

TECHNICAL WRITING, COMMUNICATION SKILLS
LIBRARY & INFORMATION SERVICES
Manual for PGS-501 Course

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**TO OUR
ARDENT STUDENTS
AND
ALL WHO ARE INTERESTED
IN
USING THE LIBRARY**

PREFACE

A manual has great teaching value for the students because the information is compiled in detail and consequently more time can be diverted for practical purpose. The manual in hand is on Library and Information Services containing elaborate information regarding making maximum use of library services. This has been framed in the light of prescribed syllabus for the Technical Writing, Communication Skills, Library and Information Services PGS 501 course for postgraduate students of Punjab Agricultural University.

Mohinder Singh Randhawa Library, the central library system of Punjab Agricultural University, has a rich collection of books, periodicals, magazines, and e-resources etc. relating to disciplines of study in Agriculture and allied subjects including Engineering; Basic sciences; Home Science and Animal Sciences etc. The available sources of information should be consulted in a planned and methodological manner so that there is minimum loss of time. It is utmost important to have a strong base at the post graduate level to derive full benefit of library services.

We hope, this manual will develop sense of confidence in post graduate students and they will be able to explore the knowledge more competitively. We are sure that efforts shall prove to be very fruitful as it will help the students to learn basic and applied aspects of library and information science.

The authors are highly thankful to Dr (Ms) Jasvinder Kaur Sangha, University Librarian for her instant guardianship and inspiration. We extend our heartiest thanks to our fellow teachers Ms. Yogita Sharma, Mr Sanjeev Kumar and Mr Amit Kumar for their words of encouragement. We also thank everyone who rendered us help in one form or the other, directly or indirectly. We would highly appreciate receiving criticism, comments or suggestions from all the quarters especially students.

Authors

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CHAPTER 1

INTRODUCTION TO LIBRARY AND ITS SERVICES

Library is devoted to organization, preservation and use of human knowledge records. This is not only a particular information system, but also a social, cultural and educational institution. Library is an institution where books are acquired for use and it is the use which is the prime motive of the library. The library comes into existence only when the three basic constituents namely Book, User and Staff come together.

ROLE OF LIBRARIES

Library is a mirror of society. Whatever is created in the society, it is preserved in the Library. Library performs following multidimensional roles:

- Culture: Preservation of records & knowledge from graphic to images and sounds
- Knowledge: Collecting world's knowledge in one place
- Organization of knowledge: Access & arrangement
- Education: Backbone of an educational institution
- Governance: Depositories of laws, regulations
- Communication & use of information: Information explosion and growth of information industry

CHALLENGES IN INFORMATION FLOW

The flow of information is not one sided, it is multi-dimensional or multi-directional. The information or the products of information are flowing in every walk of life with which the user find difficult to keep pace with the developments. Library organizes the flow of information with the help of division of work as follow:

- Acquisition
- Periodical & Serial Control
- Technical Processing
- Circulation & Reference

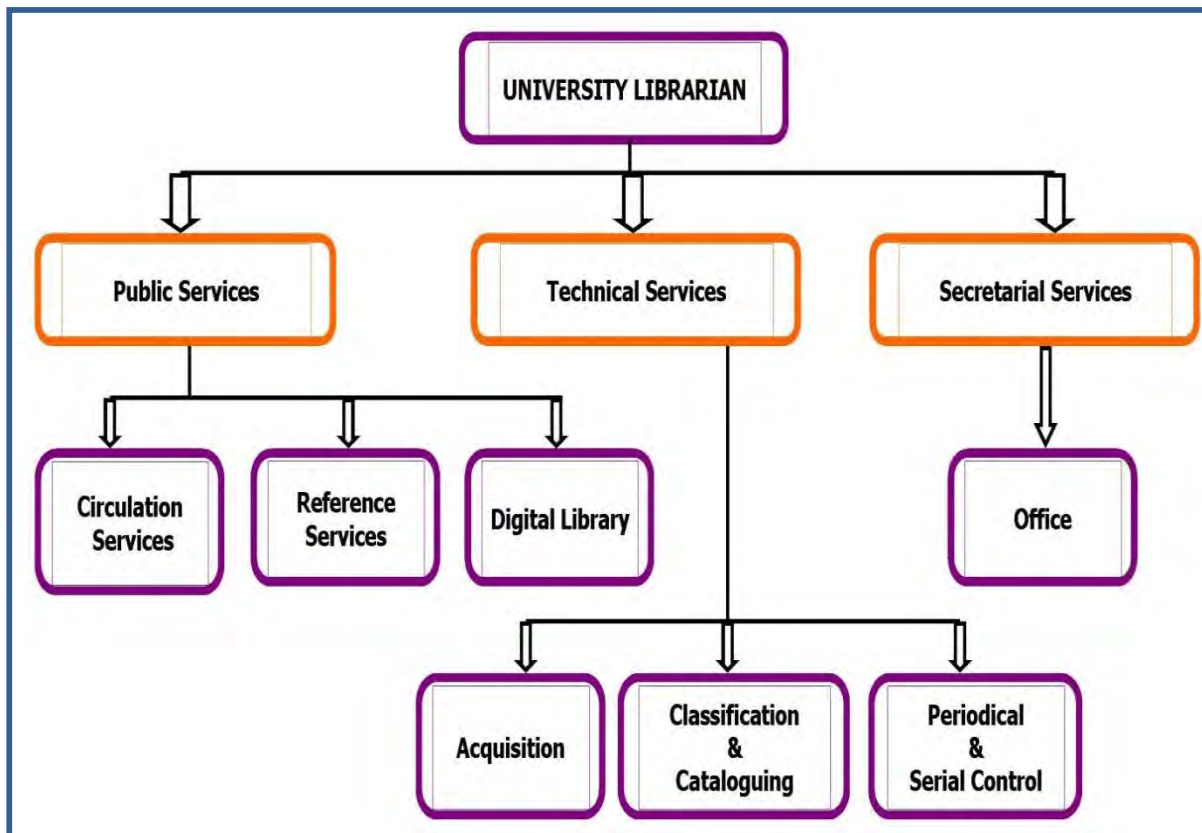
LIBRARY SERVICES

In general, library services extended to its end users are as follows:

- Staff Assistance
- User Orientation
- Reading Area
- Issue/Return of Books
- Reference Service
- Current Awareness Services
- Requests and Reservation
- Inter Library Loan
- Document Delivery Service
- Photocopy Services
- Reading Lists, Indexes and Bibliographies
- Database Services; Online and CD-ROM Databases Services

Thus, the library is instrumental in providing right information to the right user at the right time by providing above mentioned services in consonance with five fundamental laws given by Dr S. R. Ranganathan. In Punjab Agricultural University, Mohinder Singh Randhawa library is extending library and information services at central level under the supervision of University Librarian who is an officer of the university. The Deputy Librarian/ Assistant Librarian supervise the services in various sections of the library. PGS-501 (Library and Information Services part) 1+2 Cr. course offered to Ph.D./M.Sc students in PAU is also taught by the Deputy Librarian/Assistant Librarian.

The organizational chart of the library is as follows:



In PAU library, there are two types of faculty viz. teaching and non teaching. The University Librarian, Deputy Librarian and Assistant Librarian constitute the teaching faculty and other supporting staff like Junior Library Assistant and Library Attendant is from the non teaching category.

CHAPTER 2

FIVE LAWS OF LIBRARY SCIENCE

Dr S. R. Ranganathan, known as Father of Library Science, propounded five fundamental rules for library science. These have been accepted globally as basis of operating a library system. These are a frame work for the library service provider as well as for the end user of a library services. These rules have provided a scientific approach to the library science and are known as Five Laws of Library Science. These laws are as under:

1. BOOKS ARE FOR USE
2. EVERY READER HIS/HER BOOK
3. EVERY BOOK ITS READER
4. SAVE TIME OF THE READER
5. LIBRARY IS A GROWING ORGANISM

FIRST LAW: BOOKS ARE FOR USE

Books are added to the library collection as per need of the end user. Books are kept in the library for service and not for storage purpose. These are arranged in a very systematic and easily searchable way. If books are not put to their use, contents may become obsolete because of exponential growth of information. Resultantly, the redundant documents become unenviable burden for the library. Current Arrival Stand, Book Jacket Display, Announcement of New Arrivals through Electronic media, are some of the methods through which resources are publicized for their maximum use. User Education helps to educate the reader to make maximum use of the library and its resources.

SECOND LAW: EVERY READER HIS/HER BOOK

The library should work in a way that every reader may reach to his required source of information. In other words, it becomes responsibility of the management to provide funds to a library to update its resources in order to provide required book or information to the User. Further, it is duty of the users also to help the library staff by giving his feedback about his required information.

THIRD LAW: EVERY BOOK ITS USER

To match the required information with the provided sources of information, all documents should be classified so that allied documents may come together on the shelves. These should be displayed in an open access system and there should be no barrier in between user and the document. Books should be classified and catalogued in a very scientific way that these may become easily searchable in accordance with different apprehended approaches of the user.

FOURTH LAW: SAVE TIME OF THE READER

Fourth fundamental law of library science dictates that minimum time should be consumed in providing right information to the right user at the right time. Some time users are wasting their valuable time in locating their required book from a library. To save time, librarian should apply every device in arrangement of the books so that time is not wasted in searching the information. Staff should be there to restore the books at its proper place. Otherwise user may consider that the required book is either lost or it is not available in the library. All in-house operations in a library should be planned in scientific and systematic way that time of the library user is not wasted unnecessarily.

FIFTH LAW: LIBRARY IS A GROWING ORGANISM

Information is growing very fast in an exponential manner. Information is doubled in almost after every five years. Simultaneously demand of information seekers is growing day by day. Development and expansion of library system is the result of this phenomenon. Growth of resources in a library has its own impact on the library as far as human resources are concerned. For this, in house operations of a library should be automated with the help of nascent computer technology.

In nutshell, all operations of a library are based on one or the other law of library science. For this, these are considered as fundamental laws. To satisfy the implications of above referred laws, library should be modernized by using latest prevailing technologies and should also be user friendly. The library services offered should be sufficient to allow the library to be used without any feeling of frustration. All services may be advertised and the staff should encourage readers to make use of the services. Human agency in a library should guide and assist the users in a very courteous way. Library staff should not just tell the user where to go and what to do but should be ready to help the user to find related information.

CHAPTER 3

ORGANISATION OF DOCUMENTS AND USING REFERENCE SOURCES

Any bit of paper or element providing information or anything serving as a representation of a person's thinking by means of symbolic marks is called a document. The document can be written or printed paper that bears the original, official, or legal form of something that may be used to furnish decisive evidence or information. As information is being generated at exponential pace, it becomes necessary to keep the information in an organized manner for its proper use. The libraries are playing a significant role in the organization, dissemination and utilization of documented sources.

TYPES OF DOCUMENTS

The documents may be categorized into following two:

1. Conventional documents
2. Non-conventional documents

I. CONVENTIONAL DOCUMENTS: According to established practice and accepted standards and in accordance with general agreement, conventional documents can be categorized in two types:

- I. Book
- II. Periodical

BOOK is a written or printed work consisting of pages glued or sewn together along one side and bound in covers is called as book. Books can be divided into the following types:

- Book
- Pamphlet/ Leaflet
- Monograph
- Series

- Encyclopedia
- Dictionary
- Biography
- Index and Bibliography
- Gazetteer
- Map and Atlases
- Manual
- Government publication
- Dissertation/ Thesis

PERIODICAL is a magazine or newspaper, especially on a serious subject published regularly with a fixed interval between the issues or numbers. Periodical can be divided into following types:

- 1) Daily: *The Tribune*
- 2) Weekly: *Nature, India Today*
- 3) Fortnightly: *Biological Abstracts*
- 4) Monthly: *Indian Farming*
- 5) Bi-monthly: *Journal of Agricultural sciences*
- 6) Quarterly: *Experimental Agriculture*
- 7) Semi-Annual/Half Yearly: *Indian Journal of Animal Health*
- 8) Annual
 - (a) Yearbook: *Handbook of Indian Universities*
 - (b) Annuals: *Annual Review of Biochemistry*
 - (c) Directories: *Directory of Indian Periodicals*
 - (d) Almanacs:
- 9) Bi-annuals:
- 10) Bulletins: *Bulletin of Food statistics*
- 11) Calendars
- 12) Newsletters

Further the Periodical can be categorized into following forms:

- Irregular
- Regular
- Indexing Journals
- Abstracting Journals
- Trade Literature
- Proceedings and Conference Papers

II) NON-CONVENTIONAL DOCUMENTS: Non-conventional documents are those that have no publisher and because of their external characteristics. These may not be included in other categories of documents. Non-conventional documents include typescripts, forms, manuscripts, etc. These can be categorized as follows:

- Patent
- Standard
- Micro Materials - Micro films; Microfiches; Micro cards; Micro prints
- Audio & Audio-Visual documents –Tapes; Compact Discs; Pictures

FEATURES OF DOCUMENT

In general, a document can be termed as book as it is widely used source of information. The Book is in an abstract form, which gives a body or shape to the knowledge and thoughts. In addition, the book has its integral parts which have no relations with the thought contents but helps the reader in knowing the book. These integral parts are as follows:

- Physical Appearance
- Life & Soul of the Book
- Subject Matter

PHYSICAL APPEARANCE:

Shape, binding, paper and printing comes in the physical property of a book. Book should be attractive to look and also easy to consult. Its shape, length, breadth and weight should be reasonable to use it with ease. Binding, stitching and paper etc. should be of good quality for the longer life of a book. Art paper, heavy paper and rice paper should not be used in routine.

Binding is outer attire of a book. Beauty and longevity of a book depends upon its binding. A thought should be given to the binding of a book. Binding should be of card board for the library edition. Paper binding of good quality can do the job to lessen the cost of a book.

Jacket is an important part of a document as it attracts a user to consult the book. The Jacket provides brief information about the book as well as author.

For comfortable reading, it is necessary to give due importance to printing, font and style used in a book. Font should neither be of bigger size nor so small that the user may feel difficulty in using the book. Indentions, spacing, margins etc. should be reasonable. For ready reference, title on the verso page and chapter on recto page of the book should be printed. As far as illustrations are concerned, it should be ensured that only authenticated and useable illustrations, tables etc. are used in the book.

