

CURRICULUM
OF
LIBRARY SCIENCE
BS Programme



(2014)

HIGHER EDUCATION COMMISSION
ISLAMABAD

CURRICULUM DIVISION, HEC

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PREFACE

The curriculum, with varying definitions, is said to be a plan of the teaching-learning process that students of an academic programme are required to undergo. It includes objectives & learning outcomes, course contents, scheme of studies, teaching methodologies and methods of assessment of learning. Since knowledge in all disciplines and fields is expanding at a fast pace and new disciplines are also emerging; it is imperative that curricula be developed and revised accordingly.

University Grants Commission (UGC) was designated as the competent authority to develop, review and revise curricula beyond Class-XII vide Section 3, Sub-Section 2 (ii), Act of Parliament No. X of 1976 titled “Supervision of Curricula and Textbooks and Maintenance of Standard of Education”. With the repeal of UGC Act, the same function was assigned to the Higher Education Commission (HEC) under its Ordinance of 2002, Section 10, Sub-Section 1 (v).

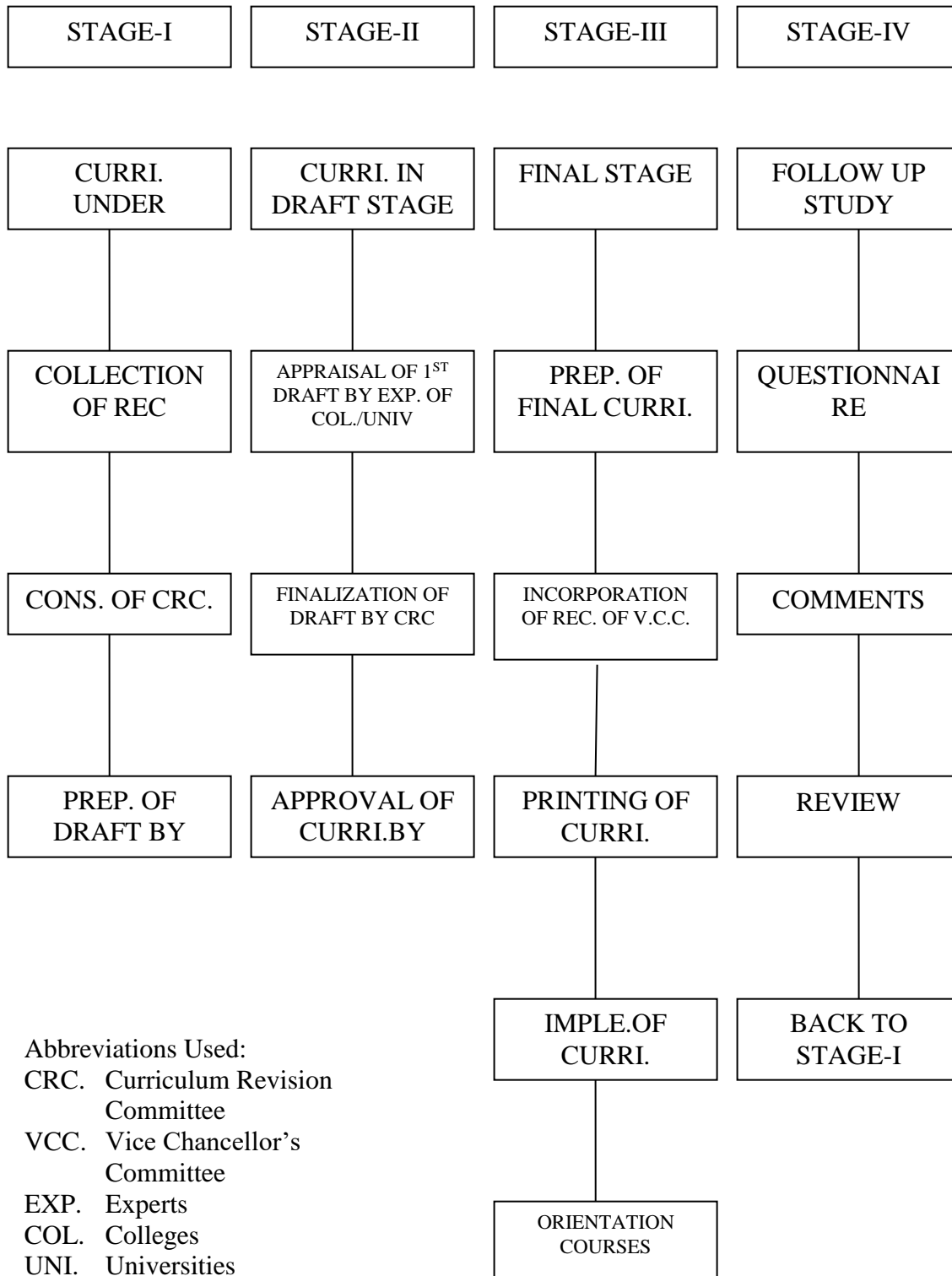
In compliance with the above provisions, the Curriculum Division of HEC undertakes the revision of curricula after every three years through respective National Curriculum Revision Committees (NCRCs) which consist of eminent professors and researchers of relevant fields from public and private sector universities, R&D organizations, councils, industry and civil society by seeking nominations from their organizations.

In order to impart quality education which is at par with international standards, HEC NCRCs have developed unified templates as guidelines for the development and revision of curricula in the disciplines of Basic Sciences, Applied Sciences, Social Sciences, Agriculture and Engineering in 2007 and 2009.

It is hoped that this curriculum document, prepared by the respective NCRC’s, would serve the purpose of meeting our national, social and economic needs, and it would also provide the level of competency specified in Pakistan Qualification Framework to make it compatible with international educational standards. The curriculum is also placed on the website of HEC (www.hec.gov.pk).

(Fida Hussain)
Director General (Academics)

CURRICULUM DEVELOPMENT PROCESS



INTRODUCTION

The Final meeting of National Curriculum Revision Committee (NCRC) in the discipline of Library & Information Science (LIS) was held at HEC Regional Centre, Lahore from May 21-23, 2014 to finalize preliminary draft curriculum of BS (4-year) BLIS and scheme of studies for MS/MPhil (LIS) with recommendations for the promotion and development of the discipline. The following members attended the meeting:-

Sr.	Name & Address	STATUS
1.	Syed Abdur Rehman Bukhari, Assistant Professor, Department of Library & Information Science, The Islamia University of Bahawalpur, BJ Campus, Bahawalpur.	SECRETARY
2.	Mr. Hamid Rahman, Assistant Professor, Department of Library & Information Science, University of Peshawar, Peshawar.	CONVENER
3.	Prof. Dr. Kanwal Ameen, Chairperson, Department of Information Management, University of Punjab, Quaid-e-Azam Campus, Lahore.	MEMBER
4.	Dr. Muhammad Ramzan, Director Library, Lahore University of Management Sciences (LUMS), Lahore.	MEMBER
5.	Dr. Rubina Bhatti, Associate Professor/Chairperson, Department of Library & Information Science, The Islamia University of Bahawalpur, Baghdad-ul- Jadid Campus, Bahawalpur.	MEMBER
6.	Mr. Manzoor Ahmad Khan Anjum, Chief Librarian,Rtd University of Faisalabad, Sargodha Road, Faisalabad.	MEMBER

7.	Dr. Saeed Ullah Jan, Head of Department Library & Information science, Sarhad University of Science & Technology, Peshawar.	MEMBER
8.	Prof. Dr. Muhammad Fazil Khan. Chairman Dept., of Library and Information Sciences, Minhaj University Lahore.	MEMBER
9.	Mr. Faridullah Shah Mian, Associate Librarian, Main Library, Khyber Pakhtunkhawa University of Agriculture, Peshawar.	MEMBER
10.	Ch. Muhammad Nazir, Director General, National Library, Islamabad	MEMBER
11.	Syed Ghyour Hussain, Deputy Directo, National Library of Pakistan, Islamabad.	MEMBER
12.	Mr. Abdul Waheed, Chief Librarian, Central Library, Govt. College University Lahore, Lahore.	MEMBER
13.	Mr. Muhammad Arif, Assistant Professor, Department of Library & Information Sciences, Allama Iqbal Open University, Islamabad.	MEMBER
14.	Mr. Mohammad Anwar, Librarian, Balochistan University of Engineering & Technology (BUET), Khuzdar.	MEMBER

15.	Mr. M. Imran Siddiqui, In charge, Central Library, University of Gujrat, Gujrat.	MEMBER
16.	Ms. Gulnaz Akhtar, Assistant Librarian, Fatima Jinnah Women University, The Mall, Rawalpindi,	MEMBER
17.	Mr. Muhammad Safdar, Librarian, NUST, H-12, Islamabad.	MEMBER

The meeting started with recitation of Verses from the Holy Quran by Prof. Dr. Muhammad Fazil Khan. After brief introduction of participants, Mr. Riaz-ul-Haque, Assistant Director (Curriculum) welcomed the participants on behalf of HEC and thanked them for their participation in this important exercise.

To start with the formal proceedings of session, Mr. Riaz suggested the names of Syed Abdur Rehman Bukhari, as **Secretary** & Mr. Hamid Rehman, as **Convener** of the meeting. The Convener thanked the participants for his selection and started proceedings of the meeting in accordance with the agenda already furnished.

The Committee considered the inputs given by honorable members who subject-wise went by to ascertain the facts & needs of the schools & market as well. After three days long deliberations, the committee unanimously finalized the draft curriculum of the BS (LIS) programme, which the committee formatted and handed over to HEC concerned authorities. It was also decided that the recommendations made by committee will be published as annexure of the final curriculum circulated by HEC for implementation.

The Convener thanked the members for their input in revising curriculum & making it more viable & practical.

Mr. Riaz-ul-Haque, Assistant Director Curriculum, HEC also thanked the Convener and all the members of the committee for sparing their precious time and quality contribution towards preparation of the preliminary draft curriculum in the discipline of Library & Information Science. The committee equally appreciated the efforts made by Mr. Riaz-ul-Haque, Assistant Director HEC/Meetings & Coordinator for making this event happen. Also committee lauded the efforts by Mr. Nazeer Hussain, Director HEC Regional Centre,

Lahore and his staff their efforts in providing logistics, accommodation, food & other relevant accessories required.

The meeting ended with vote of thanks to and from the chair.

