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| **Faculty of computers and Information** |  |
| Department Of Information Systems  Degree: Bachelor  Instructor: DR/Ahmed Elsayed |
| *1- Course Information:* | |
| Course Title: **Information Storage and Retrieval**  Code: **IS 313**  Hours: Lecture:3 Tutorial: None Credit: -3  **Pre Requisites:** IS 211  Academic year/ Level: 2020/2021- Third - Semester : First Term | |
| *2- Course Description:* | |
| Introduce theory, design, and implementation of text-based and Web-based information retrieval systems. Students learn components and operation of search engines providing search services. Components include web crawlers, indexers, link-based ranking algorithms, and recommender systems. Project required. | |
| *3- Text Books:* | |
| • Christopher D. Manning, Prabhakar Raghavan and Hinrich Schütze, *Introduction to*  *Information Retrieval*, Cambridge University Press. 2008.  • Ricado Baeza‐Yates and Bethier Ribeiro‐Neto, *Modern Information Retrieval*, Addison  Wesley, 1999. ISBN: 0‐201‐39829‐X.  • Robert R. Korfhage, *Information Storage and Retrieval*, Wisley Computer Publishing, 1997. ISBN: 0‐471‐14338‐3.  • Supachai Tangwongsan, *Information Storage and Retrieval System*, 2008. ISBN :  9789747101645. | |
| *4- Reference Books:* | |
| • G. G. Chowdhury, *Introduction to Modern Information Retrieval*, Neal‐Schuman Publishers, 2nd Edition, 2003. ISBN:1856044807. | |
| *5- Course Aim:* | |
| At the end of the course, students should  • understand core concepts and principles of information storage and retrieval,  • be able to explain concepts, techniques, tools and theories to others (e.g., future colleagues, customers and boss),  • be able to use efficient information retrieval models along with their strengths and weaknesses, and  • be able to apply techniques and extend their knowledge about information retrieval to attack the real world problems. | |
| *6- Course Intended Learning Outcomes* | |
| **A- Knowledge and understanding:**  **A1**  List Components of Information Retrieval Systems  **A2** Describe Information Retrieval capabilities  .  **A3** Describe the challenges of Information Retrieval Systems  **B. Comp.:**  **B1**  Differentiate between the different types of Information Retrieval Systems  **B2** Discuss the different Boolean models  **B3**  Demonstrate the possible ranking and scoring models  **C- ---:**  **C1:** Examine how to evaluate an Information Retrieval Systems?  **C2:** Illustrate web search basics    **D- -----:**  **D1:** Infer Possible models an information retrieval case. | |
| *7- Course Outline:* | |
| **Week 1 :**introduction to information retrieval  **Week 2:** Basic IR system components  **Week 3:** IR capabilities  **Week 4 :** Boolean model  **Week 5:**Inverted index: dictionary and posting lists  **Week 6:** Index construction  **Week 7: Quiz, Midterm**  **Week 8:** Term weighting  **Week 9:** Vector space model  **Week 10:** Scoring  **Week 11:** Ranking  **Week 12:** IR evaluation  **Week 13 :** Relevant feedback  **Week 14 :** Web Search Basics and conclusion  **Week 15: Final Exam.** | |

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| *8- Assignments Schedule:* |
| |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Assign.**  **No.** | **Topics** | **Start Week No.** | **Subm. Week No.** | **Subm. Date/** | | 1 | Boolean, inverted index models sheet | 5 | 7 | Term Time | | 2 | Implementation of Boolean, inverted index and posting lists. | 5 | 7 | Term Time | | 3 | Implementation of term weighting | 7 | 9 | Term Time | |

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| *9- Grading and Assessment Method (for practical courses)* | | | | | | | | |
| Week # | Marks | Lab work | Oral | Thesis | Continuous Work | Midterm Exam | Final Exam | Others |
| 7-9 | 20 |  |  |  |  | \* |  |  |
| 1-13 | 20 | \* |  |  |  |  |  |  |
| 14-15 | 60 |  |  |  |  |  | \* |  |

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| *10- Educational Resourses* |
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| **Prepared by** : |  | **Approved by :** | Course coordinator: |
| Name:Dr. Ahmed Elsayed |  | Name: |  |
| Sign |  | Sign | Dr. Ahmed Elsayed |
| Date First Term 2020-2021 |  | Date |  |
|  |  | **Approved by :** | Head of Department: |
|  |  | Name: |  |
|  |  | Sign | Prof.Mona Nasr |
|  |  | Date |  |