LIFE AND SOUL OF THE BOOK:

Language, style and clarity of thought content are heart and soul of a book. The book should use modern, easy and effective language. Simple, small and understandable sentences should be used in the writing. There should be consistency in the writing of a book. A good book has following three parts:

- Preliminaries
- Body
- Subsidiaries

Preliminary part provides information about a book like Half Title; Cover Photograph/Image; Title Page; Edition; Information about Printing; Number of Copies Printed; Name, Seal & Address of the Publisher; Dedication; Preface; Forward; Contents and Errata, if any.

The body of the book is where you'll find the story, description and main text which are main portions of the publication. In longer books and manuals the body is often sub-divided into chapters or sections.

Subsidiaries are for the help of its users. The information given in this part are Note; Appendices; Vocabulary; Bibliography; Index; Imprint; Fly Leaf; Maps and Plates and Jacket.

SUBJECT MATTER:

Subject matter always dominates in the book. A book is known for its contents and not by its author or title. On the basis of subject matter, Dr S. R. Ranganathan divided book in the following five categories:

1. **SEMINAL BOOK:** Book written by great personality and influential author comes in this category. The Japuji Sahib, the Geeta, the Quran, the New Testament, the Ramayana are some examples of seminal books.
2. **BOOKS CAME OUT OF RESEARCH:** Books published with the thought content came out of some research and that too with the firm belief in the same are considered in this category. For example, principles propounded by Newton, Einstein and others come in this category.
3. **EXPLANATORY BOOKS (Text books):** The textbook is a printed and bound for a course of study which contains facts and ideas of a certain subject.
4. **INFORMATION GIVING BOOKS:** Books giving information on all or many branches of knowledge are known as information giving books. This category of books can further be divided into following three groups.
 - a) Books giving knowledge (Encyclopedias, Guide books, Statistical books, Year books, Dictionaries, Atlases, Bibliographies, Indexes and Abstracts, History books, Travelogues, Sciences, Useful Arts and Social Science books).
 - b) Entertainment books (Fiction, General Poetry, Plays, Prose, Satire, Essays and other light reading books).
 - c) Thought provoking and moral boosting books (Philosophical books, Religious books, Mysticism books, outstanding poetry, plays, prose and fiction books).
5. **GENERAL BOOKS:** Books other than the above said four categories can be placed in general category of books.

CLASSIFICATION AND CATALOGUING OF DOCUMENTS

CLASSIFICATION:

The word 'Classification' is derived from the Latin word 'Classes'. It involves putting like entities together and separating unlike entities. In other words, classification is the art of arranging any group of objects so that those, which have

something in common, are placed together. The mind is always classifying the seen or heard objects. The classification of books works on the same principles.

Book classification schemes have some distinctive features. The most important of these is the short symbol they attach to every listed subject. This symbol is called the class number or the notation and it stand for the subject of the book. It is designed to be conveniently placed on all the lists of the books in the library and just as conveniently marked on the books themselves. It is always written on the spine of the book, the part that can be seen when the book is on the shelf. The notation also reveals the place of particular subject within the scheme. The most important schemes of classification which are being used globally for classification of books in different libraries are as follows:

S. No.	Scheme	Author	Origin	Year of Pub
1	Dewey Decimal Classification (DDC)	Melvil Dewey	USA	1876
2	Expansive Classification	C. A. Cutter	USA	1891
3	Universal Decimal Classification (UDC)	FID (International Federation of Documentation)	Belgium	1894
4	Library of Congress Classification (LC)	Library of Congress	USA	1901
5	Subject Classification	J. D. Brown	U.K.	1906
6	Colon Classification (CC)	S. R. Ranganathan	India	1933
7	Bibliographic Classification	H. E. Bliss	USA	1935

Among all the library classification schemes, Dewey Decimal Classification scheme is widely used as it is easy to use by the library users as well as library staff. It has excellent mnemonic features and it is based on hierarchical subject relationship. Its simple notation facilitates quick retrieval. The notation of the scheme consists solely of numbers and every book is represented by at least a three-figure number. This classification scheme first divides the knowledge contained in books into ten parts of classes. The ten main classes with their class numbers are:

- Computer science, information & general works 000
- Philosophy & psychology 100
- Religion 200
- Social sciences (including statistics and customs) 300
- Language 400
- Science (including math, physics, chemistry, biology, zoology) 500

- Technology (including medicine, agriculture, business) 600
- Arts & recreation (including architecture, photography) 700
- Literature 800
- History & geography (including biography) 900

Summaries of DDC scheme can be browsed at [www.oclc.org/dewey/ resources/ summaries/deweysummaries.pdf](http://www.oclc.org/dewey/resources/summaries/deweysummaries.pdf)

Mohinder Singh Randhawa Library of Punjab Agricultural University is also using DDC to classify the procured documents.

CATALOGUE:

The real value of a library is judged neither by its huge resources nor by its magnificent building, but by its usefulness to the readers. Therefore, it is necessary to make the resources of library available to the users enabling them to use the collection to its maximum. The First Law of Librarianship dictates that 'Books are for Use'. It will be a waste of time, energy and money, if the readers cannot get their desired materials, which are already available in the library. It becomes duty of every librarian to make the complete resources of the library available to its users. For this catalogue, which lists the books and other material in a library, comes to the rescue of librarian to provide information about available resources to its users.

Public catalogue is the most important reference tool which is known as mirror of the library collection. The catalogue is available in following forms:

- Card Catalogue
- Electronic Catalogue (*Online Public Access Catalogue*)
- Catalogue in Book Form (*for the specific collection*)

Catalogue helps the reader in finding out the required material. The user may seek his or her book under different approaches like author, title, series, joint author, publisher, subject, keyword, etc. The catalogue is a record of holdings of library and is a guide to the identification and location of each item on the shelves. Skillful use enables the user to locate library material quickly and efficiently. One of the purposes of the catalogue is to provide a key to the class numbers of books so that readers can look under the name of the subject in the catalogue and find its

class number. Another purpose of the catalogue is to provide a record of all the books in the library, so that a reader knowing the author or title of a book can find out if the library has that particular book. A third purpose is to provide a complete list of all the books that the library contains. The catalogue does serve certain other purposes in addition to providing the class number, the author and the title of each book; it gives further details about the book, such as the number of pages, details of the illustrations and the date of publication. This information proves to be valuable to readers who want to find the most useful books on a particular subject.

HOW TO USE THE CARD CATALOGUE

Skillful use of Catalogue enables a reader to locate library material quickly and efficiently. Important tips to know the card catalogue for its efficient use are given as under:

- É Catalogue cards are filed alphabetically like a dictionary. It is word-by-word arrangement.
- É Every card in the Catalogue has the call number of the book in the upper left hand corner.
- É Knowledge of bibliographic information found on a catalogue card helps to identify and locate the required material.
- É The Public Card Catalogue is divided into two parts i.e. Author/Title Part and Subject Part. In the Author/Title part, all the cards relating to author, title, joint author, editor, compiler, translator series etc. are filed alphabetically in a single sequence.
- É To find out document by a personal name, one has to see under surname of the person followed by the forename. Where the surname is not given it is filed as such.
- É To search a document by the name of a corporate body, one has to see under the official name of the corporate body except in case of Government body where the name of the territory has to be consulted followed by the organ of the Government. For example, for *Conference on Wheat Production* see

Conference on Wheat Production. If one is to consult for *Government of Punjab, Department of Agriculture* then see *Punjab, Department of Agriculture.*

É In case of searching the documents under title, the ‘*article*’ or ‘*prefix*’ occurring in the beginning of the title like ‘A’, ‘An’, ‘The’ are to be ignored. The title card is exactly like author card except that the title has been typed above the author’s name. For document with the title ‘*The Principles of Biochemistry*’ see ‘*Principles of Biochemistry*’.

É Subject part of Public Card Catalogue has only subject cards for all the publications available in the Author/Title Part Catalogue. These cards are also arranged alphabetically. The subject of the publication is written at the top of the card in capital letters. Subject is taken from Library of Congress List of Subject Headings or Sears List of Subject Headings.

DETAILS OF THE CARD CATALOGUE

The parts of the catalogue card enable us to correctly interpret the bibliographic information found on a catalogue card. Following labeled catalogue card of a typical author card explains the various parts of it:

574.192

L44P Nelson, David L

Lehninger’s principles of biochemistry by
David L. Nelson and Michael M. Cox. New York;
W. H. Freeman, 2011
27cm. 1158+41 p.

1. BIOLOGICAL CHEMISTRY 2. BIOCHEMISTRY

I. Lehninger, Albert L. II. Cox, Michael M. III. Title

ONLINE PUBLIC ACCESS CATALOGUE

An Online Public Access Catalogue, abbreviated as OPAC or simply Library Catalogue, is an electronic catalogue of reading materials held by a library or group of libraries. The system includes a word based search facility using Boolean operators that can narrow down a search to meet very specific needs. Library keeps the entire collection available at users’ fingertips. Search results can be sorted

according to the preference of search term. Search key fields are Author, Title, Subject, Class Number, ISBN/ISSN, Publisher, Accession Number, Series, Notes, Volume, Free Text Search and Boolean search. Search results can be saved and printed.

OPAC helps to know the new additions to the library. It also helps to know the status of the book whether a particular book is issued or it is available on the shelves. In case it is issued, it also gives information about the borrower of that book.

ARRANGEMENT AND ORGANISATION OF DOCUMENTS

ORGANISATION:

In order to make use of any library to its potential, it is better to know its organizational pattern. A modern library provides two types of services viz. Public Services and Technical Services. The library services which never come in direct contact of the reader are grouped in Technical Services namely Acquisition of Books and Periodicals; Classification and Cataloguing of documents. This service is responsible to record the acquired documents and to transform the documents as serviceable by accessioning, classification & cataloguing of documents. The services directly for the Users are grouped as Public Services including check-out and check-in of documents, reference service and arrangement of documents on the shelf in a systematic order.

ARRANGEMENT:

Arrangement of the documents is done in a systematic and logical manner so that the users may retrieve documents easily and quickly. Documents are mostly arranged under subject so that readers can find all related books together on the shelves. Within each subject heading, the books are arranged alphabetically under the names of the authors. Arranging books under their precise subject is not always easy and therefore most libraries use one of the several published classification schemes giving notational numbers to the subjects. This classified arrangement

under subject enables readers not only to see what the library has on any particular subject but also reveals what it has on related subjects.

Books are arranged and displayed on the shelves from left to right and from top to bottom sequence and further these are arranged numerically by Call Numbers. Books with lower number would always be left hand side and higher number would be to right hand side. Normally, the call number is written on the spine of a document for its quick identification.

CALL NUMBER:

Call number is a notational reference to any technically processed book in a library. It consist class number and book number. Class number denotes subject of the document and book number refers author as well as title of the document.

- É Call number is a group of numbers and/or letters put together to give information for the location of a book.
- É The call number is like an address telling where an item is located
- É A call number is located at the bottom of the book on the spine. It helps to find the books quickly.
- É The call number has three parts:

- i. Collection Number: It is optional and devised locally, for example

TEXT = TEXT BOOK SECTION
RF = REFERENCE SECTION
T = THESIS SECTION
CBS = COMPETITIVE BOOK SECTION
COA = COLLEGE OF AGRICULTURE

- ii. Class Number: Class Numbers can be numerical or alphabetic or alpha-numeric
- iii. Book Number: This part is a combination of letters and numbers.

An example of the call number with explanation is given as under:

TEXT 574 H19B

In the above referred number TEXT is collection mark, 574 is class number and H19B is Book Number.

Books are arranged numerically by call number like

632.1 A16C	632.1 B26L	632.1 B26R	632.1 B27A	632.1 C16G
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STANDARD IDENTIFIERS

A standard can be defined as a set of rules for ensuring quality. Standard Identifier Sources lists standard number or code systems and assigns a code to each database or publication that defines or contains the identifiers. The purpose of these source codes is to enable the type of standard numbers or codes in metadata records to be indicated by a code. Each code consists of a maximum of 25 characters, including lowercase alphabetic characters, numeric characters 0 through 9, and the hyphen (-). Standard identifiers are essential when there is a need to communicate across a supply chain, e.g. for purposes of e-commerce, aggregating information, reporting sales or usage. Standard Identifier Source Code used in library and related organizations are ISBN and ISSN.

ISBN: The ISBN (International Standard Book Number) is a unique machine-readable identification number, which is specific to the title. The ISBN contains coded information representing place of publication and publisher. Paperback/hardback can have different ISBNs.

ISSN: (International Standard Serial Number) is a unique machine-readable identification number, which is specific to the title for a periodical/journal or series.

SOURCES OF INFORMATION

Generally, library users think of a library as a place from where they may borrow books rather than a place from where they may have information. As a

result, the importance of libraries as centers of information is not fully explored. The library staff attending to the Reference Desk helps in providing the sources of information.

KINDS OF INFORMATION SOURCES

Literature serves the informational needs of various kinds of users. All this creates sources of information. Usually information sources include books, periodicals and newspapers. However, number and forms of sources are continuously increasing. Even unpublished sources are becoming increasingly important to scholars. As a whole the following kinds of sources of information can be identified:

1. DOCUMENTARY SOURCES

- a. Primary (Primary sources are the first to appear)
- b. Secondary (Secondary sources come out next)
- c. Tertiary (Tertiary sources are the last to appear)

2. NON DOCUMENTARY SOURCES

- a. Formal
- b. Informal

I. DOCUMENTARY SOURCES

PRIMARY SOURCES OF INFORMATION: Primary sources of information contain first hand information. Primary sources of information are the result of original contributions and research which may prove to be references for other potential users. These sources help the researchers to:

- É Keep updated and well informed of the new developments in the fields of knowledge. Many scientists may be doing the same type of research on the same topic in other parts of the world. Primary sources are the sources of information from which a scientist advances his research.
- É Avoid duplication in research
- É Help others in finding gaps and flaws for further research work and thus generates more information

Following are the forms of primary sources of information:

Primary sources are published in variety of forms. Normally, these take the form of a journal article, monograph, report, patent, standard and dissertation etc. Some of these may remain unpublished.