SCHEME OF STUDIES

1st Semester

Sr. #	Course code	Course Title	Credit Hours
1	01101	English –I	3
2	01102	Pakistan Studies	2
3	01103	Introduction to Computer	3
4	01104	General-I (Course Title to be selected from General Course list)	3
5	01105	General-II (Course Title to be selected from General Course list)	3
6	01106	Information , Library & Society (Foundation-1)	3
			17

2nd Semester

Sr. #	Course code	Course Title	Credit Hours
1	01201	English I- II	3
2	01202	Islamic Studies	2
3	01203	Mathematics	3
4	01204	General-III (Course Title to be selected from General Course list)	3
5	01205	General-IV (Course Title to be selected from General Course list)	3
6	01206	Evaluation of Libraries & Information Sources (Foundation-II)	3
			17

3rd Semester

Sr. #	Course code	Course Title	Credit Hours
1	01301	English III	3
2	01302	Introduction to Statistics	3
3	01303	General -V (Course Title to be selected from General Course list)	3
4	01304	General-VI (Course Title to be selected from General Course list)	3

5	01305	User Services in Libraries (Foundation-III)	3
			15

4th Semester

Sr. #	Course code	Course Title	Credit Hours
1	01401	English-IV (Seminar Based Oral Communication Skills)	3
2	01402	General-VII (Course Title to be selected from General Course list)	3
3	01403	Use of Emerging Technologies in Library (Foundation-IV)	3
4	01404	Organization of Information (Foundation-V)	3
5	01405	Basic Reference and Information Sources (Foundation-VI)	3
			15
		List of General Courses	
		1. Personality Development Six out of the Following 1. Education 2. Psychology 3. Sociology 4. Logic & Critical Thinking 5. Languages (other than Urdu and English) 6. Cultural and Heritage Studies 7. Law 8. Literature Studies 9. Professional Ethics 10. Economics 11. Art Appreciation 12. Geography 13. Archeology 14. General Science 15. Communication Studies 16. Gender Studies 17. Entrepreneurship	All courses are of 3 credit

5th Semester

Sr. #	Course code	Course Title	Credit Hours
1	01501	Management of Library & Information services (Foundation –VII)	3
2	01502	Introduction to Publishing and Book Trade (Foundation-VIII)	3
3	01503	Applied Classification (Major-I)	4
4	01504	Research Methodology (Major-II)	3
5	01505	Marketing of Library and Information Services (Major-III)	3
			16

6th Semester

Sr. #	Course code	Course Title	Credit Hours
1	01601	Quantitative Research Methods (Foundation-IX)	3
2	01602	Collection Development & Management (Foundation-X)	3
3	01603	Applied Cataloguing (Major-IV)	4
4	01604	Library Automation System (Major-V)	4
5	01605	Information Literacy (Major-XI)	3
			17

7th Semester

Sr. #	Course code	Course Title	Credit Hours
1	01701	Library & Information Services in Pakistan (Major-VII)	3
2	01702	Indexing and Abstracting (Major-VIII)	3
3	01703	Resource Sharing and Networking (Major-IX)	3
4	01704	Elective-I (Course Title to be selected from Elective Course list)	3
5	01705	Elective-II (Course Title to be selected from Elective Course list)	3
6	01706	Qualitative Research Methods (Major-VI)	3
			18

8th Semester

Sr. #	Course code	Course Title	Credit Hours
1	01801	Inf. Storage and Retrieval (Major-X)	4
2	01802	Elective-III (Course Title to be selected from Elective Course list)	3
3	01803	Elective-IV (Course Title to be selected from Elective Course list)	3
4	01804	Research Project/ Internship (Major –XII)	3+3
			16
			131
		List of Elective Courses	
		Digital Libraries Media Librarianship Data Base Design & Management Web Development Knowledge Management Human Resource Management Financial Management Archives & Records Management Intellectual Property Rights Bibliographic Control Project Management Preservation & Conservation of Library Material Serial Management Information Sources on Islam and Pakistan Information Sources on Business & Industry Information Sources on Health Sciences Information Sources on Humanities and Social Sciences Information Sources on Science & Technology Information Sources on Law 20 Information Sources on Agriculture.	All courses are of 3 credits

COMPULSORY COURSES

COMPULSORY COURSES IN ENGLISH FOR BS (4 YEAR) IN BASIC & SOCIAL SCIENCES

ENGLISH I (Functional English)

Objectives: Enhance language skills and develop critical thinking.

Course Contents

Basics of Grammar
Parts of speech and use of articles
Sentence structure, active and passive voice
Practice in unified sentence
Analysis of phrase, clause and sentence structure
Transitive and intransitive verbs
Punctuation and spelling

Comprehension

Answers to questions on a given text

Discussion

General topics and every-day conversation (topics for discussion to be at the discretion of the teacher keeping in view the level of students)

Listening

To be improved by showing documentaries/films carefully selected by subject teachers

Translation skills

Urdu to English

Paragraph writing

Topics to be chosen at the discretion of the teacher

Presentation skills

Introduction

Note: Extensive reading is required for vocabulary building

Recommended Books:

1. **Functional English**
 - a) Grammar
 1. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 1. Third edition. Oxford University Press. 1997. ISBN 0194313492

2. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press. 1997. ISBN 0194313506
- b) Writing
1. Writing. Intermediate by Marie-Christine Boutin, Suzanne Brinand and Françoise Grellet. Oxford Supplementary Skills. Fourth Impression 1993. ISBN 0 19 435405 7 Pages 20-27 and 35-41.
- c) Reading/Comprehension
1. Reading. Upper Intermediate. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 453402 2.
- d) Speaking

ENGLISH II (Communication Skills)

Objectives: Enable the students to meet their real life communication needs.

Course Contents:

Paragraph writing

Practice in writing a good, unified and coherent paragraph

Essay writing

Introduction

CV and job application

Translation skills

Urdu to English

Study skills

Skimming and scanning, intensive and extensive, and speed reading, summary and précis writing and comprehension

Academic skills

Letter/memo writing, minutes of meetings, use of library and internet

Presentation skills

Personality development (emphasis on content, style and pronunciation)

Note: documentaries to be shown for discussion and review

Recommended Books:

A. Communication Skills

- a) Grammar
 1. Practical English Grammar by A.J. Thomson and A.V. Martinet. Exercises 2. Third edition. Oxford University Press 1986. ISBN 0 19 431350 6.
- b) Writing
 2. Writing. Intermediate by Marie-Christine Boutin, Suzanne Brinand and Françoise Grellet. Oxford Supplementary Skills. Fourth Impression 1993. ISBN 019 435405 7 Pages 45-53 (note taking).
 3. Writing. Upper-Intermediate by Rob Nolasco. Oxford Supplementary Skills. Fourth Impression 1992. (particularly good for writing memos, introduction to presentations, descriptive and argumentative writing). ISBN 0 19 435406 5
- c) Reading
 1. Reading. Advanced. Brian Tomlinson and Rod Ellis. Oxford Supplementary Skills. 3rd Impression 1991. ISBN 0 19 453403 0.
 2. Reading and Study Skills by John Langan
 4. Study Skills by Richard Yorky.

ENGLISH III (Technical Writing and Presentation Skills)

Objectives: Enhance language skills and develop critical thinking

Course Contents:

Presentation skills

Essay writing

Descriptive, narrative, discursive, argumentative

Academic writing

How to write a proposal for research paper/term paper

How to write a research paper/term paper (emphasis on style, content, language, form, clarity, consistency)

Technical Report writing

Progress report writing

Note: Extensive reading is required for vocabulary building

Recommended Books:

Technical Writing and Presentation Skills

- a) Essay Writing and Academic Writing
 1. Writing. Advanced by Ron White. Oxford Supplementary Skills. Third Impression 1992. ISBN 0 19 435407 3 (particularly suitable for discursive, descriptive, argumentative and report writing).
 2. College Writing Skills by John Langan. Mc=Graw-Hill Higher Education. 2004.
 3. Patterns of College Writing (4th edition) by Laurie G. Kirszner and Stephen R. Mandell. St. Martin's Press.
- b) Presentation Skills
- c) Reading

The Mercury Reader. A Custom Publication. Compiled by norther Illinois University. General Editors: Janice Neulib; Kathleen Shine Cain; Stephen Ruffus and Maurice Scharon. (A reader which will give students exposure to the best of twentieth century literature, without taxing the taste of engineering students).

PAKISTAN STUDIES

(Compulsory)

Introduction/Objectives

- Develop vision of historical perspective, government, politics, contemporary Pakistan, ideological background of Pakistan.
- Study the process of governance, national development, issues arising in the modern age and posing challenges to Pakistan.

Course Outline:

1. Historical Perspective

- a. Ideological rationale with special reference to Sir Syed Ahmed Khan, Allama Muhammad Iqbal and Quaid-i-Azam Muhammad Ali Jinnah.
- b. Factors leading to Muslim separatism
- c. People and Land
 - i. Indus Civilization
 - ii. Muslim advent
 - iii. Location and geo-physical features.

2. Government and Politics in Pakistan

Political and constitutional phases:

- a. 1947-58
- b. 1958-71
- c. 1971-77
- d. 1977-88
- e. 1988-99
- f. 1999 onward

3. Contemporary Pakistan

- a. Economic institutions and issues
- b. Society and social structure
- c. Ethnicity
- d. Foreign policy of Pakistan and challenges
- e. Futuristic outlook of Pakistan

Recommended Books

1. Burki, Shahid Javed. *State & Society in Pakistan*, The Macmillan Press Ltd 1980.
2. Akbar, S. Zaidi. *Issue in Pakistan's Economy*. Karachi: Oxford University Press, 2000.
3. S.M. Burke and Lawrence Ziring. *Pakistan's Foreign policy: An Historical analysis*. Karachi: Oxford University Press, 1993.

4. Mehmood, Safdar. *Pakistan Political Roots & Development*. Lahore, 1994.
5. Wilcox, Wayne. *The Emergence of Bangladesh*., Washington: American Enterprise, Institute of Public Policy Research, 1972.
6. Mehmood, Safdar. *Pakistan Kayyun Toota*, Lahore: Idara-e-Saqafat-e-Islamia, Club Road, nd.
7. Amin, Tahir. *Ethno - National Movement in Pakistan*, Islamabad: Institute of Policy Studies, Islamabad.
8. Ziring, Lawrence. *Enigma of Political Development*. Kent England: WmDawson & sons Ltd, 1980.
9. Zahid, Ansar. *History & Culture of Sindh*. Karachi: Royal Book Company, 1980.
10. Afzal, M. Rafique. *Political Parties in Pakistan*, Vol. I, II & III. Islamabad: National Institute of Historical and cultural Research, 1998.
11. Sayeed, Khalid Bin. *The Political System of Pakistan*. Boston: Houghton Mifflin, 1967.
12. Aziz, K.K. *Party, Politics in Pakistan*, Islamabad: National Commission on Historical and Cultural Research, 1976.
13. Muhammad Waseem, *Pakistan Under Martial Law*, Lahore: Vanguard, 1987.
14. Haq, Noor ul. *Making of Pakistan: The Military Perspective*. Islamabad: National Commission on Historical and Cultural Research, 1993.

