			CS/ IT 331/ 431 Inform	nation Reti	rieval		
			Autumn 20	21-22			
Link	to Notes	https://drive.google.com/drive/folders/1oEKw					
Link to Notes Codes Repository		https://drive.google.com/drive/folders/1HxffC					
	Manual	https://docs.google.com/document/d/1xDBjl\					
Lab Videos		https://drive.google.com/drive/folders/1vSrBg	gyBxsY3rurf0OUIa60pQJloXWN_t?usp=sharing				
Lecture	Date	Topics Covered		(Minutes)	References	Attendance	Additional Resources
1	16/07/2021	Introduction to the course, Various definitions of IR, Relevance as a feedback and scoring	https://drive.google. com/file/d/1mFgkrK10mVKtT4Y1U4p2Mgecsq0f8 yoQ/view?usp=sharing	55	1) GM 2) Chapter-1 : GPB, 3) Chapter-1 : IRQM, 4) Chapter-1 : GIR	https://drive.google.com/file/d/1VyJA-7SJCyVABvFWS0fS- MYmL4dfhqD4/view?usp=sharing	
2	20/07/2021	Zipfs Law, Stoplist, Principle of Least Effort, Hands on Python notebook to validate Zipfs law on Reuters corpus from nltk, Least Squares line fitting	https://drive.google. com/file/d/1dNiBDsvvl1QfDSvI-sH- DEKOEp1S5hxf/view?usp=sharing	55	1) Chapter-4 : MIR	https://drive.google.com/file/d/1Y2csX-7MUhp9- 0QXZE_PejT6zWO2OPT1/view?usp=sharing	
3		Preprocessing, Need of Inverted Index, Boolean Retrieval	https://drive.google.com/file/d/1YYlwIAoL- G26DCxCTzU4wDHWrowTWH9N/view? usp=sharing	58	1) Chapter-1,2: IIR, 2) Chapter-4, 6 MIR, 3) Chapter-1, IRQM	https://drive.google.com/file/d/1DGK6kOep71IA7NZgYThFVOpxohDVjzNp/view?usp=sharing	
4	27/07/2021	Normalization, Terms, Posting list, Inverted Index, Intersection (Conjuctions)	https://drive.google. com/file/d/19N_HBhaoxKB7Vcbn_3SFsUeYK8BP kXbx/view?usp=sharing	56	1) Chapter 1, 2 : IIR, 2) Chapter-6 MIR	https://drive.google.com/file/d/1GaofCrCF7nutlGdAVMQB3-gF_MrcdJBW/view?usp=sharing	
5	28/07/2021	Dictionaries and tolerant retrieval	https://drive.google.com/file/d/1aTjsNoTZL50kufpRWrruiXYFj-fLiZUV/view?usp=sharing	47	1) Chapter 3 : IIR	https://drive.google.com/file/d/1_2syDBS0wAZ2PZcH4ISg3lkQWwjDUdR4/view?usp=sharing	
6	30/07/2021	Index Construction, Static Data on Single Machine, BSBI	https://drive.google.com/file/d/1Gu2lbnp-2Z7iJlDd- W8xzqiEdb7607zT/view?usp=sharing	50	1) Chapter 4 : IIR	https://drive.google.com/file/d/1a9O5nSbRHfZXyfSNdzf8IMvCLZmU6AtT/view?usp=sharing	(1) https://www.inf.unibz.it/~ricci/ISR/slides-2015/04-index-construction.pdf (2) https://github.com/cenkayberkin/MySearchEngine
7	03/08/2021	Coordination Level, Learning Relevance, Boolean Relevance Ranking	https://drive.google_ com/file/d/1S3zCwGGpie40OKQEeLyHDNUKCl4 ov-Ph/view?usp=sharing	45	1) Chapter 6 : IIR, 2) Chapter 1 IRQM	https://drive.google.com/file/d/1_kdMr3ChVdUIUXb03_W2Mce5_N_o9tvp/view?usp=sharing	
8	04/08/2021	Zone Scoring and Ranking, Vector Space Retrieval, TF-IDF	https://drive.google.com/file/d/1sz6xsXPaJOVMmxgDXkmPZ_NAICf8 Hdzz/view?usp=sharing	54	1) Chapter 6 : IIR, 2) Chapter 7, 8 MIR	https://drive.google.com/file/d/1Wkdwgflk2cNP_GcRZ_FY-eMzl6ZJVKn8/view?usp=sharing	