PERIODICALS: A periodical is the main source of communication for the exchange of scientific information. Periodicals constitute the bulk of the primary sources. An article in a journal would be considered as primary source if it contains information representing original thinking or a report on a new discovery of some thing. However, an article in the same journals would not be considered a primary source of information if it contain summary of findings or reports produced by other persons. Periodical usually reports the result of recent researches more quickly than books. Periodicals include journals, bulletins, transactions, proceedings or similar works which appear regularly and continuously in numbered sequence. Some of the examples are:

É Journal of Research, 1962- Ludhiana, PAU, quarterly

É Nature, 1899- London, McMillan, weekly

É Physics of Fluids, 1958- N.Y. Am. Inst. Physics, monthly

RESEARCH MONOGRAPH: Research monographs are reports regarding research & development projects. These are primitive form of literature. Often these take the form of progress reports, which serve temporary reference. Research reports play a very important role in transmission of the scientific knowledge to the end users. The communication work is done very rapidly and effectively through these publications. This type of literature is often called unpublished or semi published literature because normally these are not available through regular book trade channels but are made available to interested user from the parent organization. Examples of this are elucidated as under:

É Scientific and Technical Aerospace Report (NASA)

É Govt. Reports, Announcements and Indexes

PATENTS: Patent is a government grant of exclusive privilege which allows making use or selling of a new invention for a term of years. A patent takes the form of an official document having the seal of government attached to it, which confers an exclusive right over a period of specified time. Patents are regarded as a part of the primary source of information because it is allotted to an invention. In

each country, there is one agency to register patents which are serially numbered. In India, Indian Patent Office is responsible for granting patents. Some of examples of information sources for patents are:

- É Chemical Abstracts – Patent Index Weekly
- É Indian Science Abstracts (INSDOC) Monthly

STANDARDS: A standard is a pamphlet covering definitions, methods, properties, measurements etc. It may be illustrated with tables and diagrams. The importance of standards can be gauged from the fact that progress of modern society would be difficult without standards. This leads to simplifications of production and distribution of products. These ensure reliability for the consumer. As a result of standardization, those items, which do not follow prescribed standards, get eliminated from the market. In India, Indian Standards Institution now known as Bureau of Indian Standards is a major organization issuing standards. Other examples are:

- Indian Standard Institution (ISI) now as Bureau of Indian Standards (BIS)
- International Standards Organization (ISO)
- British Standards Institution (BIS)

TRADE LITERATURE: Trade literature is a unique primary source of information for getting information regarding particular products and their development. The major objective of such literature is to advertise the product. Usually, the manufacturers and distributors publish these documents to provide accurate technical information about products and materials that are offered for sale. Trade literature includes various types of product catalogues, manuals, guides, house journals, compilation of trade data etc. It has been observed that trade literature does not provide updated information as this involves regular and tedious checking of files because it is time consuming.

THESES/DISERTATIONS: Universities normally require a student working towards a Doctorate/Postgraduate degree to write dissertation/thesis under the supervision of a Guide. The student is expected to show evidence of original research and is supposed to form an important category of documents for researchers in the concerned field of research. Thesis may not have commercial application still it contain valuable information regarding an idea, a process, a technique etc. Usually, these research documents remain unpublished.

UNPUBLISHED SOURCES: There are certain primary sources of information, which remain unpublished. Very often, these may be consulted for historical interests. Some examples are given as under:

- Laboratory Notebooks
- Diaries (a diary is a personal day-to-day record of experiences of the diarist)
- Letters to or from a particular scientist or researcher
- Memoranda
- Company files
- Internal Research Reports
- State Papers (Govt. Office Correspondence)
- Inscriptions on tomb-stones
- Portraits
- Oral History (recorded interview and speeches)
- Coins

SECONDARY SOURCES OF INFORMATION: Normally, the primary sources are unorganized, which are sometimes difficult to use. Secondary sources are published to avoid duplication of research and supply information on new developments and current trends etc. Secondary sources of information are helpful in the usage of primary sources. Primary sources are the first to appear, these are followed by secondary sources. The secondary sources are not original rather based on primary sources of information. The secondary sources of information contain digested and condensed information and open the door for the use of primary sources by serving as bibliographical key to it. As a result of information explosion, it is difficult to get information from the primary sources directly, so consulting secondary sources at the first instance becomes necessity and compulsion. Following are the forms of secondary sources of information:

INDEXES: Index is a systematic alphabetical list of names, topics and key terms etc. which indicate location of the referred term in the main part of the work. Index may be separately compiled or published as part of the work. A well-compiled index adds to usefulness of a work. Regarding the importance of index, Dr S. R. Ranganathan has rightly said that to get into a book without an index is like getting into a forest without a trained guide.

BIBLIOGRAPHY: Bibliography is a list of books of a particular author, publisher, and country or of those dealing with any particular theme of literature on a

particular subject. It is an organized list of information sources relating to a given subject or person. It is usually arranged alphabetically, chronologically or topic wise. It may be comprehensive or selective. The basic aim of a bibliography is to assist the users in locating or identifying a book or any other information of his/her interest. In other words, a bibliography is to verify the individual titles on a subject or to locate material on a subject and to obtain information on the complete writings by an individual author etc. It also helps in retrospective searching of available literature.

INDEXING PERIODICALS: An indexing periodical is a regularly issued compilation of titles of articles that appear in a journal. Generally, titles of new books, pamphlets etc are also included. Some examples are given as under:

- É Applied Science & Technology Index
- É Indian Science Index
- É Engineering Index

ABSTRACTING PERIODICAL: The best known format for abstracting services is periodical. An abstracting periodical is a regularly issued compilation of concise summary of articles that appear in current primary source journal. An abstracting periodical serves as an index which is a tool for retrieval of information on a specific subject. However indexing periodicals are easier to appear than abstracting periodicals.

Examples of abstracting journals are as under:

- É Biological Abstracts
- É Chemical Abstracts
- É Indian Science Abstracts
- É Theses Abstracts
- É Dissertation Abstracts International

REVIEWS: A review is an evaluation of a publication, product, service, or company. A review can be described as progress of a particular field of study, which is prepared by an expert in the subject. A review provides background information and serves as key to literature. Dr Ranganathan called it as Narrative Bibliography. It may appear, as a collection of papers on regular basis may be

annual, quarterly or monthly basis. It may also appear in the form of an article in a periodical.

In the scientific literature, review articles are a category of scientific paper which provides a synthesis of research on a topic. A compilation of these reviews forms the core content of a secondary scientific journal like Annual Reviews, the Nature Reviews, etc.

TREATISES: A treatise is a comprehensive compilation or summary of information on a subject. A treatise on a subject provides basic information for carrying out advanced research. It also provides facts along with discussions. This become out of date within a short period of time as it relates to only broader field of research like organic chemistry, heat, light etc.

MONOGRAPHS: Monograph is published as a part of series. It is a short treatise on a specific subject. Single topic is the scope of monograph.

TEXT BOOKS: Textbook is meant for students of a specific subject. Its main purpose is to provide basic knowledge on the subject in an easy language. Textbook is not to provide information but to enable one to develop understanding of the subject. Textbook is revised as and when there is a change in methodology and trends in teaching.

REFERENCE BOOKS: A reference book is a book that contains authoritative information and it is used for reference. A reference book is not used for constant reading, because from the beginning to the end the author often emphasize on item-wise facts only. The common characteristics of most of the reference books are that they anticipate a particular need and approach to information. The reference book is a form of secondary source of information which includes encyclopedias, dictionaries, tables etc. Some of these are discussed here as under:

DICTIONARY: A Dictionary provides information about the meaning, pronunciation, and spelling of words. Unabridged dictionary attempt to be complete by including all currently used words in a language. Abridged dictionary omit words

that do not regularly appear in books, magazines, and newspapers. Specialized dictionary provide detailed information about the word that apply to a particular subject. This includes technical words that are rarely used outside of the subject.

THESAURUS: A Thesaurus contains synonyms for commonly used words. A synonym is a word that has the same meaning or nearly the same meaning of the word being checked. For example, "simple" is a synonym for "easy." A thesaurus contains many more synonyms for a word than does a dictionary. A thesaurus can help you precisely express your ideas when writing.

ENCYCLOPEDIA: An Encyclopedia contains alphabetically arranged articles on a variety of subjects. The articles are written by the subject experts. In addition to articles, encyclopedias may include illustrations and diagrams, definitions of some words, and references to additional information. A general encyclopedia includes overview articles on a wide range of topics. A subject encyclopedia contains longer and more detailed articles on specific topics, events, or fields of study.

ALMANAC: An Almanac is an annual single-volume reference source that contains useful facts about a wide range of topics. Almanac gives current and updated information about countries of the world, government, historical events, and many other topics which is revised every year.

ATLAS: An Atlas is a collection of maps that show the political and physical features of countries throughout the world. A political map shows government boundaries. A physical map shows the features of the earth's surface such as mountains, deserts, and bodies of water. There are also specialized atlases for weather across the world, oceans of the world, and even the anatomy of the human body.

HANDBOOK: A Handbook is a compilation of miscellaneous information in a compact and handy form. It contains data, procedures, principles, etc. providing tables, graphs, diagram and illustrations etc. Scientists and technologists use handbooks in their laboratories/fields as a table book.

MANUAL: A Manual is a book of instructions, which instructs how to accomplish a job by providing specific and clear directions.

TERTIARY SOURCES OF INFORMATION: Tertiary sources of information contain information distilled and collected from primary and secondary source of information. The primary function of tertiary sources of information is to help the searcher of information in the use of primary and secondary sources of information. Most of these sources do not contain subject knowledge. Due to exponential increase in literature, tertiary sources are becoming increasingly important. Out of various kinds of sources, tertiary sources are the last to appear. Some of the forms of tertiary sources of information are detailed as under:

BIBLIOGRAPHY OF BIBLIOGRAPHIES: A bibliography of bibliographies lists bibliographies, which direct readers to useful bibliographies through subject, name of an individual, place, institution etc. The bibliographies referred to may be in the form of a separately published book or part of the book or part of a periodical article or some other type of document. Bibliography of bibliophiles is highly selective in nature. Some examples of these reference sources are elucidated as under:

É INDEX BIBLIOGRAPHICUS (Federation Internationale de Documentation - F.I.D.)

É BIBLIOGRAPHIC INDEX- Cumulative Bibliography of Bibliographies
(Wilson, N.Y.)

DIRECTORIES: Directory is a book containing one or more alphabetical lists of the persons of any locality, particular profession, trade or association with their addresses and professions. Information given in directories is usually not available in any other reference tool. It may list information in a way, which best serves the requirements of its users so as to enable them to get the information readily available. In these reference sources, the word directory may or may not appear in the title. For reference, examples are as under:

É World of Learning (Europa)

É World List of Scientific Periodicals (Buttersworth)

É Ulrich's International Periodicals Directory (Bowker)

GUIDE TO LITERATURE: A guide to literature assists its user to have information about literature available on a particular subject. It helps to evaluate and introduce literature. It lays emphasis on literature rather than the contents of a specific subject. It mainly covers secondary and tertiary sources. Examples are:

É Reader's Guide to Social Science (*Free Press*)

É Guide to Indian Periodicals Literature (*Indian Documentation Centre*)

II. NON-DOCUMENTARY SOURCES

Non-documentary sources of information form a substantial part of communication especially in science and technology. User's studies have underlined importance of such sources of information. These sources provide information which is not available elsewhere. Two kinds of Non Documentary sources are briefed as under:

- a) Formal Sources of information include documents published by Research Organizations, Societies, Industries, Government Departments, Universities, and Consultants etc.
- b) Informal Sources of information include conversation with colleagues, visitors, attendance at professional meetings, etc. Very often the conversation or discussion would point out primary or secondary documentary sources. Informal sources are live sources, which are extremely important in the process of communication. Very often if a scientist working on an experiment needs some data, he would turn to his colleagues working in the same laboratory rather than consult a printed page. Information sources tend to be more convenient source because it is certainly easier to have a dialogue with an expert than to use a bibliography or index or catalogue or even consulting a reference librarian. The documents essentially are monologues but a dialogue with a human being plays significant role in clarifying ones requirement for information.

TRACING INFORMATION FROM REFERENCE SOURCES

Reference sources such as books or periodicals are available in the library to help its users to find his/her required information. Documents in book form such as dictionaries, encyclopedias, handbooks, and directories are used to have access to the required information. In order to retrieve information efficiently, it is essential to know about reference sources and their use.

TYPES OF REFERENCE BOOKS:

- É General Reference Books: This type of sources provides information on the major aspects of any topic. e.g. World Book Encyclopedia, Encyclopedia Britannica.
- É Subject Specific Reference Books: This type of sources provides general or in-depth information on a particular topic. e.g. Encyclopedia of Bioethics, The Cambridge Dictionary of Philosophy.

Organization of Reference Sources: Reference sources are generally organized in one of the following ways:

- É Alphabetical arrangement
- É Chronological arrangement

For retrieving relevant information, some reference tools and their coverage are discussed below:

- É INDEX: An index points the way to other materials by giving a citation to periodical articles, books, or other information sources.
- É ENCYCLOPEDIA: It is a compendium, holding a summary of information on all branches of knowledge or a particular subject.
- É DICTIONARY: Dictionaries define words and terms; confirm spelling, definition, and pronunciation; are used to find out how words are used; help to locate synonyms and antonyms, and to trace word origins. Subject dictionaries define specialized or technical language in a given field. Special dictionaries treat special categories of words such as slang or synonyms. Language dictionaries give equivalent words and word usage in other languages which are known as thesaurus.

- É BIOGRAPHICAL SOURCES: These sources of information gives detailed description giving education, work, relationships, and death of eminent personalities.
- É ATLAS: An atlas contains maps, charts, or illustrations of a geographical area or subject.
- É GAZETTEER: A gazetteer is a geographical dictionary or directory providing information about continent, country or region. It contains information concerning the geographical makeup, social statistics and physical features such as mountains, waterways or roads of the referred region or continent.
- É GUIDEBOOK: The guidebook source of information provides detailed descriptions of places. It contains special points of interest for travelers.
- É DIRECTORY: The directory lists names, addresses, and phone numbers of people, companies, organizations, and institutions.
- É MANUAL: A Manual is a set of instructions in a book or booklet form, which provides detailed guidance to do the job, may be mechanical or operational.

CHAPTER 4

ALERTING SERVICES

The services which are provided to keep the users of the library aware of the upcoming events and information resources are known as alerting services.