ISLAMIC STUDIES

(Compulsory)

Objectives:

This course is aimed at:

- 1 To provide Basic information about Islamic Studies
- 2 To enhance understanding of the students regarding Islamic Civilization
- 3 To improve Students skill to perform prayers and other worships
- 4 To enhance the skill of the students for understanding of issues related to faith and religious life.

Detail of Courses:

Introduction to Quranic Studies

- 1) Basic Concepts of Quran
- 2) History of Quran
- 3) Uloom-ul -Quran

Study of Selected Text of Holly Quran

- 1) Verses of Surah Al-Baqra Related to Faith (Verse No-284-286)
- 2) Verses of Surah Al-Hujrat Related to Adab Al-Nabi (Verse No-1-18)
- 3) Verses of Surah Al-Mumanoon Related to Characteristics of faithful (Verse No-1-11)
- 4) Verses of Surah al-Furqan Related to Social Ethics (Verse No.63-77)
- 5) Verses of Surah Al-Inam Related to Ihkam (Verse No-152-154)

Study of Selected Text of Holly Quran

- 1) Verses of Surah Al-Ihzab Related to Adab al-Nabi (Verse No.6,21,40,56,57,58.)
- 2) Verses of Surah Al-Hashar (18,19,20) Related to thinking, Day of Judgment
- 3) Verses of Surah Al-Saf Related to Tafakar,Tadabar (Verse No-1,14)

Seerat of Holy Prophet (S.A.W)

- 1) Life of Muhammad Bin Abdullah (Before Prophet Hood)
- 2) Life of Holy Prophet (S.A.W) in Makkah
- 3) Important Lessons Derived from the life of Holy Prophet in Makkah

Seerat of Holy Prophet (S.A.W) II

- 1) Life of Holy Prophet (S.A.W) in Madina

- 2) Important Events of Life Holy Prophet in Madina
- 3) Important Lessons Derived from the life of Holy Prophet in Madina

Introduction To Sunnah

- 1) Basic Concepts of Hadith
- 2) History of Hadith
- 3) Kinds of Hadith
- 4) Uloom –ul-Hadith
- 5) Sunnah & Hadith
- 6) Legal Position of Sunnah

Selected Study from Text of Hadith

Introduction To Islamic Law & Jurisprudence

- 1) Basic Concepts of Islamic Law & Jurisprudence
- 2) History & Importance of Islamic Law & Jurisprudence
- 3) Sources of Islamic Law & Jurisprudence
- 4) Nature of Differences in Islamic Law
- 5) Islam and Sectarianism

Islamic Culture & Civilization

- 1) Basic Concepts of Islamic Culture & Civilization
- 2) Historical Development of Islamic Culture & Civilization
- 3) Characteristics of Islamic Culture & Civilization
- 4) Islamic Culture & Civilization and Contemporary Issues

Islam & Science

- 1) Basic Concepts of Islam & Science
- 2) Contributions of Muslims in the Development of Science
- 3) Quranic & Science

Islamic Economic System

- 1) Basic Concepts of Islamic Economic System
- 2) Means of Distribution of wealth in Islamic Economics
- 3) Islamic Concept of Riba
- 4) Islamic Ways of Trade & Commerce

Political System of Islam

- 1) Basic Concepts of Islamic Political System
- 2) Islamic Concept of Sovereignty
- 3) Basic Institutions of Govt. in Islam

Islamic History

- 1) Period of Khlaft-E-Rashida
- 2) Period of Ummayyads
- 3) Period of Abbasids

Social System of Islam

- 1) Basic Concepts Of Social System Of Islam
- 2) Elements Of Family
- 3) Ethical Values Of Islam

Reference Books:

- 1) Hameed ullah Muhammad, "Emergence of Islam" , IRI, Islamabad
- 2) Hameed ullah Muhammad, "Muslim Conduct of State"
- 3) Hameed ullah Muhammad, 'Introduction to Islam
- 4) Mulana Muhammad Yousaf Islahi,"
- 5) Hussain Hamid Hassan, u leaf Publication Islamabad, Pakistan.
- 6) Ahmad Hasan, "Principles of Islamic Jurisprudence" Islamic Research Institute, International Islamic University, Islamabad (1993)
- 7) Mir Waliullah, "Muslim Jrisprudence and the Quranic Law of Crimes" Islamic Book Service (1982)
- 8) H.S. Bhatia, "Studies in Islamic Law, Religion and Society" Deep & Deep Publications New Delhi (1989)
- 9) Dr. Muhammad Zia-ul-Haq, "Introduction to Al Sharia Al Islamia" Allama Iqbal Open University, Islamabad (2001)

Note: One course will be selected from the following six courses of Mathematics.

COMPULSORY MATHEMATICS

COURSE FOR NON-MATHEMATICS MAJORS IN SOCIAL SCIENCES

<i>Title of subject:</i>		MATHEMATICS
<i>Discipline</i>	:	BS (Social Sciences).
<i>Pre-requisites</i>	:	SSC (Metric) level Mathematics
<i>Credit Hours</i>	:	03 + 00
<i>Minimum Contact Hours</i>	:	40
<i>Assessment</i>	:	written examination;
<i>Effective</i>	:	2008 and onward

Aims : To give the basic knowledge of Mathematics and prepare the students not majoring in mathematics.

Objectives : After completion of this course the student should be able to:

- Understand the use of the essential tools of basic mathematics;
- Apply the concepts and the techniques in their respective disciplines;
- Model the effects non-isothermal problems through different domains;

Contents:

1. *Algebra* : *Preliminaries*: Real and complex numbers, Introduction to sets, set operations, functions, types of functions. *Matrices*: Introduction to matrices, types of matrices, inverse of matrices, determinants, system of linear equations, Cramer's rule. *Quadratic equations*: Solution of quadratic equations, nature of roots of quadratic equations, equations reducible to quadratic equations. *Sequence and Series*: Arithmetic, geometric and harmonic progressions. *Permutation and combinations*: Introduction to permutation and combinations, *Binomial Theorem*: Introduction to binomial theorem. *Trigonometry*: Fundamentals of trigonometry, trigonometric

identities. *Graphs*: Graph of straight line, circle and trigonometric functions.

2. *Statistics: Introduction*: Meaning and definition of statistics, relationship of statistics with social science, characteristics of statistics, limitations of statistics and main division of statistics. *Frequency distribution*: Organisation of data, array, ungrouped and grouped data, types of frequency series, individual, discrete and continuous series, tally sheet method, graphic presentation of the frequency distribution, bar frequency diagram histogram, frequency polygon, cumulative frequency curve. *Measures of central tendency*: Mean, median and modes, quartiles, deciles and percentiles. *Measures of dispersion*: Range, inter quartile deviation, mean deviation, standard deviation, variance, moments, skewness and kurtosis.

Books Recommended:

1. Swokowski. E. W., '*Fundamentals of Algebra and Trigonometry*', Latest Edition.
2. Kaufmann. J. E., '*College Algebra and Trigonometry*', PWS-Kent Company, Boston, Latest Edition.
3. Walpole, R. E., '*Introduction of Statistics*', Prentice Hall, Latest Edition.
4. Wilcox, R. R., '*Statistics for The Social Sciences*',

INTRODUCTION TO STATISTICS

Credit hrs: 3(3-0)

Unit 1. What is Statistics?

Definition of Statistics, Population, sample Descriptive and inferential Statistics, Observations, Data, Discrete and continuous variables, Errors of measurement, Significant digits, Rounding of a Number, Collection of primary and secondary data, Sources, Editing of Data. Exercises.

Unit 2. Presentation of Data

Introduction, basic principles of classification and Tabulation, Constructing of a frequency distribution, Relative and Cumulative frequency distribution, Diagrams, Graphs and their Construction, Bar charts, Pie chart, Histogram, Frequency polygon and Frequency curve, Cumulative Frequency Polygon or Ogive, Histogram, Ogive for Discrete Variable. Types of frequency curves. Exercises.

Unit 3. Measures of Central Tendency

Introduction, Different types of Averages, Quantiles, The Mode, Empirical Relation between Mean, Median and mode, Relative Merits and Demerits of various Averages. properties of Good Average, Box and Whisker Plot, Stem and Leaf Display, definition of outliers and their detection. Exercises.

Unit 4. Measures of Dispersion

Introduction, Absolute and relative measures, Range, The semi-Inter-quartile Range, The Mean Deviation, The Variance and standard deviation, Change of origin and scale, Interpretation of the standard Deviation, Coefficient of variation, Properties of variance and standard Deviation, Standardized variables, Moments and Moments ratios. Exercises.

Unit 5. Probability and Probability Distributions.

Discrete and continuous distributions: Binomial, Poisson and Normal Distribution. Exercises

Unit 6. Sampling and Sampling Distributions

Introduction, sample design and sampling frame, bias, sampling and non sampling errors, sampling with and without replacement, probability and non-probability sampling, Sampling distributions for single mean and proportion, Difference of means and proportions. Exercises.

Unit 7. Hypothesis Testing

Introduction, Statistical problem, null and alternative hypothesis, Type-I and Type-II errors, level of significance, Test statistics, acceptance and

rejection regions, general procedure for testing of hypothesis.
Exercises.

Unit 8. Testing of Hypothesis- Single Population

Introduction, Testing of hypothesis and confidence interval about the population mean and proportion for small and large samples, Exercises

Unit 9. Testing of Hypotheses-Two or more Populations

Introduction, Testing of hypothesis and confidence intervals about the difference of population means and proportions for small and large samples, Analysis of Variance and ANOVA Table. Exercises

Unit 10. Testing of Hypothesis-Independence of Attributes

Introduction, Contingency Tables, Testing of hypothesis about the Independence of attributes. Exercises.

Unit 11. Regression and Correlation

Introduction, cause and effect relationships, examples, simple linear regression, estimation of parameters and their interpretation. r and R^2 . Correlation. Coefficient of linear correlation, its estimation and interpretation. Multiple regression and interpretation of its parameters. Examples

Recommended Books

- 1 Walpole, R. E. 1982. "Introduction to Statistics", 3rd Ed., Macmillan Publishing Co., Inc. New York.
- 2 Muhammad, F. 2005. "Statistical Methods and Data Analysis", Kitab Markaz, Bhawana Bazar Faisalabad.

FOUNDATION COURSES

INFORMATION, LIBRARY AND SOCIETY

Objectives:

- To explore the environment in which library and information professionals work.
- To understand social, political and economic context in which libraries and other information agencies operate.
- To understand the nature of library and information and their role in society.

