BABA FARID UNIVERSITY OF HEALTH SCIENCES

Ph.D. (Library and Information Science:Health Sciences Library and Information System)

[Course Work]

(Doctor of Philosophy Degree Program) Choice Based Credit System (CBCS)

(NEP-2020)

(To be implemented from Academic Year 2025-2026)

Framed By

Department of Health Sciences Library and Information System

Baba Farid University of Health Sciences

Faridkot-151203, Punjab (India)

Ordinance

Ph.D. (Library and Information Science:Health Sciences Library and Information System)

[Course Work]

PREFACE

The syllabus for the Ph.D. Course Work designed by the Department of Health Sciences Library and Information System, University Library, under the Board of Post Graduate Studies (BPGS) by following the NEP-2020 Choice Based Credit System (CBCS) format is outlined below. This syllabus has been developed in accordance with the UGC guidelines for the Learning Outcomes Based Curriculum Framework (LOCF) approach. A key focus of the curriculum is to develop interdisciplinary skills that will aid students in their research endeavours. Students enrolled in the Ph.D. program are required to complete a mandatory course of six months (6 months) duration, of 18 credits. The specific breakdown of courses and corresponding credits is provided further. Additionally, students have the option to select elective courses in various fields of Health Sciences Library and Information System and related interdisciplinary subjects. This course structure aligns with the vision of Baba Farid University of Health Sciences (BFUHS) to offer a comprehensive academic curriculum and a dynamic learning environment that prepares students to address both national and global challenges. The courses emphasize fundamental knowledge, offer flexibility, and integrate regional, national, and global perspectives into the learning objectives.

DEPARTMENTAL PROFILE

The Department of Health Sciences Library and Information System was founded in 2010as part of the University. It began with a modest yet significant mission to provide quality education in Health Sciences Library and Information System and conduct cutting-edge research in this field, both within India and internationally. Nestled within the lush green surroundings of the University campus, the Department offers PGDHL and Ph.D. programs in Library and Information Science:Health Sciences Library and Information System. The Department provides a comprehensive two-semester diploma program, specializing in key areas of Health Sciences Library and Information System, designed to equip students with a solid theoretical foundation and practical laboratory skills. Along with a robust academic curriculum and a dynamic learning environment, the Department aims to develop graduates who are capable of addressing challenges in the field through research and innovation. With a strong team of well-trained young faculty, the Department is making strides in modern research across diverse areas. The Ph.D. program in Library and Information Science: Health Sciences Library and Information System is set to begin in 2025. The University Library holds immense potential for research and development. To this end, the Department is dedicated to the sustainable utilization of resources, aimed at enhancing the quality of life for citizens. Faculty members are actively engaged in research, supported by various sponsored research projects.

REGULATIONS RELATING TO Ph.D. COURSEWORK

(a) The credit assigned to the Ph.D. course work shall be minimum of 12(twelve) and maximum of 18 (eighteen) credits for Ph.D. inLibrary and Information Science:Health Sciences Library and Information System at BFUHS.

The course work shall be treated as prerequisite for Ph.D. preparation. The Department of Health Sciences Library and Information System, University Library shall assign a minimum of four Credits to one or more courses on Research Methodology covering areas such as quantitative methods, computer applications, review of published research in the relevant field, training, field work, etc. Additionally, there shall be a compulsory course paper of two credits on Research and Publication ethics (as per the directives of UGC vide DO no-F.I1/2018(Journal/CARE) dated December 2019). Other courses, with rest of the credit, shall be advanced level courses preparing the students for Ph.D. degree.

(b) The course work for Ph.D. shall be prescribed by the Board of Post Graduate Studies (BPGS) of the concerned Department/ Institute/ Centre and approved by the Concerned Faculty (CF) and the Academic Council (AC). All courses prescribed for Ph.D. course work shall be in conformity with the credit hour instructional requirement and shall specify content, instructional and assessment methods. The concerned DBS shall slightly modify/ upgrade the contents of the course work as and when required and implement the same from next academic session on approval by the Concerned Faculty (CF) and the Academic Council (AC).

(c) The Department where the scholar pursues his/her research shall prescribe the course(s) to him/her based on the recommendations of the Research Advisory Committee (RAC) and approved by the Doctoral Research Committee (DRC).