ADVANTAGES OF ALERTING SERVICES:

Alerting services are useful to the library users as it:

- É Keeps the users informed
- É Provides access to needed documents
- É Supports academic, professional and managerial tasks
- É Automates the process of searching for retrieving of relevant information
- É Provides information in a preferred format
- É Saves the time

TYPES OF ALERTING SERVICE:

Alerting Services can be grouped in following two categories:

- a) Current Awareness Service (CAS)
- b) Selective Dissemination of Information (SDI)

CURRENT AWARENESS SERVICE (CAS)

Current Awareness Service keeps the users updated with progress within a field of basic interest as well as in the related subjects. This is one of the most important functions of any information centre. Dr S. R. Ranganathan defines CAS as endeavours to keep the clientele informed promptly of all the nascent thought created in their field of work and related fields.

METHODS:

CAS involves review of publications like books, periodicals, reports, patents, announcements of different kinds, etc. immediately upon receipt; selecting

information pertinent to the program of the organization served and note individual items to be brought to the attention, by one mean or another. After selection of pertinent information, a systematic record is made of significant references and finally, the information is communicated to the users.

The following methods are specified for providing current awareness services:

- Distribution of lists of recent publications or acquisitions through current awareness bulletin;
- Selective Dissemination of Information;
- Selective Dissemination of Documents;
- Routing of Periodicals;
- Display;
- View Data; and
- Telephone Calls, Emails and Visits.

In some libraries, following periodic bulletins are issued:

É CURRENT ADDITIONS - Information about the books added to the library collection in the previous month is provided to the users.

É CURRENT CONTENTS - Information about the content pages of the journals recently received in the library is made known to the library users through bulletins or e-mails. This service may be published weekly, fortnightly or monthly.

SELECTIVE DISSEMINATION OF INFORMATION (SDI)

Selective Dissemination of Information (SDI) is advanced kind of service directed towards individuals. This is highly personalized service. The basic concept of SDI consists in matching of the information with the interest of the clientele. SDI was a concept first developed and tested by Hans Peter Luhn of IBM in the 1950's for personalized information service to serve the scientists and engineers as new channel of communication.

OBJECTIVES OF SDI SERVICE:

- All relevant information on subjects of interest to the users which have been received in the information centre must be brought to the notice of the users.
- All relevant information published elsewhere in the world should be located and procured, if possible, through various information sources and agencies.
- No irrelevant document should be notified to the users.
- Expeditious service/ time saving. The users informed of the developments in their respective fields of interest without wasting their time in searching non-relevant and unwanted documents.

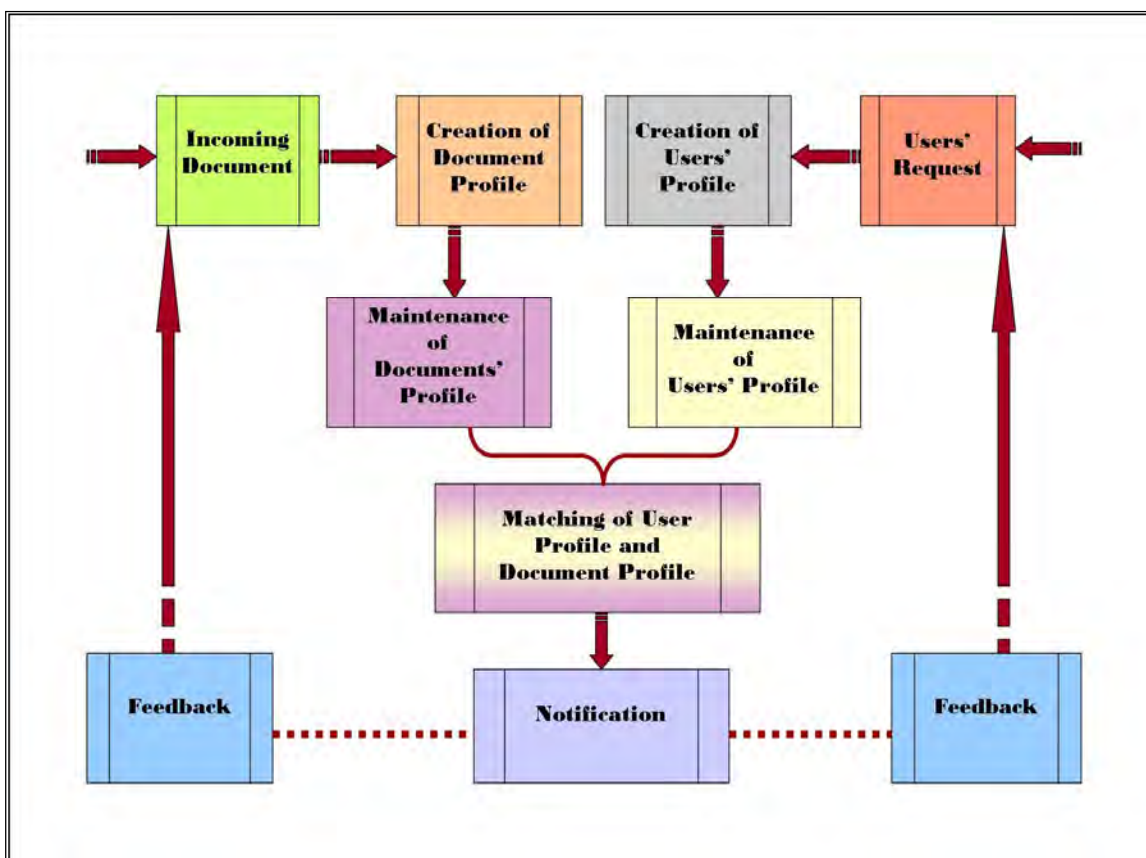
PRINCIPLE OF SDI:

The emphasis in SDI is that the interest of each user is studied and represented in a way which could be easily compared with the contents of the incoming recent documents; for each user a description of his interests called a profile is prepared and recorded in machine readable form. Record for each new document received is prepared and entered into machine readable form. At regular intervals the new documents entered during the period are compared with profiles. When a record matches a profile, it is recorded as a hit for that profile; details of the hits corresponding to each profile are then printed on the computer and sent to the concerned client.

SDI SERVICE WORK FLOW:

- Creation of user profile Documents are scanned to assign the keywords
- Creation of document profile
- Matching of user profile and document profile
- To identify hit and miss
- Select all the hits as a bibliographical list
- Notification
- Feed back

The illustration, as follows, explains the communication model in an SDI serviced operation:



Selective Dissemination of Information is a very dynamic system for catering information services to the users.

In PAU Library, CAS is provided by displaying the latest books and book jackets in the library. Moreover, there is a special icon in OPAC through which by clicking the icon, a user can have access to the information on new arrivals in Mohinder Singh Randhawa Library. SDI service is facilitated through CeRA and J-gate, where users get regular alerts through email by creating their own User Profile.

CHAPTER 5

LIBRARY AND RESEARCH

Research is a never ending process; it is a discovering of undiscovered. Research comprises creative work undertaken on a systematic basis in order to make additions to the existing knowledge; including knowledge of man, culture and society, and again using this knowledge to devise new applications. The prerequisite of a successful research is to identify a research problem and to formulate a strategy i.e., a plan of action to conduct research systematically. A plan of action helps in staying focused, reduce frustration, enhance the quality of the research and save the time of the researcher. Research process can be given in steps as under:

- É Identifying the research problem
- É Specifying the purpose of research
- É Formulating hypothesis
- É Reviewing the existing literature
- É Collection of data
- É Analysis and interpretation of data to prove the hypothesis
- É Conclusion , findings and suggesting further studies

Libraries play a significant role in providing the updated information to the researcher to be familiar with the ideas, major concepts and basic vocabulary in the area of his/her research.

LIBRARY SURVEY

Libraries role in conducting a successful research cannot be ignored as the researcher needs library resources to gather in-depth knowledge and information related to the topic of research. After conducting a successful research, findings and recommendations of one research problem give birth to more research problems. Libraries, the reservoir of knowledge collects, preserve, and disseminate the information to the researcher about the latest researches conducted to form the basis for further researches. This information is available in different books, journals, unpublished documents in the libraries as given below:

PRIMARY SOURCES include eyewitness accounts published in newspapers, thoughts and feelings recorded in diaries and letters, documented interviews or oral histories, data collected in the census, journals, research monographs, patents, standards, and theses.

SECONDARY SOURCES offer commentary written about events "after the fact." Most published information like index, bibliography, indexing periodicals, abstracting periodicals, reviews, monographs, treatises, textbooks, dictionaries, encyclopedias, almanac, handbook, etc. falls into the secondary source category. The most important secondary sources relevant to the researchers are:

- Encyclopedias: Encyclopedias often identify narrower areas within the broad subject which are helpful for researcher in understanding the subject in a better way. Many encyclopedia article entries also provide a list of references that helps in locating scholarly information sources related to the area of interest. General encyclopedia sometimes doesn't provide enough background information. Subject encyclopedias like the *McGraw-Hill Encyclopedia of Science and Technology* or *International Encyclopedia of the Social Sciences* prove to be more helpful.
- Dictionaries help in knowing about unfamiliar words and specialized terminology of new subject in specific disciplines. For example, *Dictionary of Zoology*, *Dictionary of Physics*, *Dictionary of Sociology*, *The Social Work Dictionary*, *A Feminist Dictionary*, and *A Dictionary of Psychology*.

TERTIARY SOURCES of information may complement the information provided in primary and secondary sources, and these includes biographical sources, book reviews, statistics, geographical sources, essays, government publications and video documentaries.

TIPS FOR FINDING SOURCES:

- É In libraries, the books are arrangement in a classified manner and books on a particular subject are placed together. Therefore, it is advisable to look at the book shelves nearby while consulting the library resources. Selective

browsing from the library shelves often reveals the material which is missed by a systematic search.

- É Consider useful footnotes, references, subject headings and keywords mentioned in different sources while searching the information in a library. A good bibliography compiled by the author suggests additional sources/documents published on the same area of interest and these sources sometimes prove to be of great relevance.
- É Scholars often become experts in a field and continue publishing on a particular topic and topics of close relevance. Other literature on the required subject written by the same may also be searched.
- É It is desirable to record complete bibliographic details of the document consulted in the library i.e. author, title, publisher, place of publication, and year while searching the information sources, as these are required to provide reference, footnotes as well as to compile a bibliography. Call number may also be noted for searching the same book in future.

BIBLIOGRAPHY

Bibliography is systematic description of books about their authorship, printing, publication, edition, etc. It is very difficult to lay down any precise definition of bibliography. According to Dr S. R. Ranganathan, the bibliography is a list of documents listed together according to some permanent principle for some purpose. The purpose is to bring to the attention of the reader an exhaustive or selective list of documents relevant to his pursuit of study or enquiry. Bibliography is very important part of a research work and it appears at the end of the thesis, book, or research paper. The main purpose of compiling a bibliography is to give detailed information of the documents including list of books, journals, magazines, websites, and other sources cited and consulted during research.

PREPARATION OF BIBLIOGRAPHY

Compiling a good bibliography is an art. For maintaining uniformity, a specific format is required while giving information of the documents consulted. Different styles & formats namely The Modern Language Association (MLA),

American Sociological Association (ASA), and American Psychological Association (APA) etc. are followed to compile a bibliography or to cite references. These styles are commonly used as their grammatical formations are widely acceptable and easily interpreted by the users. Many organizations, institutions formulate their own format to compile references or bibliographies. The guidelines issued by Punjab Agricultural University, Ludhiana for compiling a bibliography have been published on its webpage under Downloads in Synopsis & Thesis Guidelines. These are reproduced for ready reference as under:

AUTHOR REFERENCES:

SINGLE AUTHOR, ARRANGE REFERENCES YEAR WISE:

Dawson K A (1987) Mode of action of yeast culture in the rumen. *J Anim Sci* **65**:101-12.

Dawson K A (1990) Designing the yeast culture of tomorrow. *Anim Prod* **50**:483-89.

TWO AUTHORS, when first author is same, arrange references alphabetically according to second author. Examples:

Dawson K A and Hopkins D M (1991) Differential effect of live yeast on cellulolytic activities of anaerobic ruminal bacteria. *Agron J* **69**:531-34.

Dawson K A, Hopkins D M and Boling J A (1989) Effect of yeast culture on rumen metabolism. *J Sci Food Agri* **52**:400-12.

TWO OR MORE SAME AUTHORS are to be arranged year wise.

Dawson K A, Hopkins D M and Newman K E (1990) Starch conversion by *Saccharomyces cerevisiae*. *J Sci food Agric* **53**:587-94

Dawson K A, Hopkins D M and Newman K e (1991) Effect of yeast culture supplement on the growth of cellulolytic bacteria. *J Anim Sci* **69**: 1140-49.

Dawson K A and Newman K E (1987) Growth and activities of rumen bacteria as influenced by the diet. *J Anim Sci* **65**:240-45.

TWO OR MORE SAME AUTHOR(S) IN THE SAME YEAR:

Stern R A and Gazit S (1996a) Lychee pollination by honey bee. *J Amer Soc Hort Sci* **121**:152-57.

Stern R A and Gazit S (1996b) Anatomical structure of two day old lichi ovules in relation to fruit set and yield. *J Hort Sci* **71**:661-71.

ABSTRACTS:

El Hassen S M, Newbold C J and Wallace R J (1993) The effect of yeast culture on rumen fermentation. *Anim Prod* **56**:463 (Abstr).

SPECIAL SUPPLEMENTS OF JOURNALS:

Miller J E, Famandez J M, Barras S r and Hoover D T (1997) Comparison of gastromestive nematode infection in four breeds of sheep. *J Anim Sci* **75** (supple 1).

SECONDARY SOURCE:

Bashir R, Norman R J, Bacon R K and Wells B R (1997) Accumulation and redistribution of fertilizer nitrogen-15 in soft red winter wheat. *Soil Sci Soc Amer J* **61**:1387-92 (Original not seen. Abstr in Biological Abstracts, **104** :Entry No. 166249, 1997).

Brown W and Nicolai T (1993) Dynamic properties of polymer solutions. Pp. 272-319. In: Brown W (ed) *Dynamic Light Scattering. The Methods and some Applications*. Clarendon Press, Oxford (Original not seen. Cited by Bellow-Perez L A, Colnna P, Roger P and Parades-Lopez O, 1998. *Cereal Chem* **75**:395-402).

ANONYMOUS PUBLICATIONS:

Anonymous (1998) *Package of Practices for Rabi Crops*. Pp 20-25. Punjab Agricultural University, Ludhiana.

TRANSLATED TITLES (IN PARENTHESIS):

Tharaldsen J (1982) (Gastro-intestinal parasites in swine in some relatively large breeding herds). *Nord Vet Ned* **24**:427-32.