Description:

Nature of information and knowledge. Library and Information Profession, Library and its role in Society. Information society. Communication and information management. Social information. Economic aspects of information. Information policy. Freedom of information. Information privacy. Intellectual property. Information ethics.

Recommended Readings:

1. The Library: A World History / by James W. P. Campbell
University Of Chicago Press, 2013.
2. Chowdhury, G. G., et al. (2007). *Librarianship: The complete introduction*. London: Facet.
3. Feather, J. (2008). *The information society: A study of continuity and change*. New York: Neal-Schuman.
4. Gerard, D. (1978). *Libraries in society*. London: Clive Bingley.
5. Himma, K. E. (2007). *Information ethics*. Bradford: Emerald.
6. Lester, J., & Koehler, W. C. (2007). *Fundamentals of information studies*. New York: Neal-Schuman.
7. Rubin, R. (2004). *Foundations of library and information science*. New York: Neal-Schuman.
8. Torr, J. D. (2003). *The information age: Current controversies*. San Diego: Greenhaven Press.
9. IFLA (2000) Libraries in the information society
10. Crawford, W and Gorman, Micheal(1995). Future Librarians: dreams, Madness & reality: Chicago. American Library Association.
11. Levy, David(2000). Scrolling Forward: Making sense of documents in the digital age.New York. Arcade Publishing

EVOLUTION OF LIBRARIES AND INFORMATION SOURCES

Objectives:

- To give an overview of the evolution of libraries and various formats of information and knowledge resources starting from ancient to present times
- To develop basic understanding regarding these formats

Description:

Ancient records of knowledge. History of libraries. Evolution of alphabets. Clay tablets. Parchment. Papyrus roles. Codex. Invention of printing, Books. Serials--- Journals, Magazines, Newspapers. Audio. Visual. Multimedia. Microforms.

Recommended Readings:

1. Chappel, W., & Bringham, R. (2000). *A short history of the printed word*. Point Roberts, WA: Hartley & Marks.
2. Foot, P. W. R. (1967). *The story of communications*. Oxford: Pergamum Press.
3. Kilgour, F. G. (1998). *The evolution of the book*. New York, Oxford University Press.
4. Liu, Z. (2008). *Paper to digital: Documents in the information age*. Westport, Conn.: Libraries Unlimited.
5. Wilkie, C. (1999). *Managing film and video collections*. London: The Association for Information Management.
6. Muhammad Fazil Khan (1988) *Kutub Khanoo Ki Tareekh: Ahd-e-Qadeem say Ahd-e-Mughliya tak*. Multan. Bacon Books.
7. Harris, Micheal Age and Johnson, Elmer P. (1999) *History of Libraries in the western world*. 4th ed . Scarcrow Press. N.J.
8. Cassel, Kay Ann and uma Hiremath. *Reference & Information Services in 21st century: An introduction*. Neal Schuman

USER SERVICES IN LIBRARIES

Objectives:

- To understand the types and terminology of user services in libraries.
- To develop skills for Planning, designing, implementing and evaluating effective user services.

Description:

Introduction to user services. Circulation service. Reference and Information services. Referral service. Current awareness service (CAS). Selective Dissemination of Information (SDI). Documentation services. Translation services. Inter Library Loan (ILL) and Document Delivery. Reprographic service. User education.

Recommended Book:

1. Bopp, R. E., & Smith, L. C. (2001). *Reference and information services: An introduction*. Englewood, Colo: Libraries Unlimited.
2. Evans, G. E. (2008). *Introduction to library public services*. Westport: Libraries Unlimited.
3. Janes, J. (2003). *Introduction to reference work in the digital age*. New York: Neal-Schuman.
4. Katz, W. A. (2001). *Introduction to reference work*. New York: McGraw-Hill.

USE OF EMERGING TECHNOLOGIES IN LIBRARIES.

Objectives:

- To develop a conceptual understanding of information and other technologies used in libraries.
- To develop practical skills in using library technologies.

Description:

Information and other library technologies. Hardware. Software. Operating systems. Telecommunications and networks. Internet and WWW, barcode technology, wireless technology and virtual private network (VPN). Social networking. Email. Word processing. Spreadsheets. Presentation software. Desktop publishing. Databases. Library security systems. Tele-lifts. Digitization hardware and software. Reprographic technology, Radio Frequency Identification (RFID) Scanning.

Recommended Readings:

1. Burke, J. J. (2006). *Library technology companion*. New York: Neal-Schuman.
2. Ferguson, S., & Hebels, R. (2003). *Computers for librarians: An introduction to the electronic library*. Wagga Wagga: Centre for Information Studies, Charles Sturt University.
3. Miller, J. B. (2008). *Internet technologies and information services*. Westport, CT: Libraries Unlimited.
4. Morley, D. (2007). *Understanding computers: today and tomorrow*. Boston, Mass: Thomson/Course Technology.
5. Rowley, J. (2001). *The electronic library*. London: Library Association Publ.
6. Shelly, G. B., Cashman, T. J., & Vermaat, M. (2007). *Discovering computers 2007: A gateway to information*. Boston, Mass: Thomson Course Technology.

ORGANIZATION OF INFORMATION

Objectives:

- To introduce theories and trends of bibliographic description and subject analysis.
- To understand concepts of organization of both print and electronic information.
- To give an overview of the efforts of information organization in Pakistan.

Description:

Historical development of the organization of information. Systems for organization of information: Environments, Storage and Retrieval tools, Encoding standards, Cataloguing Codes and its modern aspects Resource Description and Access (RDA), Current systems. The information organization process: Surrogate/Metadata records: Description, Access; Authority control. Subject access: Analysis, Verbal subject approaches, Classification. Organization and administration: Arrangement, Management issues. Problems of information organization in Pakistan.

Recommended Readings:

1. Coleman, A. (2004). *Guide to selecting and cataloging quality WWW resources for the small library*. Fairfield, CA: LRACCC.
2. Harvey, D. R., Hider, P., & Harvey, D. R. (2004). *Organising knowledge in a global society: Principles and practice in libraries and information*

centres. Wagga Wagga, N.S.W.: Centre for Information Studies, Charles Sturt University.

3. International Federation of Library Associations and Institutions. (2002). *ISBD(M): International Standard Bibliographic Description*. (2002). Available at: www.ifla.org/VII/s13/pubs/isbd_m0602.pdf
4. Rowley, J. E., & Farrow, J. (2000). *Organizing knowledge: An introduction to managing access to information*. Aldershot, Hampshire: Gower.
5. Svenonius, E. (2000). *The intellectual foundation of information organization*. Cambridge, Mass: MIT Press.
6. Taylor, A. G., & Joudrey, D. N. (2008). *The organization of information*. Westport, Conn: Libraries Unlimited.
7. Khurshid, Anis (1993) *Jadid Catalogue Sazi : Muqtadara Qumi Zaban*. Isala Abad
8. Chan, LLouis Mai.(1994) *Cataloguing and Classification: An introduction*. 2nd ed. McGraw Hill. New York

BASIC REFERENCE AND INFORMATION SOURCES

Objectives:

- The primary intent is to acquaint students with basic reference sources and learn about a few standard titles in each of the basic categories.
- Enable them to retrieve information efficiently using these information sources.

Description:

Definition. Evaluation Criteria. Bibliographies and its types, Basic guides to reference materials, Library catalogs; Serials guides; Indexes and abstracts; HEC NDL; Dictionaries and thesauri; Almanacs and fact books; Encyclopedias; Directories; Biographical sources; Geographical sources-- Maps, atlases & gazetteers; Reference Web sites; Internet Public Library).
Evaluation

Recommended Readings:

1. *Basic reference sources*.
<http://www.lili.org/forlibs/ce/able/course11/welcome-2.htm>
2. Bopp, R. E., & Smith, L. C. (2001). *Reference and information services: An introduction*. Englewood, Colo: Libraries Unlimited.
3. Katz, W. A. (2002). *Introduction to reference work: Vol. 1, Basic information services*. Boston: McGraw-Hill.

MANAGEMENT OF LIBRARY AND INFORMATION SERVICES

Objectives:

- To understand functions of management and their underlying theoretical concepts.
- To understand how these functions can be applied to provide effective library and information services.

Description:

Basic theories and principles of administration for effective management of public, academic, and special libraries and information centers, with emphasis on planning, organizing, staffing, directing, coordinating, reporting, and budgeting. Administrative aspects of public and technical services, facilities, rules and regulations, evaluation, public relations, inter-agency cooperation, and change management. Library space management. and time management

Recommended Readings:

1. Evans, G. E., Layzell Ward, P., Rugaas, B., & Evans, G. E. (2007). *Management basics for information professionals*. New York: Neal-Schuman.
2. Massis, B. E. (2003). *The practical library manager*. New York: Haworth Press.
3. Stueart, R. D. & Moran, B. B. (2007). *Library and information center management*. Greenwood Village, CO: Libraries Unlimited.
4. Sajjad-ur-Rehman(1993). *Elm-e-Intezamyat: Taaruf aur kutub khano par etlaq*. University of the Punjab Lahore. PULSAA.

INTRODUCTION TO PUBLISHING AND BOOK TRADE

Objectives:

- To develop understanding of the information industry dynamics
- To develop learning about dealing with commercial and non commercial publishers in libraries context

Description:

What is publishing? A brief history of publishing; Scholarly publishing/communication; Job of publisher. Types of publishers—commercial, non-commercial. Electronic publishing. Dynamics of foreign and

local book trade in Pakistan; Acquisition of foreign books. Journals and databases in libraries of Pakistan: procedure and problems. Vendors, book-sellers and distributors. Library rates and rebates.

Recommended Readings:

1. Gorman, G. E. (2005). *Scholarly publishing in an electronic era*. London:Facet.
2. Ameen, K. (2008). Issues of book acquisition in university libraries: A case study of Pakistan. *Library Philosophy and Practice*. <http://www.webpages.uidaho.edu/~mbolin/lpp2008.htm>
3. BUBL Link. *Electronic publishing*. Available at <http://bubl.ac.uk/LINK/e/electronicpublishing.htm>
4. De Sompel, H. V., et al. (2004). Rethinking scholarly communication: Building the system that scholars deserve. *D-Lib Magazine*, 10 (9). Available at: <http://www.dlib.org/dlib/september04/vandesompel/09vandesompel.html>
5. Evans, G. E., & Margaret, Z. (2005). *Developing library and information center collections*. Littleton, CO: Libraries Unlimited. (Chap. 11)
6. NBCP. (1981). *Problems of book distribution in Pakistan*. Karachi.
7. NBCP. (1981). *Problems of book publishing in Pakistan*. Karachi.
8. NBCP. (1981). *Problems of periodical publishing in Pakistan*. Karachi.
9. Wilkinson, F. C., & Lewis, L. K. (2009). *The complete guide to acquisitions management*. Littleton, CO: Libraries Unlimited.
10. Wilson, T. (1997). Electronic publishing and the future of the book. *Information Research*, 3 (2). Available at: <http://informationr.net/ir/3-2/paper39.html>
11. Ibrahim Saad (1994) Readers on Book publishing in Pakistan. Royal book co

RESEARCH METHODOLOGY

Objectives:

- To understand basic concepts, terminology and process of social science research within the library and information science field.