(d) Admitted scholars shall be required to complete the prescribed course work during the initial one semester as a regular student fulfilling the mandatory attendance and other associated requirements for successful completion of the course. In-service candidates admitted in the Ph.D. course shall have to take mandatory study leave for the period from their employer/competent authority. However, those scholars who have been awarded M.Phil. Degree and/or have successfully passed M.Phil./Ph.D. course work in the concerned/relevant subject/discipline shall be either fully or partially exempted as the case may be from doing the prescribed course work provided such course work pursued earlier by them is considered equivalent and appropriate by the RAC and DBS, and so approved by the competent authority of the University. Such scholars as have been prescribed to pursue additional course work paper(s) shall have to fulfil the minimum requirement of 18 (eighteen) Credits to complete the course work.

(e) The course work shall be evaluated on the basis of the performance of the scholar in the Internal assessment examination(s) to be conducted by the concerned Department/ Institute/Centre, and the End semester examination to be conducted by the University. The weightage for the Internal assessment and the End semester examination shall be in 20:80 ratio. In case, the scholar fails to secure a minimum of 50 % marks in the Internal assessment examination, he/she shall be dropped from the programme.

(f) A scholar has to obtain a minimum of 50 % of marks or its equivalent grade in the UGC 7- point scale (or an equivalent grade/CGPA in a point scale wherever grading system is followed) in the course work in order to be eligible to continue in the programme

and submit the thesis. In case the scholar fails in the End Semester Examination of the course work, a supplementary examination shall be conducted by the University within two months from the date of declaration of the result. However, the scholar shall be dropped from the program if he/she fails again to clear the examination.

1. **TYPES OF COURSES:** Usually a course refers to a 'paper' and is a component of an academic programme. Courses in Ph.D. course work shall be of two kinds:
   (a) Core and (b) Elective.

   (a) Core Courses: A core courses are the compulsory papers to be studied by all the scholars to complete the requirements of the Ph.D. degree.
   (i) Research Methodology: It is a course of 4 (four) credits covering areas such as quantitative methods, computer applications, review of published research in the relevant field, training, field work, etc.
   (ii) Research and Publication Ethics: The department shall offer a course paper of 2 (two) credits on Research and Publication ethics (as per the directives of UGC vide DO no - F.1- 1/2018(Journal/CARE) dated December 2019).

   Analytical Techniques in Library and Information Science:Health Sciences Library and Information System**:** Department shall offer a course paper of 3 (three) credits.
   (iii) Credit Seminar: The following course paper of 3 (three) credits will be offered.

   (b) Elective Courses: Elective courses are the courses which can be chosen from a pool of papers from a syllabus provided by a particular department from the main discipline or froma sister/related discipline which supports the main discipline, on mutual consent of the concerned departments.

2. **COURSE CODING**
   (a) The courses offered by the department will carry five-letters i.e. Ph.D. course (PHD) and departmental code (PM) so that the complete code will be PHDPM, Next three- digit number refers to course code series like, 101. Therefore, final code for a paper will be PHDPM-101
   (b) The number of credits is given in the form L:T:P:D, where L indicates the number of contact hours of lecture, and T the number of contact hours for tutorials, P stands for laboratory/practical credits, D stands for dissertation and C for total credit per course. Each lecture credit corresponds to one lecture hour per week, while each laboratory credit corresponds to a 2- hour laboratory class.

3. **GRADE POINT AND GRADE LETTER:**
   (a) Under the absolute grading system adopted by the University, the marks shall be converted to grades based on pre-determined class intervals. The grading system with the following letter grades shall be adopted in awarding the grades and CGPA under the credit-based semester system. % of Marks Grade Point Grade Letter ≥ 90 but ≤ 100 % 10 O(Outstanding)≥ 80but ≤90%9A(Excellent)≥ 70but ≤ 80%8B(Very Good)≥ 60but ≤ 70% 7 C (Good) ≥ 55 but ≤ 60 % 6 D (Average) Below 55 % 0 F (Fail) Absent 0 AB (Absent)

(b) A Research Scholar obtaining Grade F shall be considered failed and shall be required to reappear in the examination.

4. **COMPUTATION OF SGPA AND CGPA:**

(a) The computation of the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) shall be done as follows:

(i) Semester Grade Point Average (SGPA) is the sum of the products of the course credit and grade points scored by a research scholar divided by the sum of all course credits offered by the research scholar. It can be calculated in the following manner:$A(Si)$ = $\sum(Ci\times Gi)$ $\sum Ci$Where, Ci is the number of credits of the i th course and Gi is the grade point scored by the research scholar inthe i th course**.**

(i) Cumulative Grade Point Average (CGPA) is the sum of the products of the total number of credits of all courses taken by a research scholar in a semester with the SGPA in that semester divided by the total number of credits of all courses taken. It can be calculated in the following manner: $CGPA$ =$\sum(Ci\times Si)\sum Ci$ Where, Si is the SGPA of the semester and Ciis the number of credits in that semester (Details attached).