BOOKS:

Elliot W H and Elliot D C (1997) *Biochemistry and Molecular Biolog*. Pp. 274-79. Oxford University Press Inc, New York.

BOOKS IN SERIES:

White B A (ed) (1997) *Methods in Molecular Biology*. Vol 67, Pp 63-69. Humana Press, New Jersey.

EDITED BOOKS:

Amsterdam D, Cunningham R K and Van Oss C J (ed) (1996). *Immunological and Molecular Diagnosis of Infections Diseases*. pp 91-101. Marcel Dekker Inc, New York.

CHAPTER IN AN EDITED BOOK:

Close W H (1998) the role of trace mineral proteiates in pig nutrition. In: Lyons T P and Jacques K A (ed) *Biotechnology in the Feed Industry*. Pp 469-84. Nottingham University Press, Loughborough, Leies, U.K.

BOOKS WITH TRANSLATOR(S) NAME:

Klinchin A K (1957) *Mathematical Foundations of Information Theory*. Silverman R A and Friedman M D (tr). Pp 100-20. Dover, New York.

SYMPOSIUM/CONFERENCE PROCEEDINGS:

Domon E (1996) Polymorphisms within waxy gene in indigenous barley cultivars revealed by the polymerase chain reaction. *Proc 7th Barley Genetics Symp.* pp 60-61. University of Saskatchewan, Saskatoon.

Khush G S (1997) Challenges and Opportunities for sustainable agriculture. I: Bajwa M S, Dhillon J S, Dilawari V K and Chahal S S (ed) *Proc 3rd Agricultural Science Congr.* Vol 1, pp 1-9, Punjab Agricultural University, Ludhiana, India.

TECHNICAL BULLETINS AND THESES:

Sen K C and Ray S N (1987) *Nutritive Value of Indian Cattle Feeds and Feeding of Animals: Tech Bull 25*, 6th edn. Pp 1-133. Indian Council of Agricultural Research, New Delhi.

Sharma N (1997) *Effect of exogenous growth regulators on carbohydrate metabolism in potato*. Ph.D. dissertatioin. Punjab Agricultural University, Ludhiana, India

Bhardwaj S (1998) *Biochemical Constraints in synthesis and accumulation of sucrose in sugarcane under subtropical conditions*. M.Sc. thesis, Punjab Agricultural University, Ludhiana, India

PATENTS:

Hagner M B and Wondt K L (1977) Methods of sorting seeds. U.K. Patent, 1470133

CHAPTER 6

LIBRARY USE

In the present era of information technology, timely, up-to-date, and precise information to a wide range of users is expected from the libraries. To satisfy the varied needs, users require availability and accessibility to a variety of information sources in different formats. Formats can be text, audio-video like digital, sound, graphics, images, multimedia or hypertext etc. To cope with the new technology, library professionals and the researchers are developing skills to retrieve electronic resources available on Internet. Brief descriptions of various useful electronic resources are detailed as below:

- **INDEXES:** An index is a reference source which provides bibliographic information about journal articles, as well as other types of materials such as conference papers, book chapters, dissertations, research studies, etc. Indexes are available in print as well as in electronic form. Online index provides wider search relating to subject, author, title, keywords or phrases used throughout the bibliographic information. Index is also referred as "Article Databases".
- **ELECTRONIC BOOKS:** E-book is the electronic version of a book covering full contents including text, tables, diagrams, illustrations, etc. Users can view online/offline full text of e-books in HTML or PDF format.
- **ELECTRONIC JOURNALS:** Electronic journals are scholarly journals or intellectual magazines that can be accessed via electronic transmission. These are also known as e-journals. E journal is published on the Web as a specialized form of electronic document.
- **LIBRARY CATALOGS:** Catalogue of library resources is made available to its users through WAN or LAN. Most libraries now provide access to their catalogs from their web pages. This type of catalogue is known as Web OPAC.
- **REFERENCE SOURCES:** Many dictionaries, almanacs, encyclopedias, and other reference sources are now available online in full-text. These

resources are provided through the Library's website or the Online Public Access Catalog (OPAC) to the users.

- **STATISTICAL SOURCES:** Library provides access to various databases to retrieve social, economic, financial and agricultural statistical information.

ONLINE PUBLIC ACCESS CATALOGUE (OPAC)

A catalogue is a list of library resources. This can be in card form or in electronic form. The patrons in the library can search the bibliographic database and find specific information from the catalogue. In OPAC, the search facility acquaints the user about the availability of each document in the library as well as the status of number of copies of the searched title. OPAC facilitates searched under title; author; subject; classified; publisher and place of publication of the document from the library resources.

To narrow down the search, Boolean operators have been applied to OPAC. The Boolean searches can be made on words taken from the bibliographic fields. The use of the logical connectors 'OR', 'AND' and 'AND NOT' is allowed. To have access to LibSys Public Access Catalogue (LSOPAC) click the following link:

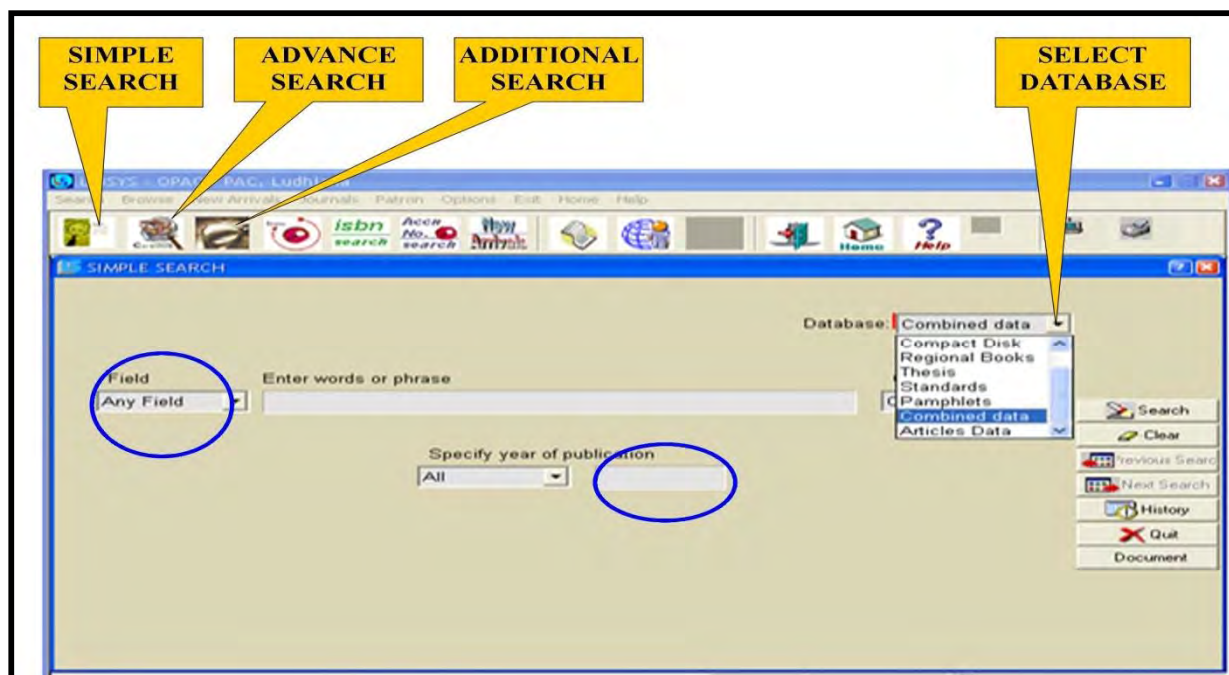


Libsys.lnk

Following options have been provided in menu bar of OPAC:

- Searches
- Browse
- New Arrivals
- Journals
- Pattern

OPAC provides three kinds of searches namely simple search; advance search and additional search, as depicted in the following image:



SIMPLE SEARCH: The user can make a search on any field i.e. title, author or subject using the option of simple search. In this, the fields to be entered are as under:

- DATABASE: Select from the combo box the database on which the search is to be made.
- FIELD: Select from the combo box the field on which the search is to be made.
- ENTER WORD(S) OR PHRASE: Give the word(s) or phrase on the basis of which the search is to be made.
- CONNECTOR: Select from the combo box the connector required between the search words.
- SPECIFY YEAR(S) OF PUBLICATION: Give the time frame within which a search has to be made.
- Click SEARCH and the results are displayed.

ADVANCE SEARCH: This function helps in making an advance search. The data fields are:

- Database: Select from the combo box the database on which the search is to be made.
- Field: Select from the combo box the field on which the search is to be made.
- Enter word(s) or phrase: Give the word(s) or phrase on the basis of which the search is to be made.
- Connector: Select from the combo box the connector required between the search words.
- Specify Year(s) of Publication: Give the time frame within which a search has to be made.
- Click Search and the results are displayed.

LIBSYS - OPAC - PAC, Ludhiana

Search Browse New Arrivals Journals Patron Options Exit Home Help

ADVANCE SEARCH

Database: Combined dat

Field: Any Field

Enter words or phrase

Connector: Or

Specify years of publication: All

Search Clear Previous Search Next Search History Quit Document

LIBSYS - OPAC - PAC, Ludhiana

Search Browse New Arrivals Journals Patron Options Exit Home Help

ADVANCE SEARCH

Search Hits: 113

Database: Combined dat

Title	Author	Class
Orchard soil management : by E.F. Palmer and Ven ...	PALMER, E.F.	634 P140
Soil productivity aspects of agroforestry - [1984]	NAIR, P.K.R.	634.999 N15S
Soil processes and water quality : ed. by Rattan Lal and ...	RATTAN LAL	628.168 4 R20S
All India co-ordinated Rice Improvement Programme ...		633.180 72 A4...
Land and soil management : technology, economics ...	SFEIR YOUNIS, Alfredo	333.730 917 2...
Properties and management of forest soils : by William L...	PRITCHETT, William L.	634.9 P86P
Sub soil management techniques : ed. by N.S. Jaya...	JAYAWARDNA, N. S.	SOILS 631.4 J...
Soil in our environment : by Raymond W. Miller and R...	MILLER, Raymond W.	SOILS 631.4 ...

628.168 4 R20S RATTAN LAL and STEWART, B.A. Soil processes and water quality : ed. by Rattan Lal and B.A. Stewart : Boca Raton, 1994. 398p (Advances in soil science)

230341 1. SOIL MANAGEMENT 2. WATER-POLLUTION: I. Title (Series)

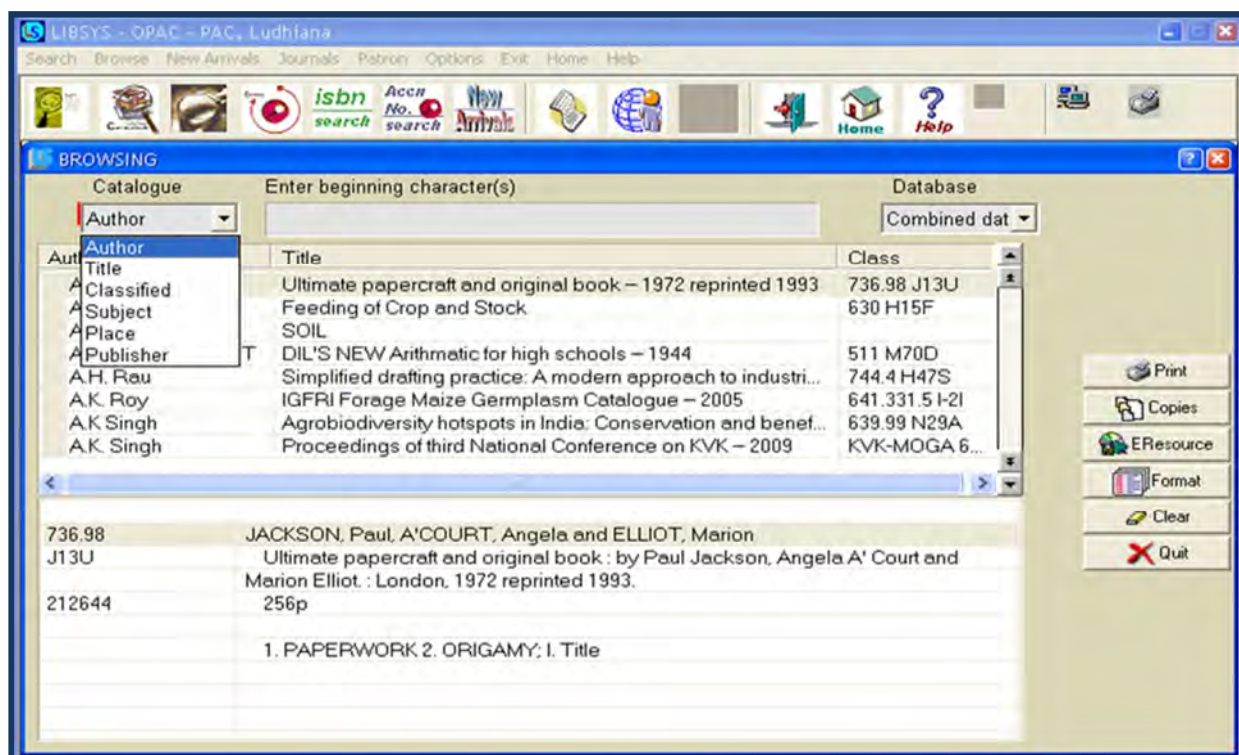
Print Copies EResource Format Back

ADDITIONAL SEARCH: This function helps in making an additional search. The data fields are:

- Database: Select the database on which the search is to be made.
- Field: Enter the words or phrase in each of the search fields.
- Connector: Select the connector from the combo box.
- Specify Year(s) of Publication: Give the time frame within which a search has to be made.
- Click Search and the result are displayed.

