

York College of the City University of New York
Department of Business and Economics

Contact Details:

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Course Information:

Section: **28632**

Lecture Time: **18:00 – 21:50 | Fridays**

Classroom: **AC 2C02**

Prerequisite: **MTH102, CS 172& BUS 286**

Course Description:

This is a **four credit** class.

The increase in the amount of data that is available on the Web in recent years means that automatic methods of Information Retrieval (IR) have acquired greater significance. Furthermore, this data exists in multiple forms (text, image, video, etc) and it is becoming increasingly important that the techniques deployed in IR are able to perform search and retrieval operations across these distinct formats. For the purpose of this course IR is the study of the indexing, processing, and querying of both textual and image data.

Course Objectives:

Upon completion of this course, the student will obtain confidence in understanding and applying key concepts, including:

- an introduction to the basic principles and techniques used in information retrieval;
- to demonstrate how statistical models of language can be used to solve the document retrieval problem;
- to explore a range of image processing techniques used in IR;
- to show how combined models for language and image processing can enhance document retrieval.

- to enable students to evaluate the techniques of representation, storage and retrieval of information and to apply them in a professional context.

Learning Outcomes

Upon completion of this course you will be able to:

- gain an understanding of the basic concepts and techniques in Information Retrieval;
- understand how statistical models of text can be used to solve problems in IR, with a focus on how the vector-space model and the language model can be applied to the document retrieval problem;
- understand how statistical models of text can be used for other IR applications, for example clustering;
- appreciate the importance of data structures such as an index to allow efficient access to the information in large bodies of text;
- have experience of building a document retrieval system, through the practical sessions, including the implementation of a relevance feedback system;
- gain an understanding of the basic operations of image processing that support IR;
- understand how image processing techniques for object recognition and motion detection can be used in solving the IR problem for image data;
- appreciate how combined models of language and image processing can enhance document retrieval

Commitment to the Course: By signing up for this course, you agree to attend all the meetings, follow this syllabus and use your college email account regularly

Required Textbook and Materials:

***Büttcher, Stefan, Clarke, Charles L. A., Cormack, Gordon V.,* Information Retrieval: Implementing And Evaluating Search Engines, ISBN: 9780262528870**

If you are renting this book on **Akademios**, please use the **90 day option** as **60 days will run out before the semester ends.**

Determination of Grades

The overall grade for this course will be determined as follows:

Evaluation and Grading:

Quiz		20%
Midterm Exam	30%	
Final Exam		40%
Homework/Class Assignments	10%	

Calculation of Final Semester Grade:

The weights shown above determine the final numerical grade for the course. Letter grades for the course are determined by numerical grades as follows:

A+	97.0-100
A	93.0-96.9
A-	90.0-92.9
B+	87.0-89.9
B	83.0-86.9
B-	80.0-82.9
C+	77.0-79.9
C	73.0-76.9
C-	70.0-72.9
D+	67.0-69.9
D	60.0-66.9
F	<59.0

Course Requirements/Grading Criteria:

Exam : There will be 1 Midterm exam and 1 Final exam.

Quizzes will relate to material covered the day before.

Quiz every day. Best 6 will count for your grade.

- Assignments are graded on quality, completeness and timeliness. No late assignment will be graded. All assignments are required to be handed in to count toward your final grade. **All assignments must be clearly labeled with your name and date.**

Homework Problems

Homework will be assigned from each textbook chapter. Some homework assignments will be based on class materials, and others require outside research by the student. Homework is submitted at the beginning of class on the due date. Submitting homework late will reduce a student's homework grade. Any homework assignment submitted more than one week late will receive no credit. The intention is to give students an opportunity to practice and apply the concepts/techniques learned in class through homework assignments.

Makeup Examinations

'Make-up' examinations for Midterms and Quizzes will not be given. It may be granted only in exceptional situations. If the midterm examination is not taken as scheduled, the grade weight of the missed examination (.i.e. 20%) will be transferred to the Final examination in determining the student's grade for the course. The comprehensive Final Examination is mandatory

Course Schedule*

Note: This detailed schedule is TENTATIVE and is subject to change by the instructor

Week	Chapter and Topics	Due Date
1	Introduction to IR – Text Representation and Processing	
2	Modelling	
3	Retrieval Evaluation	
4	Document and Concept Clustering	
5	Web retrieval - Page rank, difficulties of Web retrieval	
6	Document clustering	
7	Mid Term Exam	
8	Query Languages	
9	Query Operations	
10	Indexing and Searching	
11	User Interface and Visualization	
12	Final Exam	

INSTRUCTOR'S EXPECTATIONS FROM EACH STUDENTClass Attendance

- ❖ Class attendance is mandatory. Full attendance means being in class from 00.00am to 00.50am each class day. The attendance will be taken each lecture by me passing a roll in the class. All students are responsible for the materials covered in each lecture and absence from class does not alter this responsibility. Students who are absent from class should obtain information regarding assignments and course material covered during their absence from classmates.