5. **COURSE STRUCTURE:**

(a) The duration of the Ph.D. Library and Information Science:Health Sciences Library and Information System course work shall be of One (1) Semester (6 months).

(b) The credit assigned to the Ph.D. course work consisting of 6 (six) courses shall be maximum of 18 credits. The curricula and syllabi for the program shall be prescribed from time to time by the University.

(c) These 18 credits shall be distributed as follows:

(d) The open elective courses are of interdisciplinary nature and can be opted by the scholars from other departments. Scholars shall have to opt any one course from list first and second course from second list as per the recommendation of Research Advisory Committee (RAC).

(e) Scholars shall have to opt any one course from the list as per the recommendation of RAC.

(f) Discipline Specific Elective (DSE) courses provide an expanded scope, enabling an exposure to some other discipline/domain, and nurturing research scholar's proficiency/skill. Scholars shall have to opt any one course from the list as per the recommendation of RAC.

6. **Duration of Course:**

The program of study for Ph.D. Library and Information Science: Health Sciences Library and Information System shall be minimum of three academic years. The curricula and syllabi for the program shall be prescribed from time to time by the University.

7. **Eligibility for admission**

a. Candidates with Postgraduate Degree in Library & Information Sciences or any other Postgraduate degree considered as equivalent by BFUHS are eligible for enrolment to Ph.D. in Library and Information Science: Health Sciences Library and Information System (Presently under the faculty of Medical Sciences). Preference will be given to the candidates who have completed the Post

Graduate Diploma in Health Sciences Librarianship (PGDHL) course from BFUHS.

b. They must have a minimum aggregate of 55% marks to be eligible for admissions. A relaxation of 5% marks or its equivalent grade may be allowed for those belonging to SC/ST/OBC (non- creamy layer)/Differently-abled, Economically Weaker Section (EWS), Women Candidates and other categories of candidates as per the decision of the University/Commission fromtime to time.

8. **Admission Process:** The admission to this programme shall be through an Entrance Test or BFUHSET followed by a Personal Interview (PI) conducted by the department at BFUHS. The candidates with UGC NET/UGC JRF, will get preference with additional weightage.

9. **Number of Seats:** Every year, number of seats in the department will be decided based on the vacancy available with each guide in the department.

10. **Medium of Instructions** The medium of instruction during the course and examinations shall be English.

11. **Examination Schedule:** Each semester shall consist of not less than 80 working days. The odd semesters shall be conducted from the month of June/July to November/December and the even semesters shall be conducted from the month of December/January to May/June in every calendar year or on such dates as determined by the University from time to time.

12. **Attendance and** progress A candidate is required to put in at least 80% attendance in individual courses considering theory and practical separately. The candidate shall complete the prescribed course satisfactorily to be eligible to appear for the respective examinations. However, relaxation in attendance for appearing in examination will be as per University Rules.

13. **Academic work** A regular record of attendance both in Theory, Practical, Seminar, Tutorial, Dissertation, Assignment, Journal club, Discussion with the supervisor, Research work presentation and Dissertation shall be maintained by the department / teaching staff of respective courses.

14. The course of study for Ph.D. Library and Information Science: Health Sciences Library and Information System shall include Semester wise Theory & Tutorial examination. Internal Assessment shall be submitted to the University at least two weeks before the commencement of theory examinations or within one week from the issuance of Roll Numbers by the University.

The Ph.D. Library and Information Science: Health Sciences Library and Information System examination shall be held by the University in the following pattern:

***Note:** There shall be no University examination for the subjects of Credit Seminar. Examination will be conducted at College/Department level and marks will be sent to

University for final inclusion in the result.

i) Each theory paper shall be of three hours duration.

ii) The minimum number of marks to pass the examination shall be 50% in theory including Internal Assessment in each subject.

iii) The candidate who will absent himself/herself from the examination will be deemed to have been failed in that subject.

iv) A candidate who fails in more than four subjects will not be promoted.

v) A candidate who passes in one or more subjects shall be exempted from appear in gin these subjects at a subsequent examination, but the candidate must pass the examination in a maximum of four attempts, failing which he/ she will not be allowed to continue his studies.

vi) Every candidate shall submit a thesis/project report plan to the University within one month from the declaration of the result.

vii) Every candidate shall carry out work on an approved research project under the guidance of a recognized Supervisor, the results of which shall be written up and submitted in the form of a thesis by the candidate.