Description:

Definition. Types of research. Research methods. Research problem. Theory formulation. Literature review. Research questions / hypotheses. Sampling. Data collection. Data analysis and Interpretation. Research Proposal. Report writing. End note. Dissemination of results. Research ethics. Research in library & information science.

Recommended Readings:

1. Babbie, E. R. (2007). *The practice of social research*. Belmont, CA: Wadsworth Publishing.
2. Beck, S. E., & Manuel, K. (2007). *Practical research methods for librarians and information professionals*. New York: Neal-Schuman.
3. Leedy, Paul D., and Jeanne Ellis Ormrod. 2005. *Practical research: Planning and design*. Upper Saddle River, NJ: Merrill Prentice Hall.
4. Pickard, A. J. (2007). *Research methods in information*. London: Facet.
5. Powell, R. R., & Connaway, L. S. (2004). *Basic research methods for librarians*. Westport, Conn: Libraries Unlimited.
6. Moore, Nick(2000). *How to do research: the complete guide to designing & managing research projects*. London. Library Association

COLLECTION DEVELOPMENT & MANAGEMENT

Objectives:

- To recognize methods, problems, and challenges of collection development and management.
- To develop constructive approaches to investigate and resolve problems of collection development and management
- To understand current issues in collection development and management faced in various types of libraries.

Description:

Basic concepts. Planning for the management of library & information resources. Collection development policies. Selection and acquisition of library & information resources. Evaluation of library collections. Collection development and management of electronic resources. Intellectual freedom and censorship.

Deselection & preservation. Write off and weeding the library material.

Recommended Readings:

1. American Library Association, Office for Intellectual Freedom. (2005). *Intellectual freedom manual*. Chicago: ALA.
2. Chapman, L. (2008). *Managing acquisitions in library and information services*. New York: Neal-Schuman.
3. Evans, G. E. (2005). *Developing libraries and information center collections*. Englewood, Colorado: Libraries Unlimited.
4. Johnson, P. (2009). *Fundamentals of collection development and management*. Chicago: American Library Association.
5. Wilkinson, F. C., & Lewis, L. K. (2003). *The complete guide to acquisitions management*. Westport, Conn: Libraries Unlimited.

MAJOR COURSES

APPLIED CLASSIFICATION

Objectives:

- To develop practical skills in using classification schemes and assigning subject headings and Cutter numbers.

Description:

Dewey Decimal Classification (Print, e-DDC and other online editions). Sear's List of Subject Headings / Library of Congress Subject Headings. Call number (Cutter Table and author mark). Other Classification Schemes.

Recommended Readings:

1. Broughton, V. (2008). *Essential Library of Congress Subject Headings*. New York: Neal-Schuman.
2. Chan, L. M., & Mitchell, J, S. (2003). *Dewey Decimal Classification: Principles and application*. Dublin, OH: OCLC Online Computer Library Center.
3. Chan, L.M. (2007). *Cataloging and classification: An introduction*. Lanham, MD: Scarecrow Press.
4. Dewey, M. et al. (2003). *Dewey decimal classification and relative index*. Dublin, Ohio: OCLC Online Computer Library Center.
5. Goodsell, J., & Sears, M. E. (2007). *Sears list of subject headings*. HW Wilson.
6. Library of Congress. *Library of Congress Subject Headings*. 21st ed.
7. Taylor, A. G. (2006). *Introduction to cataloging and classification*. Westport, CT; Libraries Unlimited.

APPLIED CATALOGUING

Objectives:

- To develop practical skills in making catalog entries of print and other materials.

Description:

Anglo-American Cataloguing Rules, MARC and RDA ALA Filing Rules. Cataloguing of book and non-book materials. Metadata standards. Copy Cataloguing. Cataloguing of Oriental Names.

Recommended Readings:

1. American Library Association. (2005). *Anglo-American cataloguing rules*. Chicago: ALA.
2. Caplan, P. (2003). *Metadata fundamentals for all librarians*. Chicago: American Library Association.
3. Chan, L.M. (2007). *Cataloging and classification: An introduction*. Lanham, MD: Scarecrow Press.
4. Evans, G. E., Intner, S. S., & Weihs, J. (2002). *Introduction to technical services*. Greenwood Village, CO: Libraries Unlimited.
5. Hillmann, D., & Westbrook, E. L. (2004). *Metadata in practice*. Chicago: American Library Association.
6. Library of Congress. (2006). *MARC 21 concise formats*. Washington: Library of Congress, Cataloging Distribution Service.
7. Taylor, A. G. (2006). *Introduction to cataloging and classification*. Westport, CT; Libraries Unlimited.
8. Zeng, M. L., & Qin, J. (2008). *Metadata*. New York: Neal-Schuman.
9. Anis Khurshid(1997). *Cataloging of Pakistani Names*. Rev ed. Karachi. BCCT University of Karachi
10. ALA rules for filing catalogue cards. 2nd Ed Seely P.A ed. Chicago. American Library Association.

RESOURCE SHARING AND NETWORKING

Objectives:

- To introduce the concepts and practices of resource sharing in libraries.
- To introduce the concepts and practices of library and information networking.

Description:

Concept, scope and importance of resource sharing in various types of libraries. Pre-requisites. Functions, systems and techniques. Fundamental concepts, types (LAN, MAN, WAN, Intranet, Internet) and topology of networking. Basic data communication concept. Networking devices. Network protocols. OSI Model. CD-ROM and OCLC based networks, networking and resource sharing in microcomputer environment. Resource Sharing and Networking in Pakistan.

Recommended Readings:

1. Kurose, J. F., & Ross, K. W. (2007). *Computer networking: A top-down approach featuring the Internet*. Boston: Pearson/Addison Wesley.
2. Lee, S. H. (2003). *Impact of digital technology on library collections and resource sharing*. Binghamton, N.Y.: Haworth.

3. Tanenbaum, A. S. (2003). *Computer networks*. Upper Saddle River, N.J.: Prentice Hall.
4. Tomsho, G. (2006). *Guide to networking essentials*. Cambridge, Mass: Course Technology.
5. Webster, P. (2006). *Library resource sharing networks*. Baltimore, MD: The Johns Hopkins University Press.
6. Evans G.E (Chapter on resource sharing) in *Management techniques for librarians*. 2nd ed. N.Y. Academic Press

QUANTITATIVE RESEARCH METHODS

Objectives:

- To introduce the concepts of quantitative research methods.
- To develop practical skills in conducting quantitative research in library and information settings.

Description:

Nature and types of quantitative research. Difference with other research methods. Experimental designs. Content analysis. Bibliometrics. Formulation of hypothesis. Sampling techniques and sample statistics. Instrument construction. Measurement scales. Descriptive and inferential statistics. SPSS software. Quantitative research methods in library and information science. Overview of SPSS, AMOS, and other modern quantitative research techniques.

Recommended Book:

1. Clayton, P., & Gorman, G. E. (2009). *The information professional's guide to quantitative research: A practical handbook*. London: Facet.
2. Egghe, L., & Rousseau, R. (2001). *Elementary statistics for library and information service management*. London: Aslib-IMI.
3. Levin, J., & Fox, J. A. (2007). *Elementary statistics in social research: The essentials*. London: Pearson Education.
4. Patten, M. L. (2001). *Questionnaire research: A practical guide*. Los Angeles, CA: Pyczak Pub.
5. Bell, Judith (1999) *Doing your research project: a guide for the first time researchers in educational & social sciences*. New Delhi. Viva Books.

QUALITATIVE RESEARCH METHODS

Objectives:

- Develop basic understanding of the theory of qualitative research methodology
- Learn the application of qualitative methods to LIS.

Description:

Defining and understanding qualitative research design. Differences and relation with quantitative research design. Major qualitative data collection methods; Observation, interview, focus group, field notes, content analysis etc.; Interpreting and reporting qualitative research. ENVIVO and other soft wares in qualitative research techniques.

Recommended Readings:

1. Cresswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches*. Thousand Oaks: Sage.
2. Gorman, G. E., Clayton, P., Shep, S. J., & Clayton, A. (2005). *Qualitative research for the information professional: A practical handbook*. London: Facet.
3. Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research*. Thousand Oaks, CA: Sage.

LIBRARY & INFORMATION SERVICES IN PAKISTAN

Objectives:

- To introduce students with basics of librarianship in Pakistan
- To develop broad-based understanding of the major aspects of librarianship in Pakistan

Description:

Structure of Libraries-- National, Academic, Public, Special; Schools Library resources and services. Use of ICTs in libraries; Challenges faced by libraries and librarians. Legislation, standards, policies. Rules for purchase e.g. Pepra rules. service structure etc. Future prospects. Library Education and training. Job opportunities for LIS professionals. Library associations. Library literature. Library committee rules.

Recommended Readings:

1. Ameen, K., Ali, R. A., & Tahami, M. A. (2008). *Emerging paradigm in librarianship: A call for innovation. Proceeding of the PLA Golden Jubilee International Conference 2007*. Lahore: PLA (Punjab).
2. Mahmood, K. (1998). *Information technology in libraries*. Lahore: Pak Book Corporation.
3. National Library of Pakistan. <http://www.nlp.gov.pk/>
4. Sajjad-Ur-Rehman(1992) *Library Education in Pakistan: Past present & future*. Lahore. PULSAA
5. *Hallmarks of Library and Information services in Pakistan*. Mohammad Asghar ,Afzal Haq qurshi and Syed Jamil Rizvi. Lahore. PULSAA

6. Waheed, Abdul . (2011) The evolution of education in LIS in Pakistan and United Kingdom: a comparative study. Saarbrucken (Germany) VDM Verlag

INDEXING AND ABSTRACTING

Objectives:

- To introduce concepts of indexing and abstracting.
- To develop practical skills in preparing indexes and abstracts.

Description:

Principles and methods of indexing and abstracting. Manual and computerized indexing processes for different kinds of indexes including Indexing and Abstracting (I & A). LISA, AGRICOLA, Index Islamicus and Pakistan Periodical Index databases, back-of-book indexes, website indexes, etc. Vocabulary control. Basic techniques of thesaurus construction. Theory and practice of indexing for specialized formats and subjects. Types, formats and techniques of abstracts. Current issues in automatic indexing and abstracting.

