques of research @
- o   Information technology and systems @
- o   Thesis @
- o   Optional subjects (three times one module) #


**Overview of the Master Information Science**

- Information logistics
- Information retrieval
- Evaluation of the information facilities
- A integration module
- Thesis (two modules)

**Overview of the Master Archive Science**

- Archiving processes

- Information retrieval

- The social context of archives

- Comparative archive science

- Thesis (two modules)

- Traineeship (three modules)

**Information storage and retrieval modules**

Of the 8½ modules of the Bachelor Information Science that form the major Information Science 2½ modules deal with information storage and retrieval. In the two Masters there is a common module *Information Retrieval*. In each year there is at least a half module for what I call in this paper *Information Storage and Retrieval*. With intention I avoid to use the phrase *Cataloguing and Indexing*, because the content of the modules incorporates more than just formal and subject cataloguing. Database theory plays also an important role. In general the subject of the modules will be: how to organize information in such a way that it can be found by interested persons. This question has two faces: at one hand cataloguing (or description) and indexing, and at the other hand: searching. In the pre-computer era the searchers had to know the rules used for catalogues en inventories. From early youth we had to remember that it was more important to know the author of a book than to know its title. At least in continental Europe searching on a title was only possible for books without an author, or with more than three authors. Nowadays the title is more often used to find a document than its author. Documents in archives are these days often electronically available what means that searching can be done by using title words, or words in the texts. Also archive inventories can often be searched by free text methods.

**The first year: Research skills**

In the first year half of the module *Research skills* will be used to give the students insight how to describe and index documents in the setting of libraries, bibliographies and archives. This means that we will organize exercises in cataloguing and indexing and the making of inventories for archives. It does not mean that we will teach all the details of the (Dutch) cataloguing rules or classifications like the *Universal Decimal Classification*. The punctuation of the *ISBDs* is important for programmers of library software, if at all, but the fields of the *ISBDs* are important because they indicate which characteristics of documents are important.

**Second year: Retrieval and representation**

The central theme of this module is how information and its users can be brought together, looked at from both the side of the searcher of information and from the side of the producer of it.

The module has the following parts:

- Information objects and pragmatics of information.

- Searching in the Internet and search engines

- Searching of non-digital information. Access to collections of libraries, archives and museums.

- *Surrogate records* for documents and representation.

- Standards for description like cataloguing rules.

- Information languages (classification, thesauri, vocabularies).

- *Encoding*. Standards like MARC, EAD, SGML and XML

- Knowledge intensive methods of offering access to information, like data mining.

The purpose of this module is to give the student insight in and skill with the functions of retrieval, the basic concepts of retrieval and representation, the standards for *encoding* and the use of them, the description and application of metadata for sources of information, strategies for searching, and the relation between search strategies and description.

**Third year: Information technology and information systems**

In this module the structure and internal working of information systems is the central topic. The concept information system is treated in general with special attention for the storage of information in databases. The emphasis is for a special kind of information systems: systems that manage information objects for a more or less in advance defined group of users or conglomerate of questions. There is no attention for the genesis of information in processes in institutions and the like. Managing of metadata on the base of IRDS (Information Resource Dictionary System) is another topic of this module.

The students which have finished this module will have insight in and skills with information systems and the information technology relevant for these systems, the characteristics and components of information systems, metadata and authority control, functions of database management systems and database search languages like SQL.

**Master courses: Information storage and retrieval**

This module is a common module for both master courses of the Department of Information Science. It deals with the organization and technology of information systems and the techniques used for providing access to the information contained in them. Points of departure are the possibilities that databases provide, the use of artificial intelligence and the expectations of the end-users. Special attention will be given to new developments such as automatic cataloguing and indexing, distributed databases, search engines, intelligent agents and developments in the field of metadata.

A few themes (in random order):

- Relational and hierarchical databases

- Functional requirements for record keeping systems (bibliographical and authority records)

- Data and metadata: differences and correspondences

- Information languages: controlled and uncontrolled; automated control

- Multilingual information languages

- Metadata-initiatives, such as Dublin Core, DOI, RDF, EAD, etc.

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[1] A "bovenbouwstudie" is a three-year course leading to a Master title after a preparatory study of one year.