viii) Thesis shall be submitted to the University through Head of the Research Centre/College/Institution.

ix) The Vice-Chancellor may allow a candidate to submit the thesis within one month after the date fixed for the purpose with the prescribed late fee.

x) The thesis shall embody the results of the candidate's own research and/or experience and shall contain precise reference to the publications quoted, and must attain a standard & shall be satisfactory in literary presentation and in other respects and should end with a summary embodying conclusions arrived at by the candidate. The thesis shall be type written on one side of the bound paper, indicating on the outside cover its title and the name of the candidate as per university rules.

xi) The thesis shall be examined by a minimum of two examiners, one within state and one outside state. Normally the Viva-voce examination will be conducted by the same examiner who has evaluated the Thesis. However, in exceptional circumstances another examiner may be called for this purpose. The candidates who have submitted the thesis in University will be allowed to appear in the Viva-Voce examination. However, the result shall be declared only on receipt of the thesis acceptance from both the examiners.

xii) The examiners shall send only report to the University after evaluation of thesis. The external examiners shall also send copy of the thesis along with the report to the University. The University shall keep two copies in the University Library for reference of the students.

(g) Award of Degree

Each successful candidate shall be awarded a degree of Ph.D. in Library and Information Science: Health Sciences Library and Information System.

Ph.D. (Library and Information Science: Health Sciences Library and Information System**)**

Instructions to Paper Setter

Question paper pattern for theory Examinations

i. Multiple Choice Questions (MCQs) /Fill ups /Short answer questions (Answer all the questions):10 x 1 = 10

ii. Short Answers (Answer 5 out of 6):5x6=30

iii. Long Answers (Answer 4 out of 6):4x10=40

Total = 80 marks

Question paper pattern for Practical Examinations (if any)

1. Synopsis:20
2. Experiments:40
3. Viva voce:20

Total=80marks

Graduate Attributes

Graduates shall have enhanced skills in varied aspects of conducting research in different cultural settings. Graduates shall be competent in analyzing problems related to library and information science especially in health sciences and finding gaps in the existing body of literature. Graduates shall have a scientific attitude in examining research problems and conducting research for their solutions at local and global level. Graduates shall contribute significantly in the knowledge economy of the nation.

PROGRAMME STRUCTURE AND SCHEME OF EXAMINTION (Ph.D. COURSEWORK) (CBCS-2026) (ASPERNEP-2020)

	SEMESTER-I (YEAR-1)											
Semester	Course Code	Title of the Paper(s)	Course Type	Credits					Marks		
				L	T	P	D	C	EA	IA	TM
SEMESTER-I	PHDHL -101 (Course – I)	RESEARCH METHODOLOGY	CC	4	0	0	0	4	80	20	100
	PHDHL -102 (Course – II)	RESEARCH AND PUBLICATION ETHICS	CC	2	0	0	0	2	80	20	100
	*PHDHL - (Course – III)	OPTION-I	OE/MC-I	3	0	0	0	3	80	20	100
	**PHDHL - (Course – IV)	OPTION-II	OE/MC-II	2	0	0	0	2	80	20	100
	PHDHL -121 (Course – V)	CREDIT SEMINAR	CC	0	1	0	0	1	80	20	100
	SUB-TOTAL			11	1	0	0	12	400	100	500
		Optional Elective (OE)/Major Course(MC-I)/ Optional Elective (OE)/ Minor Course (MC-II) (Compulsory)(Any two courses-taking one from each option) *OPTION-I (Major Course) PHDHL -103- HEALTH SCIENCES ENVIRONMENT AND INFORMATION PHDHL -104- HEALTH SCIENCE INFORMATION AND IC PHDHL-105-HEALTH INFORMATION RESOURCES, SYSTEMS AND SERVICES **OPTION-II (Minor Course) PHDHL -106- DIGITAL LIBRARY: DESIGN AND DEVELOPMENT PHDHL -107- BASIC STATISTICS AND USE OF COMPUTERS FOR DATA PHDHL -108- LIBRARY AUTOMATION									
		CC: Compulsory Course / OE: Optional Elective/ MC: Major Course/ OE: Optional Elective/ MC: Minor Course /L: Lecture/ T: Tutorial/P:Practical/ D: Dissertation/ C: Credit/ EA: External Assessment/ IA: Internal Assessment/ TM: Total Marks									

PHDHL -101::RESEARCHMETHODOLOGY
(Semester-I)