Recommended Readings:

1. Broughton, V. (2006). *Essential thesaurus construction*. New York: Neal-Schuman.
2. Cleveland, D. B., & Cleveland, A. D. (2000). *Introduction to indexing and abstracting*. Littleton, Colo: Libraries Unlimited.
3. Lancaster, F. W. (2003). *Indexing and abstracting in theory and practice*. Champaign, Illinois: University of Illinois.

LIBRARY AUTOMATION SYSTEMS

Objectives:

- To introduce functions of library automation systems.
- To develop practical skills in using state of the art library automation systems.

Description:

Overview of library automation systems (Integrated Library System). Systems analysis for library automation: hardware, software, and networks. Relevant technical standards. Planning and acquisition of library automation systems. Request for proposals; contract negotiation; implementation, maintenance and evaluation. Retrospective conversion. Structure of the library automation

industry. Overview of the major library automation Modules: Acquisitions Cataloguing OPAC Services Circulation; Serials Inter-library loan and collections management; and reference. Role of library staff, senior management, library systems personnel, other librarians, vendors and consultants.

Recommended Readings:

1. Bilal, D. (2002). *Automating media centers and small libraries: A microcomputer-based approach*. Englewood, CO: Libraries Unlimited.
2. Bolan, K., & Cullin, R. (2007). *Technology made simple: An improvement guide for small and medium libraries*. Chicago: American Library Association.
3. Ferguson, S., & Hebels, R. (2003). *Computers for librarians: An introduction to the electronic library*. Wagga Wagga: Centre for Information Studies, Charles Sturt University.
4. Ingersoll, P., & Culshaw, J. (2004). *Managing information technology: A handbook for systems librarians*. Westport, CT: Libraries Unlimited.
5. Kochtanek, T. R., & Matthews, J. R. (2002). *Library information systems: From library automation to distributed information access solutions*. Library and information science text series. Westport, CT: Libraries Unlimited.
6. Matthews, J. R. (2004). *Technology planning: Preparing and updating a library technology plan*. Westport, CT: Libraries Unlimited.
7. Schultz-Jones, B. (2006). *An automation primer for school library media centers and small libraries*. Worthington, Ohio: Linworth Pub.
8. Automating Library Services in Pakistan Fida Muhammad. Hamid Rehman etc. Peshawar

MARKETING OF LIBRARY AND INFORMATION SERVICES

Objectives:

- To introduce basic concepts of marketing
- To introduce marketing in library and information settings.
- To develop practical skills in preparing marketing plan for library and information services.

Description:

Basic concepts of Marketing---market, (market segmentation, clients needs, wants, demand, transaction, target market, product, service). What is Library marketing? Marketing Process; Application of marketing concepts to library and information services, Market research. Developing Marketing Mix ---Ps and Cs and its application in Library environment Marketing audit. E-Marketing, Websites and Social Media.

Recommended Readings:

1. Andreasen, A. R., & Kotler, P. (2003). *Strategic marketing for nonprofit organizations*. Upper Saddle River, NJ: Prentice Hall.
2. Broady, J. (2000). *Strategic marketing for library and information services*. London: Library Association.
3. De Sáez, E. E. (2002). *Marketing concepts for libraries and information services*. London: Facet Pub.
4. Mathews, B. (2009). *Marketing today's academic library*. Chicago: American Library Association.
5. Rowley, J. E. (2006). *Information marketing*. Aldershot, Hants, England: Ashgate.
6. Walters, S. (2004). *Library marketing that works*. New York: Neal-Schuman.
7. Zeithaml, V. A. (2007). *Services marketing: integrating customer focus across the firm*. Toronto: McGraw-Hill Ryerson.

INFORMATION STORAGE AND RETRIEVAL

Objectives:

- To understand concepts, terminology and systems of information storage and retrieval.
- To develop practical skills in searching online information.

Description:

Information representation. Basic concepts of database design and management. Information storage devices. Search processes. User needs and interview skills; inverted index and parsing rules. OPACs. Online databases. Web search engines, Web Discovery tools scoopas, Web of Knowledge, Thompson readers. Dropbox, Google doc etc., OPACs, Online databases, Web search engines. Searching Techniques, keywords extraction, Stop words. Boolean logic. Vector space. Truncation. Phrase search. Word proximity. Reserved words. Prefix/suffix fields. Search strategies. Issues of database licensing. Information brokers. HEC Digital Library. Evaluation of information retrieval systems.

Recommended Readings:

1. Barker, J. (2007). *Finding information on the Internet: A tutorial*. University of California at Berkeley.
2. Bell, S. S. (2009). *Librarian's guide to online searching*. Westport, Conn: Libraries Unlimited.
3. Chowdhury, G. G. (2004). *Introduction to modern information retrieval*. London: Facet.
4. Chu, H. (2003). *Information representation & retrieval in the digital age*. Medford, NJ: Information Today

5. Kowalski, G. J., & Maybury, M. T. (2000). *Information storage and retrieval*. Boston: Kluwer.
6. Meadow, C. T., Kraft, D. H., & Boyce, B. R. (2007). *Text information retrieval systems*. San Diego: Academic Press.

INFORMATION LITERACY

Objectives:

- To understand basic concepts and terminology of information literacy.
- To develop practical skills for designing, delivering and evaluating information literacy programs.

Description:

Concepts, components and models of information literacy (IL) Query building. Teaching and training fundamentals. Learning and reading styles. Instructional strategies, Managing large and small instruction programs. Designing online information literacy instruction modules. Creating successful instruction classes. Evaluating information literacy programs.

Recommended Readings:

1. Avery, E. F. (2003). *Assessing student learning outcomes for information literacy instruction in academic institutions*. Chicago: Association of College and Research Libraries.
2. Conroy, H., & Webb, J. (2009). *A guide to teaching information literacy*. New York: Neal-Schuman.
3. Cox, C. N., & Lindsay, E. B. (2008). *Information literacy instruction handbook*. Chicago: American Library Association.
4. Eisenberg, M., Lowe, C. A., Spitzer, K. L., & Spitzer, K. L. (2004). *Information literacy: Essential skills for the information age*. Westport, Conn: Libraries Unlimited.
5. Grassian, E. S., & Kaplowitz, J. R. (2005). *Learning to lead and manage information literacy instruction*. New York: Neal-Schuman.
6. Grassian, E. S., & Kaplowitz, J. R. (2009). *Information literacy instruction: Theory and practice*. New York: Neal-Schuman.
7. Riedling, A. M. (2007). *An educator's guide to information literacy*. Westport, Conn.: Libraries Unlimited.
8. Smith, S. S. (2006). *Web-based instruction: A guide for libraries*. Chicago: American Library Association.

RESEARCH PROJECT AND/OR INTERNSHIP

Objectives:

- To develop practical skills in research to solve library and information related problems.
- To give practical exposure to the students to work in libraries and information centers.

Description:

It should be a supervised research project on an information management problem. The student will apply one or more established methodologies to collect and analyze data and communicate the results in a written report.

INTERNSHIP

Objective:

- To give practical exposure to the students to work in libraries and information centers.

Description:

A full time work experience in a selected library or information centers under supervision of the internal and external supervisors. The student will communicate the results in a written report.

ELECTIVE COURSES

DIGITAL LIBRARIES

Objectives:

- To understand fundamental issues, problems, and approaches to digital libraries.
- To develop skills for designing digital libraries.

Description:

Concepts and issues of Digital Libraries (DL). Evolution of Digital Libraries. DL communities. Content creation. Different file formats. Digitization. DL architecture. Elements of a DL. DOI, Open URL, Cross Ref and other aspects. DL content management issues. Metadata and other resource discovery issues. Access control and DRM, security and preservation issues. DL soft wares.

D space, greenstone. Institutional Repository Digital Libraries in Pakistan.

Recommended Readings:

1. Arms, W. Y. (2000). *Digital libraries*. Cambridge, Mass: MIT Press.
2. Bishop, A. P., Van House, N. A., & Bittenfield, B. P. (2003). *Digital library use: Social practice in design and evaluation*. Digital libraries and electronic publishing. Cambridge, Mass: MIT Press.
3. Chowdhury, G. G., & Chowdhury, S. (2002). *Introduction to digital libraries*. New York: Neal-Schuman.
4. Lesk, M., & Lesk, M. (2005). *Understanding digital libraries*. Amsterdam: Elsevier.
5. Reese, T., & Banerjee, J. K. (2008). *Building digital libraries: A how-to-do-it manual for librarians*. New York: Neal-Schuman.
6. Witten, I. H. (2003). *How to build a digital library*. New York: Elsevier Science.

MEDIA LIBRARIANSHIP

Objectives:

- To introduce Multi-media used for information storage and retrieval.
- To develop skills for handling Multi-media in libraries.

Description:

Introduction to media librarianship. Nature and characteristics of Audio-visual and other non-print materials: CDs, DVDs, and social media. Acquisition, organization and use of multi-media materials; types and formats of

microforms; equipment required to use different formats; comparison and economics of print, microform and computer products; services and production of AV and microforms; role of multimedia in dissemination of information with special reference to educational institutions/academic libraries.

Recommended Readings:

1. Handman, G. P. (2002). *Video collection development in multitype libraries: A handbook*. Westport, CT: Greenwood Press.
2. Schopflin, K. (2008). *A handbook for media librarians*. New York: Neal-Schuman.

DATABASE DESIGN & MANAGEMENT

Objectives:

- To understand basic concepts, terminology, methods, and issues related to database systems, database design and database management.
- To be familiar with a database software.

Description:

Overview of databases and database design. Components of a Database Management System (DBMS). Logical modeling and E-R diagramming. The relational model. Normalization. Physical modeling. Querying a database. Issues and Trends in DBMS. Creating a database application. Testing, prototyping and hosting. SQL servers.

Recommended Readings:

1. Connolly, T. M., & Begg, C. E. (2004). *Database solutions: A step-by-step guide to building databases*. Harlow, England: Pearson/Addison Wesley.
2. Groh, M. (2007). *Access 2007 bible*. Indianapolis, Ind: Wiley Publishing.

WEB DEVELOPMENT

Objectives:

- To develop practical skills in designing Web based services for libraries and information centers.

Description:

Document design and electronic publishing. Web site design. HTML and XML. Web editors. Images and other media formats. Interactive documents with Java and JavaScript. Server-side scripting. Web site design for library & information services. SQL Server, creating dynamic and static pages.

