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| **Faculty of computers and Information** |  |
| Department Of Information SystemsDegree: BachelorInstructor: 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 211Academic 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*, AddisonWesley, 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:* |
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| **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 | ContinuousWork | 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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| **FCIH Class Room** | **Books** | **FCIH library** | **FCIH Lab** | **The Internet** | **In/Out Training** | **Site Visits** | **Collaborative work** | **OER****Open Edu. resources** |
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| **✓** | **✓** |  | **✓** | **✓** |  |  |  |  |

Others: --------------------------------------------------------------------------------------------------  |

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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  |  |