L+T+P+D	:	**4+0+0+0**	**Relativeweightage**		
Credits:	:	**4**	InternalAssessment/Exam	:	**20**
Contacthours	:	**56**	End-semesterExamination	:	**80**

Unit	Content	Lectures
I	History,my ths and ethnic practices; need, importance and impact of research; types of research; research process.	5
II	Synopsis writing: Selecting research problem, formulation of research projects; survey of literature; research infrastructure; experimental designs; sampling designs; recording of observations; measurement and scaling techniques; GLPs.	8
III	Formulation and types of hypothesis; collection, maintenance, storage and analysis of data; measures of central tendencies and relationships and error analysis; tests of significance.	7
IV	Compilation and presentation of results, Writing of manuscripts; research reports and thesis; organization of reference material using end note; bibliography; plagiarism; IPR and patent application, entrepreneurship.	8
V	Financialsupportandvariousfundingagencies;Multidisciplinaryandmulti-institutional research; writing research proposal for external funding.	6
VI	Computer and informatics; introduction; word processing, excel, power point presentation; graph and figure plotting; web browsing; information resources and various databases.	8
VII	Demonstration of departmental research activities and instrumentation.	14

Suggested Readings

1. Best J.W. (1999). Research in Education. New Delhi: Prentice Hall of India Pvt. Ltd.
2. Bogdon, R., & Biklen, S. K. (2008). Qualitative Research for Education: An Introduction to Theories and Practice. New Delhi: PHI learning
3. Borg, W.R.,& Gall, M.D. (1983). Educational Research – An Introduction.New York: Longman, Inc.
4. Chandra, S. S., & Sharma, R.K. (2010). Research in education. New Delhi:Atlantic Publishers and Distributers (P) LTD.
5. Christensen,L.(2007).ExperimentalMethodology.Boston:Allyn&Bacon.
6. Creswell,J.W.(2015).EducationalResearch:Planning,Conductingand Evaluating Quantitative and Qualitative Research. Boston: Pearson Publications.
7. Curtis, W., Murphy, M., & Shields, S. (2013). Research and Education. New York & London: Routledge
8. EfratEfron, S.,& Ravid, R. (2013). Action Research in Education: A Practical Guide, New York: Routledge
9. Egbert,J.,&Sanden, S. (2013). Foundations of Education Research: Understanding Theoretical Components. New York: Routledge.
10. Fraenkel, J.R.,& Wallen, N.E. (1996). How to Design and Evaluate ResearchinEducation.NewYork:McGrawHill.
11. Gordon,P.(1996).AGuidetoEducationalResearch.NewYork:Routledge
12. Kaul, L. (1984). Methodology of Educational Research. New Delhi: Vikas Publications.
13. Kilkapatrick, D.L. (2005). Evaluating training Programmes: The four Levels. San Francisco: Brrett-Kochler.
14. Kress, T. (2013). Using Critical Research for Educational and Social Change. New York & London: Routledge.
15. Lauren, B., Little, T. D.,& Card, N. A. (2012). Developmental Research Methods. New York: The Guilford Press.
16. Martella, R. C., Nelson,J.R., Morgan, R. L.,& Martella,N. E.(2013). Understanding and Interpreting Educational Research, New York: Routledge Guilford Press
17. Maykut, P.,& Morehouse, R. (1994). Beginning Qualitative Research- A Philosophic and Practical Guide. London: The Falmer Press.
18. Miller, S. A. (2007). Developmental Research Methods. New Delhi: Sage Publications.
19. Opie, C. (2004). Doing Educational Research: A Guide for First time researchers. New Delhi: Vistar Publications.
20. Patton, M.Q. (2002). Qualitative Research and Evaluation Methods. C.A: Sage Publications.
21. Petscher, Y., Schatschneider, C.,& Compton, D. L. (2013). Applied Quantitative Analysis in Education and the Social Sciences. New

York&London: Routledge

22. Reason, P.,& Bradbury, H. (Eds) (2006). Handbook of action research: Concise paperback edition. CA: Sage Publications.
23. Scott, D., & Usher, R. (1996). Understanding Educational Research. New York: Routledge.
24. Tolmie, A., McAteer, E.,& Muijs, D. (2012). Quantitative Methods in EducationalandSocialResearchUsingSPSS.Maidenhead:OpenUniversityPress
25. Wellington,J.(2015). Educational Research. New Delhi: Bloomsbury Academic.
26. Weirsma. W., & Stephen G. (2009). Research methods in Education. New York: Pearson Education

Web-resources

https://epgp.inflibnet.ac.in

PHDHL -102::RESEARCH AND PUBLICATION ETHICS
(Semester-I)