Recommended Readings:

1. Griffiths, P. (2004). *Managing your Internet and intranet services: The information and professional's guide to strategy*. London: Facet.
2. Song, Y. (2003). *Building better web sites: A how-to-do-it manual for librarians*. New York: Neal-Schuman.
3. Lehman, T., & Nikkel, T. (2007). *Making library web sites usable*. New York: Neal-Schuman.
4. Westman, S. R. (2005). *Creating database-backed library web pages*. Chicago: American Library Association.

KNOWLEDGE MANAGEMENT

Objective:

- To introduce the concepts and tools of knowledge management.

Description:

Introduction to knowledge management. Knowledge management cycle. Knowledge management models. Knowledge capture and codification. Knowledge sharing and communities of practice. Transfer of best practices. Role of organizational culture. Knowledge management tools. KM strategy and metrics. KM team. Future challenges for KM.

Recommended Readings:

1. Byrne, D. (2008). *Essential knowledge management*. New York: Neal-Schuman.
2. Davenport, T. H., & Prusak, L. (2000). *Working knowledge: How organizations manage what they know*. Boston, Mass: Harvard Business School Press.
3. Jennex, M. E. (2007). *Knowledge management in modern organizations*. Hershey, PA: Idea Group Pub.
4. Nonaka, I., & Teece, D. J. (2001). *Managing industrial knowledge: Creation, transfer and utilization*. London: Sage.
5. Pfeffer, J., & Sutton, R. I. (2000). *The knowing-doing gap: How smart companies turn knowledge into action*. Boston, Mass: Harvard Business School Press.
6. Tiwana, A. (2002). *The Knowledge Management Toolkit: Orchestrating IT, strategy, and knowledge platforms*. Upper Saddle River, NJ: Prentice Hall.
7. Wallace, D. P. (2007). *Knowledge management*. Westport, Conn.: Libraries Unlimited.

HUMAN RESOURCE MANAGEMENT

Objectives:

- To understand the concepts and functions of human resource management.
- To understand how these functions can be applied to manage human resources in library and information services.

Description:

Human resource management roles & functions. Motivation in the workplace. Control in the workplace. Required competencies. Job recruitment and job description. Job interviewing. Orientation to the workplace. Training and staff development. Employee supervision. Communication skills for managers. Performance evaluation.

Recommended Readings:

1. Allan, B. (2007). *Supervising and leading teams in ILS*. London: Facet.
2. Cohn, J. M., & Kelsey, A. L. (2005). *Staffing the modern library: A how-to-do-it manual*. New York: Neal-Schuman.
3. Mondy, R. W., & Noe, R. M. (2007). *Human resource management*. Upper Saddle River, NJ: Prentice-Hall.
4. Simmons-Welburn, J., & McNeil, B. (2004). *Human resources management in today's academic library*. Englewood, CO: Libraries Unlimited.
5. Stanley, M. (2008). *Managing library employees*. New York: Neal-Schuman.
6. Trotta, M. (2006). *Supervising staff: A how-to-do-it manual for librarians*. New York: Neal-Schuman.

FINANCIAL MANAGEMENT FOR LIBRARIES

Objectives:

- To understand the concepts and functions of financial management.
- To understand how these functions can be applied to manage finances in libraries and information centers.

Description:

Introduction to financial management. Budget as a planning tool and change agent. Budget process. Major components of budgets. Types of budgets (Recurring and development). Preparing, presenting and defending the budget. Budget monitoring, financial workflow, internal controls, audited statements. Audit observations. Organizing, analyzing and presenting financial and statistical data. Alternative sources of revenue and their impact

on budgets. Current issues in budgetary and financial management such as fund raising.

Recommended Readings:

1. Finkler, S. A. (2001). *Financial management for public, health, and not-for-profit organizations*. Upper Saddle River, NJ: Prentice Hall.
2. Hallam, A., & Dalston, T. R. (2005). *Managing budgets and finances: A how-to-do-it manual for librarians*. New York: Neal-Schuman.
3. Kingma, B. R. (2001). *The economics of information: A guide to economic and cost-benefit analysis for information professionals*. Englewood, CO: Libraries Unlimited.
4. Turner, A. M. (2007). *Managing money: A guide for librarians*. Jefferson, NC: McFarland.

ARCHIVES & RECORDS MANAGEMENT

Objectives:

- To understand the nature of archives and public records.
- To understand how management functions can be applied to provide effective services based on archives and public records.

Description:

Introduction to archives and public records. Theory and concepts of archives and records management. Strategies, Control, Accessibility, Disposal and Storage. Dealing with Archive record. Electronic records (Classified and open record). Archival centres in Pakistan. Preservation and Conservation of Archival Materials.

1. Boles, F. (2005). *Selecting and appraising archives and manuscripts*. Chicago: Society of American Archivists.
2. Dearstyne, B. W. (2008). *Leading and managing archives and records programs*. New York: Neal-Schuman.
3. Hughes, C. (2005). *Modern records management: Key skills and core competencies*. Oxford: Chandos.
4. Hunter, G. S. (2003). *Developing and maintaining practical archives*. New York: Neal-Schuman.
5. Hunter, G. S. (2009). *Records management: A how-to-do-it manual*. New York: Neal Schuman.
6. Read, J., Ginn, M. L., Jones, V. A., & Rankin, D. S. (2007). *Records management*. Cincinnati, Oh: South-Western Publishing.
7. Roe, K. D. (2005). *Arranging and describing archives and manuscripts*. Chicago: Society of American Archivists.
8. Smith, K. (2007). *Planning and implementing electronic records management*. London: Facet.

9. Smith, K. (2007). *Public sector records management: A practical guide*. Aldershot, Hants, England: Ashgate.

INTELLECTUAL PROPERTY RIGHTS

Objectives:

- To introduce concept of intellectual property rights.
- To develop familiarity with the provisions of international and national conventions and laws related to the protection of IPRs.
- Explore the role of libraries and information centers in creating, disseminating and managing intellectual property in society.

Description:

Introduction to Intellectual Property (IP) rights. IP laws, registration and its related aspects. Patents laws. Designing the IP laws. Trade marks law. Copyright law of Pakistan. Ownership and licenses. Copyright infringement. Principles of fair use. Copyright policy in libraries. Electronic reserves. Digital rights management.

Recommended Readings:

1. Cohen, J. E., et al. (2006). *Copyright in a global information economy*. New York: Aspen Publishers.
2. Crews, K. (2005). *Copyright law for librarians and educators*. Chicago: American Library Association.
3. Joyce, C. (2006). *Copyright law*. Newark, NJ: LexisNexis.
4. Norman, S. (2004). *Practical copyright for information professionals*. New York: Neal-Schuman.
5. Russell, C. (2004). *Complete copyright: An everyday guide for librarians*. Chicago: American Library Association.
6. Wherry, T. L. (2002). *Librarian's guide to intellectual property in the digital age*. Chicago: American Library Association.
7. Website of National Library of Pakistan.
8. Website of IPO (International Property Organization).

BIBLIOGRAPHY AND BIBLIOGRAPHIC CONTROL

Objectives:

- To understand the concepts of bibliography.
- To review the efforts of bibliographic control with special reference to Pakistan.

Description:

Meaning definition and concept of bibliography. Need and importance. Historical development. Types. Inner forms. Bibliographic control at international level. Preparation of bibliography. Automated bibliographic control. Bibliographic databases. Bibliometrics. Depository laws. Bibliographic control in Pakistan: PASTIC, PBWG and MLP etc.

Recommended Readings:

1. Davinson, D. (1981). *Bibliographic control*. London: Clive Bingley.
2. Library of Congress. (2008). *On the record: Report of the Library of Congress Working Group on the Future of Bibliographic Control*. Washington, D.C.: Library of Congress.
3. Pakistan. (1962-). *The Pakistan national bibliography*. Islamabad: Govt. of Pakistan, Department of Libraries, National Bibliographical Unit.

PROJECT MANAGEMENT

Objectives:

- To introduce the concepts and phases of project management.
- To develop skills in project planning.

Description:

Introduction to project management. Project life cycle. Project teams and team building. Tools and processes for project management. Project management context and processes. Project integration management. Project scope management. Project time management. Project cost management. Project quality management. Project human resource management. Project communications management. Project risk and procurement management. Project procurement management. PCs. Study of project management with reference to library in Pakistan. PC1, PC2 and PC3. Writing grant proposal. Monitoring and evaluation of project.

Recommended Readings:

1. Allan, B. (2004). *Project management: Tools and techniques for today's ILS professional*. Facet Publishing.
2. Heerkens, G. (2002). *Project management*. New York: McGraw-Hill.
3. Mantel, S. J. (2007). *Core concepts of project management in practice*. Hoboken, NJ: John Wiley.
4. Project Management Institute. (2008). *A guide to the project management body of knowledge*. Newtown Square, PA: PMI.
5. Website of Pakistan Institute of Mangament.

PRESERVATION & CONSERVATION OF LIBRARY MATERIALS

Objectives:

- To understand the concepts and methods of preservation and conservation of library materials.
- To develop skills in preserving and conserving materials.

Description:

Preservation & conservation (P&C) concepts and tools. Environment control guidelines and risk assessment Storage Handling. Exhibitions. Copying and reformatting. Preservation policy. Digital preservation. Management of P&C. Assessment of P&C. Disaster preparedness and management transformation and back up of library material from old to new media. International cooperation initiatives. Conservation and preservation issues.

Recommended Readings:

1. Balloffet, N., & Hille, J. (2004). *Preservation and conservation for libraries and archives*. Chicago: American Library Association.
2. Banks, P. N., & Pilette, R. (2000). *Preservation: Issues and planning*. Chicago: American Library Association.
3. Feather, J. (2004). *Managing preservation for libraries and archives: Current practice and future developments*. Aldershot: Ashgate.
4. Gorman, G. E., & Shep, S. J. (2006). *Preservation management for libraries, archives and museums*. London: Facet.
5. Ashraf Ali (1993). *Tahuff-e-Dustawezat*. Islam Abad. Muqtadara Qumi Zaban.

SERIALS MANAGEMENT

Objective:

- To introduce the concept and practices of serials management in libraries.
- Exposure of serial publication in Pakistan.

Description:

An overview of serial publications. Subscription policy and procedures. Classification and cataloguing. Preservation and conservation. Automated serial control. Bibliographic control. Publishing and Accrediting of Local and Foreign Journals. Problems of serial management with special reference to Pakistan. Management and use of e-journals.