BROWSE: This function helps in browsing the database. The browsing can be done on different catalogues such as, author, title, and subject and on different databases such as, books, journals, articles, reports, etc. The data fields are:

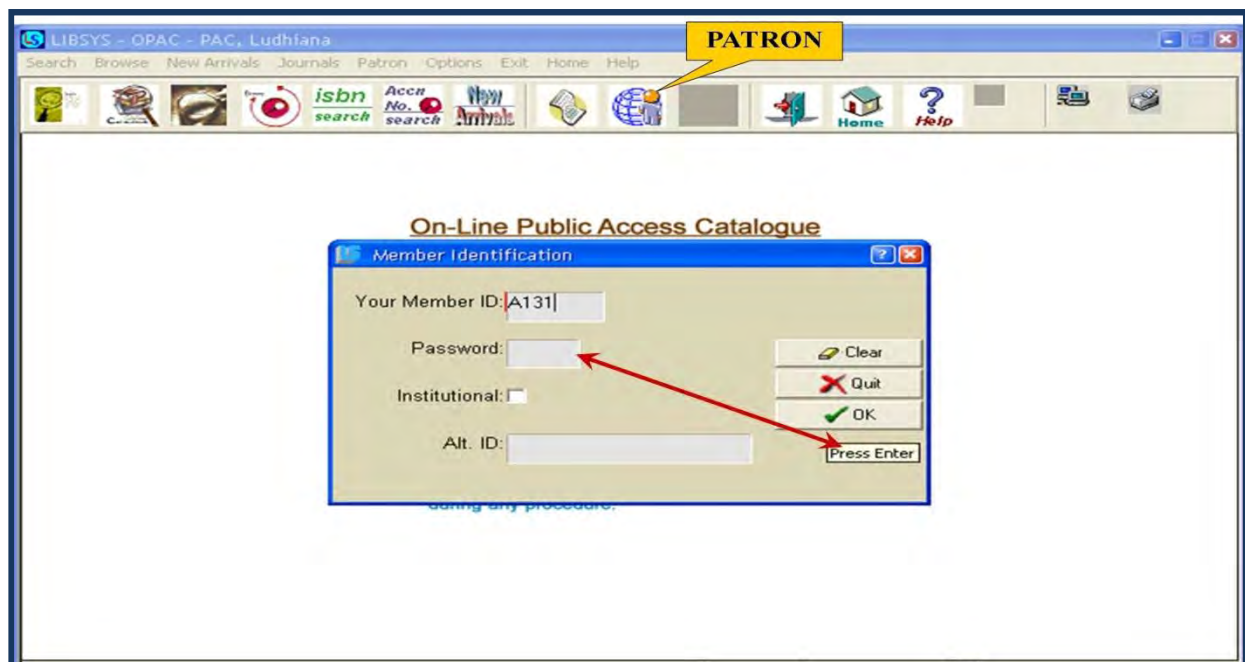
- Catalogue: Select from the combo box author, title, classified, subject, place or publisher.
- Enter beginning character(s): Enter the search word(s)
- The screen displays the author, title and call number if 'Author' is selected as the catalogue to be searched on. The details of a selected title are also displayed.



JOURNALS: This option displays the list of serials in a library. The list is arranged in an alphabetic order and it displays the name of the publisher also.



PATRON: This option enables a member to know how many check-outs i.e. issued books are in his name showing title, author and due date of the book to be returned.



**CONSORTIUM FOR E-RESOURCES IN AGRICULTURE
(CeRA):
(www.cera.jccc.in)**

With the rapid growth of internet facilities and advancement of web technology, almost all reputed international journals are available on-line and can be easily accessed by researchers over the network of ICAR Institutes and State Agricultural Universities. Accordingly, National Agricultural Innovation Project (NAIP) has funded for establishing the Consortium for e-Resources in Agriculture (CeRA) at the Indian Agricultural Research Institute (IARI) in November 2007 to facilitate accessibility of scientific journals to all researchers/teachers in the National Agricultural Research System by providing access to journals online which is crucial for having excellence in research.

OBJECTIVES:

- To upscale the existing R & D information resource base of ICAR Institutions/ Universities comparable to world's leading Institutions/ Organizations.
- To subscribe e-journals and create e-access culture among Scientists/ Teachers in National Agricultural Research System (NARS).
- To access the impact of CeRA on the level of research publications measured through NAAS ID and Science Citation Index (SCI).

CeRA currently provided access to a collection of 2,000 + Journals (Electronic + Print) from several publishers from the following sources:

- 200 + Print Journals from Designated Document Delivery Libraries
- 1800 + e-Journals from the following participating publishers:
 - Springer - 70
 - Taylor & Francis Group - 1079
 - Indian Journals - 131
 - Annual Reviews - 22
 - Elsevier - 358
 - CSIRO - 8
 - Oxford University Press - 30
 - American Society of Agronomy – 8

HOMEPAGE OF CONSORTIUM FOR E-RESOURCES IN AGRICULTURE:



CeRA, a web portal, specially designed with a motive to improve the quality of Research & Teaching in institutions, under National Agricultural Research System, which are IP authenticated, can access CeRA from www.cera.jccc.in.

ACCESS TO CERA:

CeRA can be accessed via:

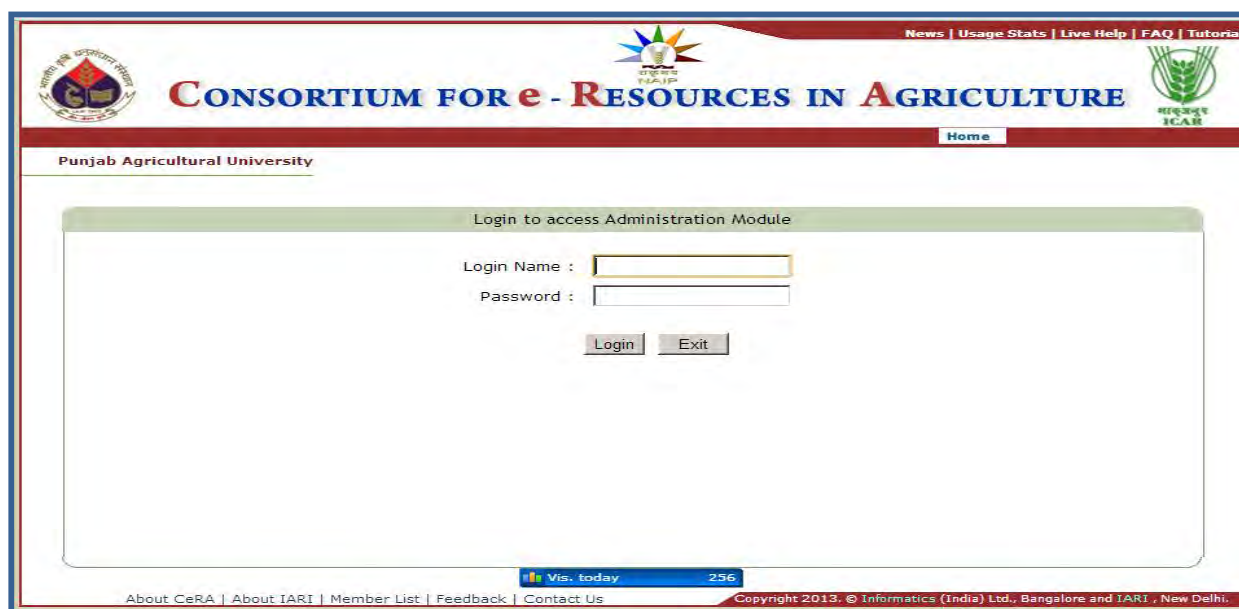
(i) IP authentication

If the access is via IP authentication then you can view the Full Text for a particular article.

(ii) No IP authentication

If the access is not IP authenticated the Username and Password is required and user can view only 'abstract' for a particular article.

Apart from this the IP authenticated Institutes can also access Admin module by clicking the Admin visible on the right hand side of the Homepage and by entering the Username and Password. It will appear as follows:



Admin mainly provides the:

- É Consortia Subscribed Journals
- É Library Subscribed Journals
- É Open Access Journals

VARIOUS MEANS OF SEARCHING IN CeRA:

SEARCHING FOR ARTICLES:



As shown in the above image, an article can be accessed in CeRA through:

Quick Search: It is used to search articles or journals against the search term (keyword) entered in all the fields.

- Advanced Search: It gives more searching options and is specially designed to guide you in creating a useful search.
- Browse Journals: This helps in browsing journals by Title, Subject and Publisher name.
- My Journals: This help to create an account and receive Alert mails.

HOW TO CARRY OUT QUICK SEARCH:



Quick Search can be carried out via Phrases separated by Boolean Operators. For instance we type the phrase in the search box and click on the search tab. We can find out the related keywords by using various Boolean operators like AND, OR etc.

RESULT PAGE FOR QUICK RESEARCH:

Result page of the keywords searched will be in below cited format. It contains the total number of results to the corresponding search i.e. number of articles, period i.e. year from which that search has been done till date, number of results per page. Articles can be viewed in the form of Abstract, Full-Text and PDF File.

CONSORTIUM FOR e-RESOURCES IN AGRICULTURE

Advanced Search | Browse Journals | My Journals

Punjab Agricultural University

Quick Search - Enter Search Term

Search Term(s) : potato
 Search Field(s) : Title, Abstract, Author, Keyword, Affiliation
 Results Matched : 21390
 Subject(s) : All Subjects
 Period : All Years
 Results per page : 10

Page 1 of 2139

1. Physicochemical Characterization of Sweet Potato Starches Popularly Used in Chinese Starch Industry
 Author E-mail : mutaihua@126.com
 Author(s) : Oluwaseyi Kemi Abegunde; Tai-Hua Mu; Jing-Wang Chen; Fu-Ming Deng
 Author Address : Key Laboratory of Agro-Products Processing, Ministry of Agriculture, Institute of Agro-Products Processing Science and Technology, Chinese Academy of Agricultural Sciences, Beijing 100193, PR China
 Source : Food Hydrocolloids, Vol.33 No.2 December 2013 [Page 169-177]
 Keyword(s) : Amylose; Gelatinization; Retrogradation; Sweet Potato Starch; Swelling Power; Solubility

Abstract Full-Text Online Peer-Reviewed

2. Synergistic Cytotoxicity Induced by α -Solanine and α -Chaconine
 Author E-mail : yamasho@ms.sist.ac.jp
 Author(s) : Shiro Yamashoji; Takako Matsuda
 Author Address : Shizuoka Institute of Science and Technology, Fukuroi, Shizuoka 437-8555, Japan
 Source : Food Chemistry, Vol.141 No.2 November 2013 [Page 669-674]
 Keyword(s) : α -Solanine; α -Chaconine; Synergistic Effect; WST-1 Assay; LDH Assay; Chemiluminescent Assay

Abstract Full-Text Online Peer-Reviewed

ADVANCED SEARCH:

Following is the figure for 'Advanced Search':

CONSORTIUM FOR e-RESOURCES IN AGRICULTURE

Advanced Search | Browse Journals | My Journals

Punjab Agricultural University

Advance Search

Search for : ☒ Peer-Reviewed Journals ☒ Professional & Trade Journals ☒ Open-access Journals

Search Examples

Search Term: Farming in Potato in Title Only AND Go Clear

Example : "Geosynchronous Satellite Launch Vehicle" or GSVL

Search By Title, Keyword, Abstract Author, Author's Institution, Journal Name

Limit by

Results View 10 results per page.

Publication Year From All To All

Subject(s)

Subject Categories (Click on + for expanding the subject list)

☒ All

☒ Agricultural & Biological Sciences

☒ Arts & Humanities

☒ Basic Sciences

☒ Biomedical Sciences

☒ Engineering & Technology (JET)

Choose year range or week updated

474

About CeRA | About IARI | Member List | Feedback | Contact Us | Newsletter

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EXAMPLE: Advanced Search can be carried out by writing the topic to be searched in Search for box. e.g. Farming in Potatoes. The search can be done in various fields via Title only, Keyword only, etc which can be selected from the various options

available. Apart from this, number of References can also be chosen e.g.10 in this case. Various subject options are also available.

EXPANSION OF SUBJECT CATEGORY TO VARIOUS LEVELS IN ADVANCED SEARCHING:

The screenshot displays the 'Advanced Search' page of the Consortium for e-Resources in Agriculture (CeRA). The page features a search bar with a dropdown menu for 'Search for' and a 'Go' button. Below the search bar, there are checkboxes for 'Peer-Reviewed Journals', 'Professional & Trade Journals', and 'Open-access Journals'. The 'Limit by' section includes a 'View' dropdown set to '10 results per page', a 'From' dropdown set to 'All', and a 'To' dropdown set to 'All'. The 'Subject(s)' section shows a list of subject categories under 'Level-I' and 'Level-II'. Level-I includes 'All', 'Agricultural & Biological Sciences', 'Arts & Humanities', 'Basic Sciences', 'Biomedical Sciences', and 'Engineering & Technology (JET)'. Level-II includes the same categories plus 'Engineering & Technology (JET)'. The 'Vis. today' counter shows 35.

Advanced search can be done more precisely by selecting the subject category of user's interest at various levels being level-I be the basic level which has sub-level i.e. Level-II.

RESULT PAGE OF ADVANCED SEARCH:

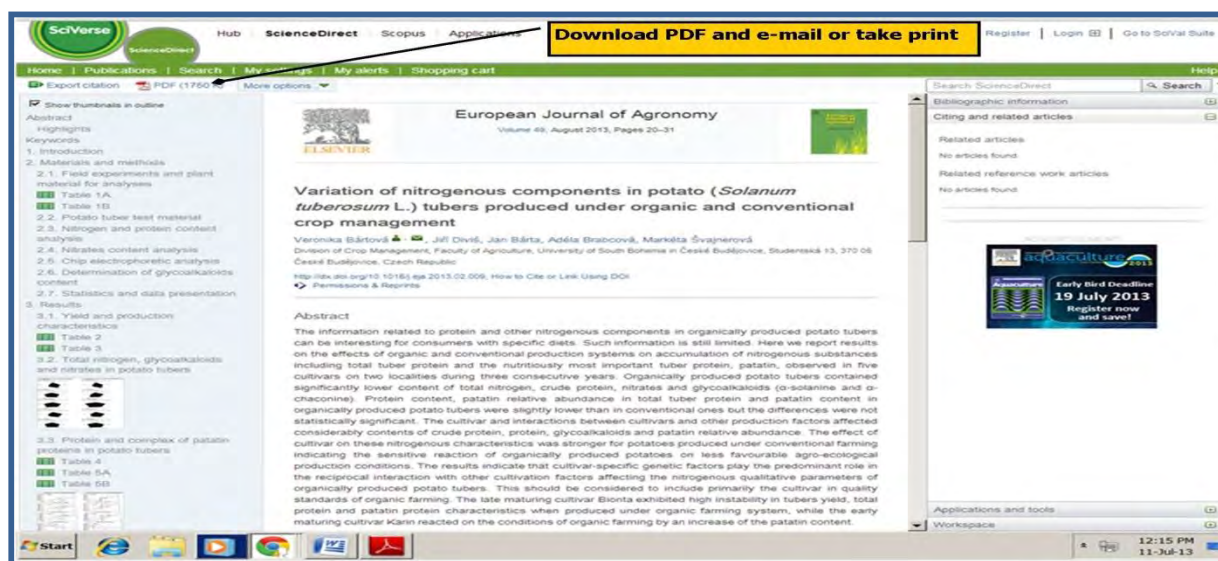
The screenshot displays the 'Result Page of Advanced Search' on the CeRA website. The page shows search filters for 'Peer-Reviewed Journals', 'Professional & Industry Journals', and 'Open-Access Journals'. The search bar contains 'Quick Search - Enter Search Term'. Below the search bar, there are filters for 'All Fields', 'Farming in Potatoes', and 'All Years'. The results are displayed in a table with columns for 'Author(s)', 'Author Address', 'Source', and 'Keyword(s)'. The first result is '1. Usage and Field Performance of Automatic - Potato Planters in India' by S S Ahuja, B S Bhatia. The page also shows a 'Vis. today' counter at 65.