L+T+P+D	:	**2+0+0+0**	**Relative weightage**		
Credits:	:	**2**	Internal Assessment/Exam	:	**20**
Contact hours	:	**28**	End-semester Examination	:	**80**

Unit	Contents	Lectures
I	PhilosophyandEthics:Introductiontophilosophy:definition,natureandscope,concept, branches. Ethics: definition, moral philosophy, nature of moral judgement sander actions.	4
II	Scientific Conduct: Ethics with respect to science and research. Intellectual honesty andresearchintegrity.Scientificmisconducts:Falsification,Fabrication,andPlagiarism (FFP).Redundant publications: duplicate and over lapping publications, salamislicing. Selective reporting and misrepresentation of data.	5
III	Publication Ethics: Publication ethics: definition, introduction and importance. Best practices / standards setting initiative and guidelines: COPE, WAME, etc. Conflicts of interest. Publication misconduct: definition, concept, problems that lead to unethical behaviour and vice versa, types. Violation of publication ethics, authorship and contributor ship. Identification of publication misconduct, complains and appeals. Predatory publishers and journals.	7
IV	Open Access Publishing: Open access publications and initiatives. SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies. Software tools to identify predatory publications developed by SPPU. Journal finder / journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggested, etc. Publication Misconduct: Group Discussions: Subject specific ethical issues, FFP, authorship.Conflictsofinterest.Complaintsandappeals:examplesandfraudfromIndia and abroad.Software tools: Use of plagiarism software like Turnitin, Urkund and other open source software tools.	7
V	Databases and Research Metrics: Databases: Indexing databases. Citation databases: Web of Science, Scopus, etc. Research Metrics: Impact Factor of journal as per Journal Citation Report, SNIP, SJR, IPP, CiteScore. Metrics: h-index, gindex, i10index, altmetrics.	5

Suggested Readings

1. Best J.W. (1999). Research in Education. New Delhi: Prentice Hall of India Pvt. Ltd.

2. Bogdon, R., & Biklen, S. K. (2008). Qualitative Research for Education: An Introduction to Theories and Practice. New Delhi: PHI learning

3. Borg, W.R.,& Gall, M.D. (1983). Educational Research – An Introduction. New York: Longman, Inc.

4. Chandra, S. S., & Sharma, R.K. (2010). Research in education. New Delhi: Atlantic Publishers and Distributors (P) LTD..

5. Creswell,J.W. (2015).Educational Research: Planning, Conductingand Evaluating Quantitative and Qualitative Research. Boston: Pearson Publications.

6. Curtis, W., Murphy, M., N Shields, S. (2013). Research and Education. New York & London: Routledge

7. Gordon,P.(1996).AGuidetoEducationalResearch.NewYork:Routledge

8. Kaul, L. (1984). Methodology of Educational Research. New Delhi: Vikas Publications.

9. Kilkapatrick,D.L.(2005).EvaluatingtrainingProgrammes:ThefourLevels. San Francisco: Brrett-Kochler.

10. Kress, T. (2013). Using Critical Research for Educational and Social Change. New York & London: Routledge.

11. Lauren, B., Little, T. D.,& Card, N. A. (2012). Developmental Research Methods. New York: The Guilford Press.

12. Martella, R. C., Nelson,J.R., Morgan, R. L.,& Martella,N. E.(2013). Understanding

13. Patton, M.Q. (2002). Qualitative Research and Evaluation Methods. C.A: Sage Publications.

14. Tolmie, A., McAteer, E., Muijs, D. (2012). Quantitative Methodsin Educational and Social Research Using SPSS. Maidenhead: Open University Press

15. Wellington,J.(2015). Educational Research. New Delhi: Bloomsbury Academic.

16. Weirsma. W., & Stephen G. (2009). Research methods in Education. New York: Pearson Education

PHDHL – 103 ::HEALTH SCIENCES ENVIRONMENT AND INFORMATION

L+T+P	:	**3+0+0**	**RelativeWeightage**		
Credits:	:	**3**	InternalAssessment/ Exam	:	**20**
Contact Hours	:	**42**	End-semesterExamination	:	**80**

Scope: To make the students understand basic knowledge about Health Science Environment and Information.

Objectives: After completion of the course, studentisable:

- **a.** To understand the basic of health care environment, health science profession and system.
- **b.** To know about the health information users and their needs.