Recommended Readings:

1. Black, S. (2006). *Serials in libraries: Issues and practices*. Westport, Conn.: Libraries Unlimited.
2. Fenner, A. (2006). *Integrating print and digital resources in library collections*. Binghamton, NY: Haworth Information Press.
3. Fowler, D. C. (2004). *E-serials collection management: Transitions, trends, and technicalities*. New York: Haworth Information Press.
4. Kidd, T. (2001). *The serials management handbook: A practical guide to print and electronic serials management*. London: Library Association Publishing.
5. Lightman, H., & Blosser, J. P. (2007). *Perspectives on serials in the hybrid environment*. Chicago: Association for Library Collections & Technical Services.
6. Russell, R. (2000). *Making sense of standards and technologies for serials management: A guide to practice and future developments for librarians, publishers, and systems developers*. London: Library Association Publishing.
7. Website of Thompson Tutor.
8. Website of Digital Library of Higher Education Commission (HEC).

INFORMATION SOURCES ON ISLAM AND PAKISTAN

Objectives:

- To demonstrate a base knowledge of Islamic and Pakistan studies and the vocabulary to analyze reference questions.
- To explore the nature of sources and their use by scholars and students.
- To demonstrate familiarity with the contents of primary and secondary reference resources including print, online databases, and websites.

Description:

Domain of Islamic Sciences and Pakistan studies; mapping of Islamic literature and literature on Pakistan; generation, output and dissemination of literature on Islam and Pakistan; evaluation of resources on Islam and Pakistan; and organizations dealing with Islam; bibliographic control of literature on Islam and Pakistan; and, important bibliographic and indexing services on Islam and Pakistan. Senses of Pakistan. Govt Pakistan of Publication.

Recommended Readings:

1. Sardar, Z. (1988). *Information and the Muslim World: A strategy for the twenty-first century*. London: Mansell.

2. Skreslet, P. Y., & Skreslet, R. (2006). *The literature of Islam: A guide to the primary sources in English translation*. Lanham, Maryland: Scarecrow Press.
3. Taylor, D. D. (1996). *Pakistan: A bibliography*. Karachi: Books and Books.
4. Woodward, C. (2002). *Islam: Background and bibliography*. Hauppauge, N.Y.: Novinka Books.
5. Samdani, Rais Ahmed (1993). *Bibliographical Source on Islam*, Karachi; Pakistan Bibliographical Working Group, 44p.
6. Website of Federal Bureau of Pakistan.

INFORMATION SOURCES ON BUSINESS & INDUSTRY

Objectives:

- To demonstrate a base knowledge of business and industrial studies and the vocabulary to analyze reference questions.
- To explore the nature of sources and their use by scholars and students.
- To demonstrate familiarity with the contents of primary and secondary reference resources including print, online databases, and websites.

Description:

Introduction to business and industry information concepts and services. Organizing and evaluating business information. Company information. Markets and industries. Economics and finance. Legislation and regulations. Management and human resources. National and International sources of business information. Yellow pages security and exchange commission of Pakistan. Business information services. Information needs of business professionals.

Recommended Readings:

1. Burke, M. E., & Hall, H. (1998). *Navigating business information sources: A practical guide for information managers*. London: Library Association Pub.
2. Moss, R. W., & Strauss, D. W. (2004). *Strauss's handbook of business information: A guide for librarians, students, and researchers*. Westport, CT: Libraries Unlimited.

INFORMATION SOURCES ON HEALTH SCIENCES

Objectives:

- To demonstrate a base knowledge of humanities fields and the vocabulary to analyze reference questions.
- To explore the nature of sources and their use by scholars, students, and the lay public in health sciences.

- To demonstrate familiarity with the contents of primary and secondary reference resources in health sciences, including print, online databases, and websites.

Description:

Information services and sources (both electronic and print) for health care professionals and the general public. Information needs of health professionals and scientists. Role of health libraries and information centers. Principles of medical library practice, functions, and management. Medical Literature produced in Pakistan.

Recommended Readings:

1. Forsman, R. B. (2001). *Administration and management in health sciences libraries: Current practice in health sciences librarianship*. Blue Ridge Summit: Scarecrow Press.
2. Holst, R., Phillips, S. A., & Bensing, K. M. (2000). *The Medical Library Association guide to managing health care libraries*. Chicago: Medical Library Association.
3. Huber J. T., Boorkman, J. A., & Roper, F. W. (2008). *Introduction to reference sources in the health sciences*. New York: Neal-Schuman.
4. Wood, M. S. (2008). *Introduction to health sciences librarianship*. New York: The Haworth Press.
5. MLA handbook for writers of research papers(2009). 7th ed . MLA
6. www.cpsp.edu.pk
7. www.nlm.nih.gov

INFORMATION SOURCES ON HUMANITIES AND SOCIAL SCIENCES

Objectives:

- To gain an awareness of the information structure for various disciplines in humanities and social sciences.
- To gain practical experience with specific information sources each humanities and social science field.

Description:

Information sources and services in the fields of humanities and social sciences. Information needs and information-seeking behavior of user groups in these fields. Information cycle, print and digital reference services, and information-seeking research.

Recommended Readings:

1. Blazek, R., & Aversa, E. (2000). *The humanities: A selective guide to information sources*. Englewood, CO: Libraries Unlimited.
2. Fisher, D., Price, S. A., & Hanstock, T. (2002). *Information sources in the social sciences*. Munchen: K.G.Saur.

3. Herron, N. L., Ed. (2002). *The social sciences: A cross-disciplinary guide to selected sources*. Greenwood Village, CO: Libraries Unlimited.
4. Li, T. (2000). *Social science reference sources: A practical guide*. Westport, Conn.: Greenwood Press.
5. www.IOSS.org
6. www.cosspak.org

INFORMATION SOURCES ON SCIENCE & TECHNOLOGY

Objectives:

- To demonstrate a base knowledge of science and technology fields and the vocabulary to analyze reference questions.
- To explore the nature of sources and their use by scholars and students.
- To demonstrate familiarity with the contents of primary and secondary reference resources including print, online databases, and websites.

Description:

Process of communication and information requirements in the scientific community. Study of primary, secondary, and tertiary sources of information in the physical, biological, and applied sciences. Study and application of new information technologies, and in particular the World Wide Web (WWW). as used in scientific and technical communication.

Recommended Readings:

1. Hurt, C. D. (1998). *Information sources in science and technology*. Englewood, CO: Libraries Unlimited.
2. Meadows, A. J. (1998). *Communicating research*. Toronto: Academic Press.
3. Stern, D. (2000). *Guide to information sources in the physical sciences*. Englewood, CO: Libraries Unlimited.
4. www.Pastic.gov.pk
5. [www.Thompson Tutor](http://www.ThompsonTutor.com).
6. [www.Science direct.com](http://www.ScienceDirect.com)
7. www.psf.gov.pk

INFORMATION SOURCES ON LAW

Objectives:

- To demonstrate a base knowledge of legal studies and the vocabulary to analyze reference questions.
- To explore the nature of sources and their use by scholars, legal practitioners and students.

- To demonstrate familiarity with the contents of primary and secondary reference resources including print, online databases, and websites.

Description:

Nature and scope of law librarianship and legal information sources. Examination of the organization of legal knowledge. Legal research process. Law information sources both print and electronic. Information needs of legal practitioners. Study of Laxus, and Nexus, Indian Law and Islamic Law Pakistan Legal Decisions (PLD).

Recommended Readings:

1. Berring, R. C., & Edinger, E. A. (2005). *Finding the law*. St. Paul, Minn: Thomson/West.
2. Cohen, M. L., & Olson, K. C. (2007). *Legal research in a nutshell*. St. Paul, Minn: Thomson/West.
3. Defoe, D. D., & Hepler, C. I. (2007). *Find it free and fast on the Net: Strategies for legal research on the Web*. Eau Claire, WI: National Business Institute.
4. Elias, S. R., & Levinkin, S. (2005). *Legal research: How to find & understand the law*. Berkeley, CA: Nolo Press.
5. Kehoe, P. E., Lyman, L., & McCann, G. (1995). *Law librarianship: A handbook for the electronic age*. Littleton, Colo: F.B. Rothman.
6. Sloan, A. E. (2009). *Basic legal research*. New York: Aspen Pub.
7. Thomas, P. A., & Knowles, J. (2006). *Effective legal research*. London: Thomas/Sweet & Maxwell.
8. www.Pakistanlawsite.com

INFORMATION SOURCES ON AGRICULTURE

Objectives:

- To demonstrate a base knowledge of agricultural sciences and the vocabulary to analyze reference questions.
- To explore the nature of sources and their use by scientists and students.
- To demonstrate familiarity with the contents of primary and secondary reference resources including print, online databases, and websites.

Description:

Information sources and services in the field of agricultural sciences. Information needs and information-seeking behavior of user groups in this field. Information cycle, print and digital reference services, and information-seeking research. Study of Agricultural Research Institute in Pakistan. AGRIS and AGRUCULA.

Recommended Readings:

1. Drew, W. (1995). Key guide to electronic resources: Agriculture. Medford, NJ: Information Today.
2. Lilley, G. P. (1993). Information sources in agriculture and horticulture. London: Bowker-Saur.
3. www.PARC.gov.pk/narc.htm
4. www.nalusda.gov

RECOMMENDATIONS

The curriculum revision committee concludes with that the implementation of new curriculum can only be achieved if it is properly followed and cared of. The same needs proper home work to meet the pre requisites. However committee hopes that in order to implement the changed program in letter and spirit the authorities will meet all these formalities on priority bases.

To carry out this program the committee recommends that:

1. Regular in-service faculty development program be chalked out for new and existed faculty at national and international level.

The training should aim the following areas:

- Pedagogical skills
 - Use of emerging electronic gadgets e.g. multimedia, ICT's data shows and over head projector, e- searching and surfing, use of power point and other techniques.
 - Managerial and administrative skills.
2. The members agreed to establish a platform with the name of "Pakistan Library and Information science Council" which will be responsible to enroll and register the qualified professional by issuing them a license .The council will also be responsible for regulating and framing the bye laws and standards for academic etc.
 3. The nature of library and information science courses is kept changing off and on where as our public service commission offices are not updating themselves about the change in nomenclature and status of the degrees and courses offered .They without having verified the situation advertise the posts which cause chaos and uncertainty for both employee and employer.

Keeping in view this situation, the committee recommends the all the provincial and federal services commissions be intimated about the criteria and pre requisites of a post being advertised.

4. The committee recommends that Higher Education Commission should arrange the following resources for the library schools.
To establish /update the computer laboratories, HEC should sanction 30 latest PCs and three laptops for each school of public sector.
 - A New television set, DVD and VCR.
 - 2 multimedia and over head projectors.

- 2 tape records and a fax machine.
 - A latest photo copier be provided.
5. ALA and IFLA Life membership for all schools be paid by HEC and encourage faculty participation by providing them scholarships and funds etc.
 6. Latest books and at least subscription of five international reputable Journals be sanctioned for all the schools.