9	06/08/2021	TF-IDF Matrix, Applications: Classification, Clustering, Recommender System, Vector Space Retrieval	https://drive.google.com/file/d/1lxxmduSVmGGtTDGmg1Sc2hvRdTdh 19Y8/view?usp=sharing	46	1) Chapter 6 : IIR, 2) Chapter 8 MIR	https://drive.google.com/file/d/1dCWViNKnV6ZP23wUnHpxjFIUMRUFqI0M/view?usp=sharing	
10	10/08/2021	Cluster Pruning, Static Quality Score, Discussion on Information Need and Query, Complete Search System	https://drive.google.com/file/d/1SPHtIZBv6f_UHf9wpeqxG0IFPCCBzCiu/view?usp=sharing	49	1) Chapter 7 : IIR	https://drive.google. com/file/d/1ndJ_MfXA6g47LOqOCeBrd966I7-TvF9D/view? usp=sharing	
11	11/08/2021	Evaluation in infromation retrieval, unranked and ranked retrievals	https://drive.google. com/file/d/1RNw4lx8geHXAG5BCGTREyQm95Xj 5FVHK/view?usp=sharing	46	1) Chapter 8 : IIR, 2) MIR	https://drive.google.com/file/d/1FpANs4eNaRJUDAX0gZAXhdp5NCN7gx4R/view 2usp=sharing	
12	13/08/2021	Ranked Retrieval, MAP, Interpolated Precision, Precision Recall Graph	https://drive.google.com/file/d/13w7j8gvOOXVPqNx6GrPBbuWsHAJT Ffjl/view?usp=sharing	50	1) Chapter 8 : IIR, 2) MIR	https://drive.google.com/file/d/1E5SWqC- JZtYaL0ShviXMCxjoLYJuHARt/view?usp=sharing	
13		Precision at k, NDCG, Relevance Assessment and kappa statistic	https://drive.google, com/file/d/1WNh_FSVLKrQgRIZVIr5_jp7- GwvSXJg5/view?usp=sharing	45	1) Chapter 8 : IIR, 2) MIR	https://drive.google.com/file/d/1laL_rEhr9Ja1OKwyqqDQFhYBFl35gmV8/view?usp=sharing	
14	17/08/2021	Relevance Feedback and Query Expansion	GwvSXJg5/view?usp=sharing https://drive.google. com/file/d/1EpQhil6a6L5YqGnvDO4InTCmfUAJ29 L8/view?usp=sharing	50	1) Chapter 9 : IIR, 2) GIR	https://drive.google.com/file/d/19WF9rxV4MykuB1XTWiwmBTRuT6UBNiMs/view 2usp=sharing	
15	19/08/2021	DEMO - Elasticsearch and Kibana	https://drive.google. com/file/d/1dG3WKcVY3orip_vtRKMDmWTcctg9 Rjvu/view?usp=sharing	75	1) Relevant Search, Turnbull, Berryman		
16	24/08/2021	Probabilistic Information Retrieval	https://drive.google.com/file/d/1aH1BqPyCZf7GDXzeYKbbR0Y5RbULT64L/view?usp=sharing	51	1) Chapter 11, 12 : IIR, 2) Chapter 9, 10 MIR	https://drive.google.com/file/d/1K53cWSbMI5a5JHw54KRt_VF2aAkortHv/view?usp=sharing	
17	25/08/2021	Language Models, Query likelihood model	https://drive.google.com/file/d/1zr9hKtbn3kCjVPjDBGrColgc_XtsT7k0/view?usp=sharing	48	1) Chapter 11, 12 : IIR, 2) Chapter 9, 10 MIR	https://drive.google.com/file/d/1t3iDCHehu_EbXXhcurH8SRRvTn5O6Xyx/view?usp=sharing	
18	27/08/2021	Text Classification and Naive Bayes	https://drive.google. com/file/d/1rtblZlmhPHQWm55zwk- 25PY17Oqkts0f/view?usp=sharing	52	1) Chapter 12,13 : IIR	https://drive.google.com/file/d/11SPUuHEIF_it8SfH4m0MSmvgZ4043K0L/view?usp=sharing	
19		Revision: change of basis and SVD	https://drive.google.com/file/d/1- nguuwi8_N3CwkS6db8sXFY-4cLJplyn/view? usp=sharing	48	1) Lecture 5,6 on change of basis, Lecture 25, 26 on SVD https://drive. google.com/file/d/1bsp- 3ncPKsxJSMY330FtEZCbPBzS1y1a /view?usp=sharing	https://drive.google.com/file/d/1dOEwRyuB0gXUa- Pqll2sdH8YlxAPrMif/view?usp=sharing	