Theory

Unit	Contents	Lectures
I	Changing information and health care environments, Legal, ethical, economic, and legislative issues	7
II	Health sciences professions: system, structure, terminology, education and training patterns, and associations and organizations	10
III	The Health Information Users; SB: basic concepts; The Changing information environment; Information needs of health practitioners, researchers, educators, students, and consumers; Information seeking and transfer behaviour of user groups and individuals	10
IV	Assessment of information needs; Methodology, analysis, evaluation, and synthesis of information for meeting information needs; User education/orientation Standards for Health Science Libraries	8
V	Associations & Organizations in Health Science Information: MLA, MLAI, KMLA Major health programs and policies - WHO, ICMR, DGHS, etc	7
	Total	**42**

PHDHL – 104 :: HEALTH SCIENCE INFORMATION AND ICT

L+T+P	:	**3+0+0**	**Relative Weightage**		
Credits:	:	**3**	Internal Assessment/ Exam	:	**20**
Contact Hours	:	**42**	End- semester Examination	:	**80**

Scope: To make the students understand basic knowledge about health science information and services.

Objectives: After completion of the course studentisable:

a. To understand the basic health science information.
b. To know about the e-learning, technology for e-learning etc.

Theory

Unit	Contents	Lectures
I	Impact of ICTs on Information and Health Science Communication	7
II	E-Learning; Information Literacy	10
III	Technology for E-learning, Software for e-learning, and Innovation through e-learning technologies	10
IV	Electronic Publishing: Impact and Implication	10
V	Hypermedia and Multimedia	5
	Total	**42**

Suggested Readings

- Garson, G. D. (Ed.). (1999). *Information technology and computer applications in public administration: issues and trends*. IGI Global.
- Sweetland, J.H., & Cheney, F.N. (2001). *Fundamental reference sources*. American Library Association.
- Crawford, J. (2010). *Evaluation of library and information services*. Routledge.
- Farmer, L.(Ed.). (2007). *The human side of reference and information services in academic libraries: adding value in the digital world*. Elsevier.
- Foskett, D. J. (1967). *Information service in libraries.* Archon Book Hamden, Connecticut.
- Dowell, D. R., & Fourie, D. K. (2009). *Libraries in The Information Age: An Introduction And Career Exploration (Library And Information Science Text).* Libraries Unlimited, New York.

- Singh,G. (2013). *Information sources, services and systems*. PHI Learning Pvt. Ltd.
- Katz, W.A. (2002). *Introduction to Reference Work: Reference services and reference practices*. McGraw Hill.
- Krishan, K. (2009). *Reference service*. Vikas Publishing House.
- Ranganathan, S. R. (1990). *Reference service*. Sarada Ranganathan Endowment for Library Science, Bangalore.
- Walford, A.J. (1996). *Guide to reference books*. Library Association, London.
- Woodsworth, A., & WilliamsII, J.F. (2018). *Managing the economics of owning, leasing and contracting out information services*. Routledge.

PHDHL – 105 ::HEALTH INFORMATION RESOURCES, SYSTEMS AND SERVICES

L+T+P	:	**3+0+0**	**RelativeWeightage**		
Credits:	:	**3**	InternalAssessment/ Exam	:	**20**
Contact Hours	:	**42**	End-semesterExamination	:	**80**

Scope: To make the students understand basic knowledge about health information resources and services.

Objectives: After completion of the course, studentisable:

a. To understand the basic health information infrastructure.
b. To know about the global information systems, information search and retrieval, information acquisition etc.

Theory

Unit	Contents	Lectures
I	Information Resources in Health sciences; National health information infrastructure in India; NIC-MEDLARS centre, etc	5
II	Global information systems in health sciences: MEDLARS, Information Activities of WHO, etc	5
III	Health library networks, consortia	8
IV	Open access resources in health sciences; PLoS, PubMed, etc. The Indian scenario	5
V	Management of Health / patient records	5
VI	Information search & retrieval in health sciences; Information services	7
VII	Health science information acquisition, analysis, consolidation, dissemination-products and services, Feedback	7
Total		**42**

PHDHL – 106 ::DIGITAL LIBRARY: DESIGN AND DEVELOPMENT

L+T+P	:	**1+1+0**	**Relativeweightage**		
Credits:	:	**2**	InternalAssessment/Exam	:	**20**
Contact hours	:	**28**	End-semesterExamination	:	**80**

Scope: To make the students understand basic knowledge of Digital Library Design and Development

Objectives: The objectives of Digital Library: Design and Development include:

a. Enhancing individual capabilities through targeted training and education to improve skills of digital library design and development.