- ❖ It is virtually impossible to earn a respectable grade without attending class regularly. The final grade will be reduced by one letter grade for each absence more than three days. Example: If your final grade is 'A' and you have four absences, your grade will be reduced to 'A-' and for fifth day of absence, your grade will be 'B+'.
- ❖ For absence due to sickness, the student MUST present proof of medical emergencies.
- ❖ Students are expected to remain until the class is concluded. If there is a valid reason for leaving before the class ends, a word to the instructor before class and choosing an aisle seat is appropriate. Otherwise, an early departure will be counted as an absence with regard to the Attendance Policy. In case of an emergency, leave as quietly as possible.

Class Participation

- ❖ You are highly encouraged to participate in class discussions. I encourage you to stay ahead with the reading since doing so ensures that you have more to contribute in class in the form of questions or comments. Raising questions and responding to questions posed by both the instructor and your classmates are an integral part of the learning experience. I cherish your active participation and consider it a valuable and important component of the teaching and learning process. Class participation will improve your communication skills, enhance your ability to analyze complex issues and help develop skills that will facilitate your becoming an active leader in the community and in your chosen profession.
- ❖ Reading Assignments: Students are expected to have the reading assignments for that day completed.
- ❖ beepers, cell phones, and pagers need to be turned off before entering the classroom.
- ❖ Disruptive behavior will not be tolerated and could result in points being deducted from exam scores at the discretion of the professor and/or prompt dismissal from the class. Private conversations should be held outside the classroom. In some cases, students will try to get a word or concept they missed during the lecture. Asking your neighbor is disruptive to the entire class; either raise your hand and ask the instructor for clarification or fill in the blank with the help of a fellow student after class.

Assignment Submission

No late submission of assignment is accepted. If you miss the deadline, you miss the grade for the assignment unless otherwise stated. In case of emergencies, please provide the instructor with necessary documents.

Academic Dishonesty

In accordance with the York College Student Handbook, an instructor can levy academic penalties for academic dishonesty. They are as follows:

- ❖ Minor infraction: Reduced or failing grade for the assignment in which the offense occurred.
- ❖ Serious or repeat infraction: Failing grade for the course (administrative F). Plagiarism on the term paper or cheating on an exam is considered serious infractions.

All assignments for this class must represent new work developed specifically for this class. Reusing assignments from previous classes will be considered equivalent to plagiarism.

In most cases, it should be clear what constitutes academic dishonesty. In other cases, especially when students work together, it may be less obvious. Please follow these guidelines:

- ❖ If you use an external source for information, cite it.
- ❖ For all assignments, the final write-up should always be done individually. The write-up should reflect your analysis, your conclusions, and your writing.
- ❖ Unless directed otherwise, when you collaborate with another student, you are allowed (and in fact encouraged) to tutor each other, bounce ideas and questions off each other, clarify concepts, give general advice, and demonstrate techniques using examples.
- ❖ You are not allowed to solve a problem for another student or to copy a solution from another student. Copying between students constitutes a serious infraction.

If you have any questions about whether a specific studying technique would constitute academic dishonesty, feel free to ask me.

Student with Disabilities

If you anticipate the need for reasonable accommodations to meet the requirements of this course, you should contact the Programs/Services for Students with Disabilities Office (AC-1G03) and request I be provided with official notification of your accommodation needs as soon as possible. Please feel free to discuss with me accommodations and how my course requirements and activities may impact your ability to fully participate. My obligation is to accommodate all students; however, I need to be notified of the nature of accommodations required.

For Excellent College Grades in all your Courses:

Proper Time Management, Positive Attitude, Executing around Priorities, Self-Control (Doing your assignments when they are due).

NO LAST MINUTE RUSHING TO FINISH YOUR WORK.

Good luck and have a pleasant semester!