The result page contains various journals. Each journal has abstract and the content is available in Full Text form or as a PDF file.

The screenshot shows the homepage of the Consortium for e-Resources in Agriculture. At the top, there are navigation links: Admin, News, Usage Statistics, Live Help, FAQ, Tutorial, Home, and Logout. The main header features the consortium's name and logos of member institutions like Punjab Agricultural University and IARI. Below the header, there's a search bar with a 'Quick Search - Enter Search Term' field and a 'Search Examples' link. A yellow box highlights 'Article found in Farming in Potatoes'. The search results section shows filters: All Fields 'Farming in Potatoes' (more...), Results Matched: 1, Period: All Years, and Results per page: 10. A list of results is shown, with the first entry titled '1. Usage and Field Performance of Automatic - Potato Planters in India'. This entry includes author details (S S Ahuja, B S Bhatia), address (Department of Farm Power & Machinery, PAU, Ludhiana), source (Agricultural Engineering Today, Vol.26 No.3&4 August 2002), and keywords (Field Performances; Potatoes; Labor Intensive; Planting Season; Plant Spacing; fuel consumption; Sandy Loam). Below the entry, there are links for 'Abstract', 'Request the Article', and 'View the Abstract'. A yellow box highlights 'View the Abstract'. At the bottom, there's a 'Vis. today' counter showing 63 and a copyright notice for 2013.

View of Full Abstract:

The screenshot shows the full abstract page for the article 'Variation of Nitrogenous Components in Potato (Solanum Tuberosum L.) Tubers Produced under Organic and Conventional Crop Management'. The page header includes the consortium's name and logos. The article title is prominently displayed. Below the title, there's a 'Reprint Author E-mail' field (vbartova@zf.jcu.cz) and 'Authors' (Veronika Bártová, Jiri Diviš, Jan Bárta, Adéla Brabcová, Markéta Švajnerová). The 'Author Address' is 'Division of Crop Management, Faculty of Agriculture, University of South Bohemia in České Budejovice, Studentská 13, 370 05 České Budejovice, Czech Republic'. The 'Source' is 'European Journal of Agronomy Vol.: 49, August 2013 [Page 20-31]'. The 'Keyword(s)' are 'Organically Produced Potato; Conventionally Produced Potato; Potato Tuber Nitrogenous Component; Glycoalkaloid; Nitrate; Tuber Protein; Patatin'. The 'Abstract' text follows, discussing the information related to protein and other nitrogenous components in organically produced potato tubers. At the bottom, there's a 'Vis. today' counter showing 81 and a copyright notice for 2013.

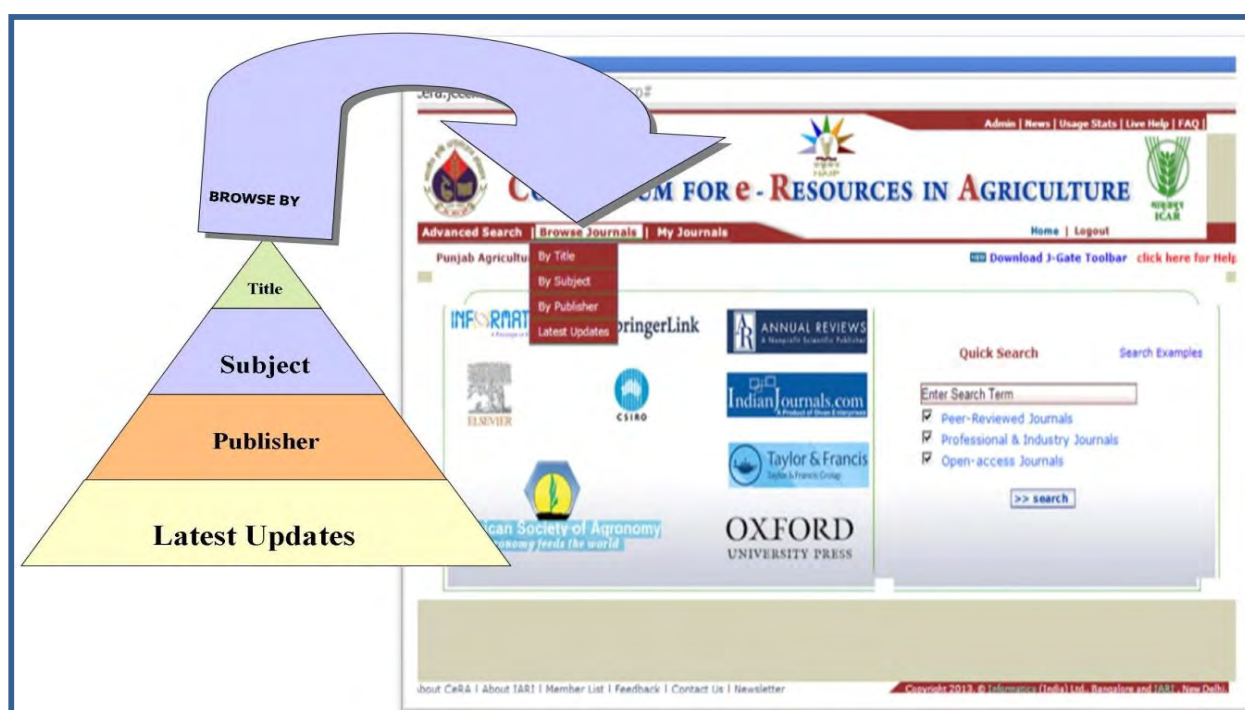


BROWSING JOURNALS:

Various Journals can be browsed from the Browse Journals option by searching under the following:

- Title
- Subject
- Publisher's Name
- Latest Updates of Journals

The following image shows the Browsing Journals page:



BROWSING BY TITLE:

Browsing Journals via Title gives the list of all the title in alphabetical order, which on further click gives the Journals under that Title. The access type is also directed where

FT: Full-Text

RA: Request the Article

AL: Available in your Library

In case the journals are not available in your library then article can be requested to particular institute in which that is available by filling and sending the form to the institutes having that article.

CONSORTIUM FOR e-RESOURCES IN AGRICULTURE

Advanced Search | Browse Journals | My Journals

Punjab Agricultural University

Quick Search - Enter Search Term

Legends: RA->Request Article, FT->Full-Text, AL->Available in your Library

No.	Journal Title	Access Type	Journal Type
1	ACADEMICIA: An International Multidisciplinary Research Journal	FT	Peer-reviewed
2	Academy of Management Annals	FT	Peer-reviewed
3	Accountability in Research	FT	Peer-reviewed
4	Accounting Education	FT	Peer-reviewed
5	Accounting History Review	FT	Peer-reviewed
6	Accounts of Chemical Research	AL	Peer-reviewed
7	ACM Transactions on Mathematical Software	RA	Peer-reviewed
8	Acta Adriatica	FT	Peer-reviewed
9	Acta Agriculturae Scandinavica, Section A: Animal Science	FT	Peer-reviewed
10	Acta Agriculturae Scandinavica, Section B: Plant Soil Science	FT	Peer-reviewed
11	Acta Agronomica Sinica	FT	Peer-reviewed
12	Acta Amazonica	FT	Peer-reviewed
13	Acta Biochimica et Biophysica Sinica	RA	Peer-reviewed
14	Acta Biomaterialia	FT	Peer-reviewed
15	Acta Biotheoretica	RA	Peer-reviewed
16	Acta Sorealia	FT	Peer-reviewed
17	Acta Botanica Brasiliica	FT	Peer-reviewed
18	Acta Ecologica Sinica	FT	Peer-reviewed
19	Acta Histochemica	FT	Peer-reviewed
20	Acta Horticulturae	AL	Peer-reviewed

Vis. today: 466

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FORM CONTAINING PAGE FOR REQUESTING THE ARTICLE:

CONSORTIUM FOR e-RESOURCES IN AGRICULTURE

Punjab Agricultural University

Fields Marked * are Mandatory

Document Delivery Request

Due to large number of article requests, please be informed that only 5 articles per user per session are entertained. In case the requests exceed 5 articles, a nominal fee of Rs.10/- per article will be charged. For more details, you are requested to contact IARI at cera.usi@iari.res.in

From * [Enter your email ID]

To [Indian Agricultural Statistics Research Institute]

CC [Punjab Agricultural University]

Sub [Request for Photocopy]

Title [Algorithm 814: Fortran 90 Software for Floating-Point Multiple Precision Arithmetic, Gamma and Related Functions.]

Authors [David M. Smith]

Journal [ACM Transactions on Mathematical Software]

Vol [27] Iss [4] Year [2001] Page [377-387]

Name * [Student]

Designation [Student]

Roll No/Admission No* []

Vis. today: 319

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ARTICLES WHICH ARE AVAILABLE IN YOUR LIBRARY:

CONSORTIUM FOR e-RESOURCES IN AGRICULTURE

Punjab Agricultural University

Table of Contents
Acta Horticulturae
Published by : *International Society for Horticultural Science*

Current Issue : Vol. 969, Dec, 2012 [Archives](#)

- 1. Pheophytin Formation with Senescence in Stored Japanese Bunching Onion**
Authors : P.K. Dissanayake ; N. Yamauchi ; M. Shigyo ; S. Tanaka
Keywords : Chlorophyll Degradation ; Pheophytin A ; Allium Fistulosum ; Plastoglobules
[Abstract](#) [Visit Your Library](#)
- 2. Potential of Non-Destructive Evaluation of Internal Disorder, Browning of Outer Scale in Onions Using near Infrared (nir) Spectroscopy**
Authors : H. Ito ; G. Hattori
Keywords : Intact ; Detection ; Bulb ; Interactance Mode
[Abstract](#) [Visit Your Library](#)
- 3. Onion Leaf Desiccation Processes and Implications for Skin Quality**
Authors : A. Gracie ; M. Boersma ; R. Smith ; P. Brown ; J. Dennis
Keywords : Allium Cepa ; Skin Formation ; Physical Properties of Onion Skins
[Abstract](#) [Visit Your Library](#)

Available in Library

DIRECTLY MAILING THE AUTHOR OF ARTICLE:

CONSORTIUM FOR e-RESOURCES IN AGRICULTURE

Punjab Agricultural University

Table of Contents
Academy of Management Annals
Peer-reviewed Journal
Published by : *Routledge*

Vol. 6, No. 1, Jun, 1 2012 [Archives](#)

- 1. The Behavioral Theory of the Firm: Assessment and Prospects**
Reprint Author E-mail : ggavetti@hbs.edu
Authors : Giovanni Gavetti ; Henrich R. Greve ; Daniel A. Levinthal ; William Ocasio
Affiliation : Harvard Business School
[Abstract](#) [Full-Text Online](#) Page No. : 1-40
- 2. Competitive Dynamics: Themes, Trends, and a Prospective Research Platform**
Reprint Author E-mail : chenm@arden.virginia.edu
Authors : Ming-Jer Chen ; Danny Miller
Affiliation : The Darden School , University of Virginia
[Abstract](#) [Full-Text Online](#) Page No. : 135-210

User can directly mail the Author

FILTERING THE JOURNALS CONTAINING THE KEYWORD PLANT:

Journals can be filtered out by using various keywords in the box of find journals. For e.g. Journal Title containing the word Potato can be searched from the available list of journals.

The screenshot shows the CeRA website interface. At the top, there are navigation links: Admin, News, Usage Statistics, Live Help, FAQ, Tutorial. Below this is the header 'CONSORTIUM FOR e-RESOURCES IN AGRICULTURE' with logos of Punjab Agricultural University and ICAR. The main navigation bar includes 'Advanced Search', 'Browse Journals', and 'My Journals'. A search bar is present with the text 'Quick Search - Enter Search Term'. Below the search bar, there are checkboxes for 'Peer-Reviewed Jnls', 'Professional & Industry Jnls', and 'Open-Access Jnls'. A dropdown menu shows '3 Journals containing "Potato"'. The search results are displayed in a table with columns: Journal Title, Access Type, and Journal Type. The results are: American Journal of Potato Research (RA), Potato Journal (FT), and Potato Research (RA). Three yellow callout boxes provide instructions: '3 Journals containing the word "Potato"', 'Click on the title of the journal to View Table of Contents of the Journals', and 'List of Journals containing the search word'.

Journal Title	Access Type	Journal Type
American Journal of Potato Research	RA	
Potato Journal	FT	
Potato Research	RA	

FINDING ARTICLES IN THE JOURNAL:

The screenshot shows the 'Table of Contents' page for the journal 'Accountability in Research'. The page is published by Taylor and Francis Ltd. The current issue is Vol. 20, No. 4, 2013. The page lists three articles with their titles, authors, affiliations, keywords, and page numbers. Two yellow callout boxes provide instructions: 'To View Latest Issue' and 'To View Back Issues'.