Unit	Contents	Hours
I	DL: Concept and Structural Discussion and Assessment	3
II	Metadata Standards	3
III	Design and Building of DLs	10
IV	Technology for DLs	5
V	Open source software; GSDL	7
Total		**28**

PHDHL – 107 ::BASIC STATISTICS AND USE OF COMPUTERS FOR DATA

L+T+P	:	**1+1+0**	**Relative weightage**		
Credits:	:	**2**	Internal Assessment/Exam	:	**20**
Contact hours	:	**28**	End-semester Examination	:	**80**

Scope: The scope of the subject is to make the students understand about data and statistical analysis.

Objectives: The objective include:

a. Enhancing individual capabilities through targeted training and education to improve statistics and data analysis

Unit	Contents	Hours
I	Basic Statistics	3
II	Quantitative methods, Informetrics & Sciento metrics	3
III	Use of computers for data analysis	10
IV	Internet for data analysis	5
V	Use of statistical package for data analysis (SPSS)	7
Total		**28**

Suggested readings

- Cronin, B. (2005). *The hand of science: Academic writing and its rewards*. Scarecrow Press.
- Leydesdorff, L. (2001). *The challenge of scientometrics: The development, measurement, and self-organisation of scientific communications*. Universal-Publishers.
- Rao, I. K. R. (2010). *Growth of literature and measures of scientific productivity: Scientometric models*. Ess Ess Publications.
- Smith, K. L., & Dickson, K. A. (2016). *Open access and the future of scholarly communication: policy and infrastructure* (Vol.9). Rowman &Littlefield.
- Sooryamoorthy, R. (2020). *Scientometrics for the Humanities and Social Sciences*. Routledge.
- Sugimoto, C. (2016). *Theories of informetrics and scholarly communication*. De Gruyter.
- Thelwall, M. (2009). Introduction to webometrics: Quantitative web research for the social sciences. *Synthesis lectures on information concepts, retrieval, and services*, *1*(1), 1-116.

Web-based resources

- DORA Website (n.d). https://sfdora.org/
- Web of Science Websites (n.d).

https://clarivate.com/webofsciencegrou/solutions/web-of-science/
- Lib Guides of JCU (n.d). https://libguides.jcu.edu.au/research-indicators/snip-and-sjr
- NIRF Website (n.d.). https://www.nirfindia.org/Home

PHDHL – 108 ::LIBRARY AUTOMATION

L+T+P	:	**1+1+0**	**Relative Weightage**		
Credits:	:	**2**	Internal Assessment/ Exam	:	**20**
Contact Hours	:	**28**	End-semester Examination	:	**80**

Scope: To make the students understand basic knowledge about. latest concepts of Library Automation Software

Objectives: After completion of the course, student is able :

a. To under stand the latest concepts of Library Automation Software.

b. To know about the various bibliographic formats and standards etc.

Unit	Contents	Hours
I	Library Automation	7
II	Bibliographic Formats and Standards	7
III	ILMS	7
IV	Inventory Management in Libraries	7
	Total	**28**

PHDHL – 121 :: CREDITSEMINAR

L+T+P	:	**0+1+0**	**Relative Weightage**		
Credits:	:	**1**	Internal Assessment/ Exam	:	**20**
Contact Hours	:	**14**	End-semester Examination	:	**80**

Scope: The scope of a credit seminar involves critical review and discussion of current research articles, fostering deeper understanding of scientific literature and methodologies within a specific field. It aims to enhance academic and professional development by promoting analytical thinking, communication skills, and

Objectives: The objectives of accredit seminar include:

a. Enhancingparticipants'abilitytocriticallyevaluatescientificliteratureandresearchmethodologies.
b. Facilitating knowledge exchange, discussion, and collaborative learning among peers to stay abreast of advances in their field of study or profession.

Unit	Contents	Hours
I	Power-point presentation on different research projects and research papers (Analysis skills).	2
II	Group discussions on relevant topics. **Article Presentation:** Rotating responsibility for presenting Selected articles. Guidelines for preparing and delivering effective presentations.	3
III	**Discussion and Critique:** Structured discussion on the research question, methods, results, and conclusions of each article. Critical evaluation of strengths, weaknesses, and implications of the research.	3
IV	**Written Summaries:** Individual or group-written summaries of presented articles, including critiques and reflections. **Final Presentation:** Synthesizing key insights gained from the journal club discussions. Presenting a summary of learning outcomes and contributions to the field.	3
V	**Assessment:** Participation in discussions and presentations. Quality of article critiques and written summaries. Final presentation and reflection on learning outcomes.	3
Total		14

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