20	01/09/2021	Introduction to SVD, Interpretation of matrix V and notion of subspace approximation to row space of a matrix	https://drive.google. com/file/d/1ceAfO5e2QPqWuUGTtz8LL_15W0dQ DuM6/view?usp=sharing	50	Chapter 18 : IIR, Paper on Linear Algebra for Intelligent Information Retrieval	https://drive.google. com/file/d/19q717Z0uxhYoxDLBDO4neAhdPnai3u62/view? usp=sharing	

21	03/09/2021	Matrix Decomposition and Latent Semantic Indexing	https://drive.google.com/file/d/10RYYsiJDN9XI_taMT1mQiDByJxXt9R W6/view?usp=sharing	50	https://www.cs.cmu. edu/~venkatg/teaching/CStheory- infoage/book-chapter-4.pdf	
22	07/09/2021	Summary LSI, Introduction to Clustering, Flat and Hierarchical Clustering	https://drive.google.com/file/d/1XznHB8SZA- LF4QKuOR63BSNI57z40ZYY/view?usp=sharing	56	Chapter 18 : IIR, Chapter 5 : GM, Chapter 15 : IIR	https://drive.google. com/file/d/15vQukhfMhYtvWLjp68LcwelFq_ydqr0R/view? usp=sharing
23	08/09/2021	Hierarchical Clustering: HAC	https://drive.google.com/file/d/1CITPv0Kbyj1qu- XDXx0urbKfzLkQL6Ao/view?usp=sharing	45	Chapter 16, 17 : IIR	https://drive.google. com/file/dr/DIyROXP0kLJ2HT4IO_FOlx5t77ooe2MG/view? usp=sharing
24	10/09/2021	Doubt Solving : SVD, Optimization				https://drive.google. com/file/d/1BGdP8T6UgEtlKBdbt6xlfMkBKwillB6j/view? usp=sharing
25		Vector Space Classification, Support Vector Machine - Introduction, Linearly Separable Case	https://drive.google. com/file/d/1Ir31UMRQZIpM7XcBdwKrdWQYKGvt aNu6/view?usp=sharing	46	Chapter 15 : IIR	https://drive.google. com/file/d/11/CevYejTccYS1TIsCNTjzHtXDW9lfUKH/view? usp=sharing
26		Support Vector Machine - Distance of a point from a hyperplane, Functional and Geometric Margins	https://drive.google.com/file/d/1ZAn082VhlfONflxgW1lc77xqxfgfAQWm/view?usp=sharing	43	Chapter 15 : IIR	https://drive.google. com/file/dr/12ARpanwHm4dJRAMLzyjBPXZh1GCBjHG/view ?usp=sharing
27		Support Vector Machine - Quadratic Program, Dual Formulation	https://drive.google.com/file/d/1tHvxuK_FY97XfNHgmD6KHjvTqoKVZ mOv/view?usp=sharing	51	Chapter 15 : IIR	https://drive.google.com/file/d/1-NrcJU8-N- DeffCcd0kW9ozTtxeKEU2k3/view?usp=sharing
28		Support Vector Machine - Generalized Lagrangian, Dual and Primal Formulations	https://drive.google.com/file/d/1- N9OGBtiMfryUlfBIPD2gJS8Zoo9AzqH/view? usp=sharing	52	https://see.stanford. edu/materials/aimlcs229/cs229- notes3.pdf	https://drive.google. com/file/d/1Xm2qbnkIKEl9BeSVMTsdZcezwRVNjjjkx/view? usp=sharing
29	01/10/2021	Support Vector Machine - Kernel Machines				
30		Link Analysis - Stubborn Vectors, Markov Matrices				
31		Link Analysis - Google PageRank and HITS				
32		Link Analysis - Google PageRank, Google Matrix				
33		Concept Lattice - 1				
34		Concept Lattice - 2				
35		Concept Lattice - 3				
36		Concept Lattice - 4				
37		Geometry of Information Retrieval, Quantum mechanical interpretation				
38		Geometry of Information Retrieval, Quantum mechanical interpretation				
39		Geometry of Information Retrieval, Quantum mechanical interpretation				
40		Word/ Document Contextual Embeddings				