Article Title	Author(s)	Affiliation	Keywords	Page No.
1. When everyone is an Orphan: Against Adopting a U.S.-Styled Orphan Drug Policy in Canada	Matthew Herder	Health Law Institute, Faculties of Medicine and Law, Dalhousie University, Halifax, Nova Scotia, Canada	Health Innovation Policy; Orphan Drug; Pharmaceutical Industry; Rare Disease	269
2. Ability of Reviewer Ratings in the Manuscript Peer Review Process: An Opportunity for Improvement	Adedayo A. Onitilo; Jessica M. Engel; Sherry A. Salzman-Scott; Rachel V. Stankowski; Suhail A. ...	Department of Hematology/Oncology, Marshfield Clinic Weston Center, Weston, Wisconsin, USA	Accountability; Disagreement; Peer Review; Rating	270-284
3. Letter to the Editor: Orphan Papers and Ghostwriting: The Case against the ICMJE	Seun Moses Abimbola	Journal of OncoPathology, London, UK		285-286

BROWSING OF TABLE OF CONTENT:

‘Table of Content’ provides the article of various years of particular volumes.

The screenshot shows the homepage of the Consortium for e-Resources in Agriculture. At the top, there are logos for the Consortium, IARI, and ICAR. The main heading is "CONSORTIUM FOR e-RESOURCES IN AGRICULTURE". Below this, it says "Accountability in Research" and "Published by : Taylor and Francis Ltd". A yellow callout bubble points to the year "2013" in the "ARCHIVE DETAILS" section, with the text "Click to Select Year". The "ARCHIVE DETAILS" section displays a grid of years from 2013 down to 2004. Below this, the "Issue List - 2013" is shown, listing "Vol. 20 No. 01", "Vol. 20 No. 02", and "Vol. 20 No. 03". A yellow callout bubble points to "Vol. 20 No. 03" with the text "To View Required Issue". At the bottom, there is a "Vis. today" counter showing "169" and a copyright notice for 2013.

BROWSING VIA SUBJECT:

‘Subject’ helps in searching the articles of various subjects and we can choose the subject of interest by clicking the check boxes. For this refer image given below:

The screenshot shows the "Browse Journals" section of the website. A yellow callout bubble points to the "By Subject" option in the "Browse Journals" menu, with the text "Browsing Journals by Subject". Below this, the "Subject Categories" are listed, including "All", "Agricultural & Biological Sciences", "Agriculture Sciences", "Agricultural Biotechnology", "Agricultural Engineering", "Agro Business, Economics and Policies", "Agronomy", "Animal Husbandry, Livestock Management & Poultry Sciences", "Animal Nutrition, Feed, Feed Additives & Manufacture", "Apiculture", "Crops, Crop Production and Protection", "Dairy Technology", "Dryland Farming", "Fisheries and Aquaculture", and "Food Science and Technology". A yellow callout bubble points to the "Agriculture Sciences" category, with the text "Select the Required Subject". At the bottom, there is a "Vis. today" counter showing "208" and a copyright notice for 2013.

RESULT PAGE SHOWING VARIOUS JOURNALS RELEVANT TO SUBJECT SELECTED:

CONSORTIUM FOR e-RESOURCES IN AGRICULTURE

Admin | News | Usage Statistics | Tutorial

Advanced Search | Browse Journals | My Journals

Peer-Reviewed Jnls | Professional & Industry Jnls | Open-Access Jnls

Quick Search - Enter Search Term

Select Subject: Cultural Biotechnology : (Display Selected Subjects)

Legends: RA->Request Article, FT->Full-Text, AL->Available in your Library

Total Journals found: 94

List of Journals on Selected Subject

No.	Journal Title	Access Type	Journal Type
1	Advanced BioTech	FT	
2	African Journal of Agricultural Research	FT	Peer-reviewed
3	African Journal of Microbiology Research	FT	Peer-reviewed
4	Agricultural & Industry Survey	FT	
5	Agricultural Education Magazine	FT	
6	Agricultural Journal	FT	
7	Agricultural Outlook	FT	
8	Agricultural Research Magazine	FT	
9	Agricultural Systems	FT	Peer-reviewed
10	Agroforestry Systems	FT	Peer-reviewed
11	Agrolook	FT	
12	Allelopathy Journal	RA	
13	American Journal of Agricultural and Biological Sciences	FT	Peer-reviewed
14	American Journal of Biochemistry and Biotechnology	FT	Peer-reviewed
15	American Journal of Potato Research	RA	
16	Animal Biotechnology	FT	Peer-reviewed
17	Animal Production Science	FT	Peer-reviewed
18	Animal Science Journal	RA	Peer-reviewed
19	Applied Biochemistry and Biotechnology Part A: Enzyme Engineering and Biotechnology	FT	
20	Applied Biological Research	FT	Peer-reviewed
21	Appropriate Technology	RA	Peer-reviewed
22	Bayer CropScience Journal	FT	
23	Biocatalysis and Agricultural Biotechnology	FT	Peer-reviewed
24	Bioinfollet	FT	

Vis. today: 226

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BROWSING VIA PUBLISHER:

Articles of various subjects of a particular publisher can be searched by simply writing the name of publisher in the search box. See the following image:

CONSORTIUM FOR e-RESOURCES IN AGRICULTURE

Home | Logout

Punjab Agricultural University

Search Box

Peer-Reviewed Jnls | Professional & Industry Jnls | Open-Access Jnls

Quick Search - Enter Search Term

Select Subject: Annual Reviews Inc.

Legends: RA->Request Article, FT->Full-Text, AL->Available in your Library

Viewing Page 1 of 1

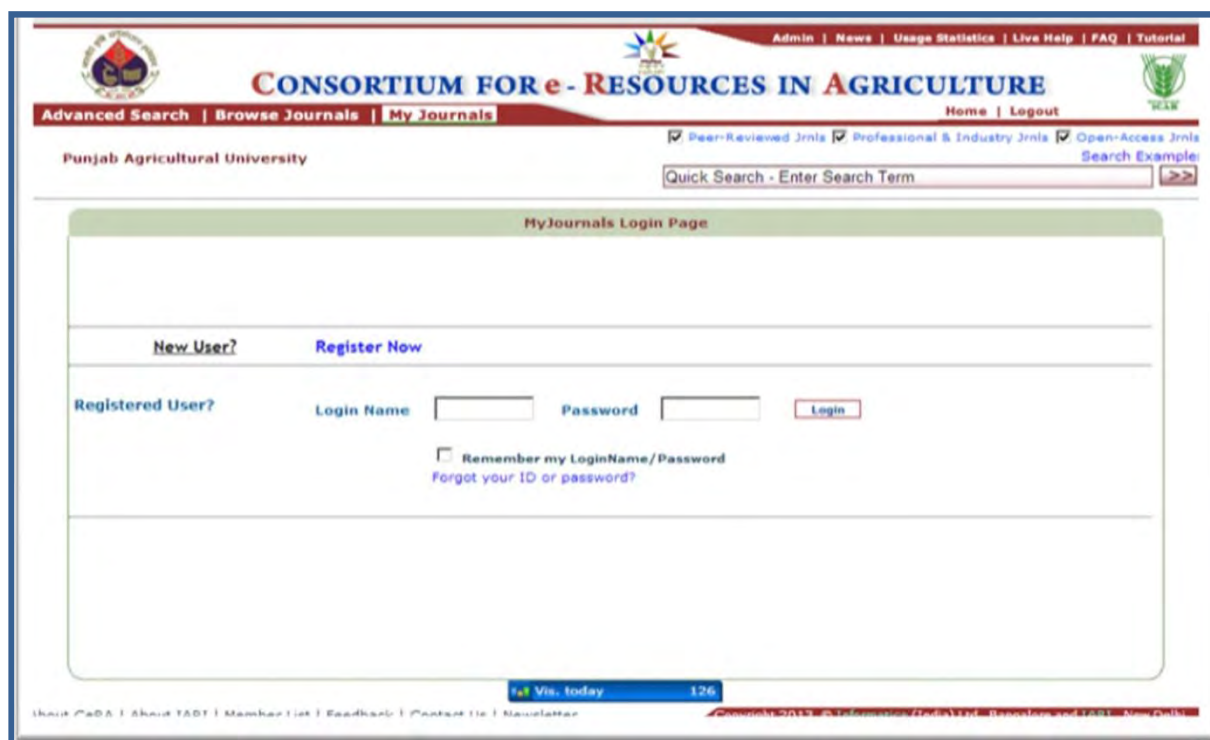
View Journals from Annual Reviews

No.	Journal Title	Access Type	Journal Type
1	Annual Review of Analytical Chemistry	FT	
2	Annual Review of Animal Biosciences	FT	
3	Annual Review of Biochemistry	FT	Peer-reviewed
4	Annual Review of Biomedical Engineering	FT	Peer-reviewed
5	Annual Review of BioPhysics	FT	Peer-reviewed
6	Annual Review of Cell and Developmental Biology	FT	Peer-reviewed
7	Annual Review of Chemical and Biomolecular Engineering	FT	Peer-reviewed
8	Annual Review of Clinical Psychology	FT	Peer-reviewed
9	Annual Review of Ecology, Evolution, and Systematics	FT	Peer-reviewed
10	Annual Review of Entomology	FT	Peer-reviewed
11	Annual Review of Genetics	FT	Peer-reviewed
12	Annual Review of Genomics and Human Genetics	FT	Peer-reviewed
13	Annual Review of Immunology	FT	Peer-reviewed
14	Annual Review of Marine Science	FT	Peer-reviewed
15	Annual Review of Medicine	FT	Peer-reviewed
16	Annual Review of Microbiology	FT	Peer-reviewed
17	Annual Review of Neuroscience	FT	Peer-reviewed
18	Annual Review of Nutrition	FT	Peer-reviewed
19	Annual Review of Pathology: Mechanisms of Disease	FT	Peer-reviewed
20	Annual Review of Pharmacology and Toxicology	FT	Peer-reviewed
21	Annual Review of Physical Chemistry	RA	Peer-reviewed
22	Annual Review of Physiology	FT	Peer-reviewed
23	Annual Review of Phytopathology	FT	Peer-reviewed
24	Annual Review of Plant Biology	FT	Peer-reviewed
25	Annual Review of Psychology	FT	Peer-reviewed
26	Annual Review of Public Health	FT	Peer-reviewed

Vis. today: 231

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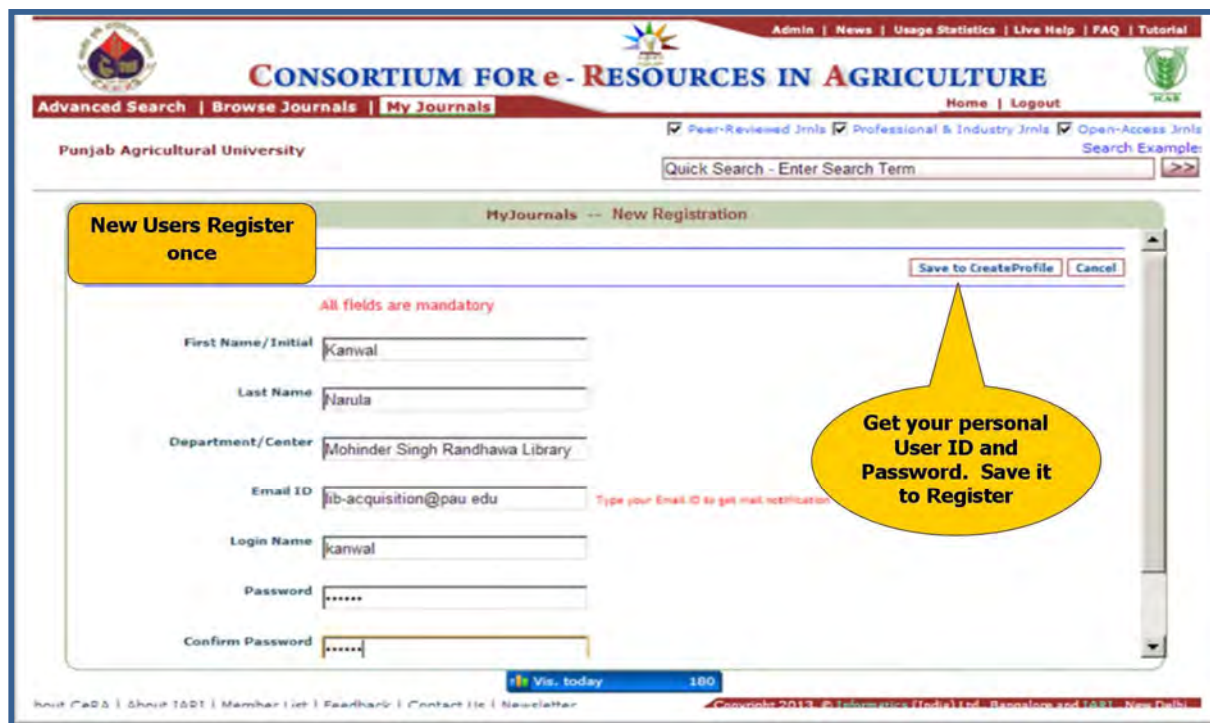
MY JOURNAL – HOMEPAGE:



The screenshot shows the 'MyJournals Login Page' of the Consortium for e-Resources in Agriculture. The page features a navigation bar with links like 'Admin', 'News', 'Usage Statistics', 'Live Help', 'FAQ', and 'Tutorial'. Below the navigation bar, there are search options: 'Advanced Search', 'Browse Journals', and 'My Journals'. A search bar is present with the text 'Quick Search - Enter Search Term'. The main content area is titled 'MyJournals Login Page' and contains a 'New User?' section with a 'Register Now' link. Below this is a 'Registered User?' section with fields for 'Login Name' and 'Password', a 'Login' button, and a checkbox for 'Remember my LoginName/Password'. A link for 'Forgot your ID or password?' is also visible. At the bottom, there is a status bar showing 'Vis. today' and '126'.

Using my journal, user can create account and can carry out the search according to the requirement.

REGISTRATION PAGE ON MY JOURNAL:



The screenshot shows the 'MyJournals -- New Registration' page. A yellow callout box on the left says 'New Users Register once'. The registration form includes fields for 'First Name/Initial' (filled with 'Kanwal'), 'Last Name' (filled with 'Narula'), 'Department/Center' (filled with 'Mohinder Singh Randhawa Library'), 'Email ID' (filled with 'lib-acquisition@pau.edu'), 'Login Name' (filled with 'kanwal'), 'Password', and 'Confirm Password'. A red note states 'All fields are mandatory'. A yellow callout box on the right says 'Get your personal User ID and Password. Save it to Register'. The form has 'Save to CreateProfile' and 'Cancel' buttons. At the bottom, there is a status bar showing 'Vis. today' and '100'.

TO CREATE USER PROFILE:

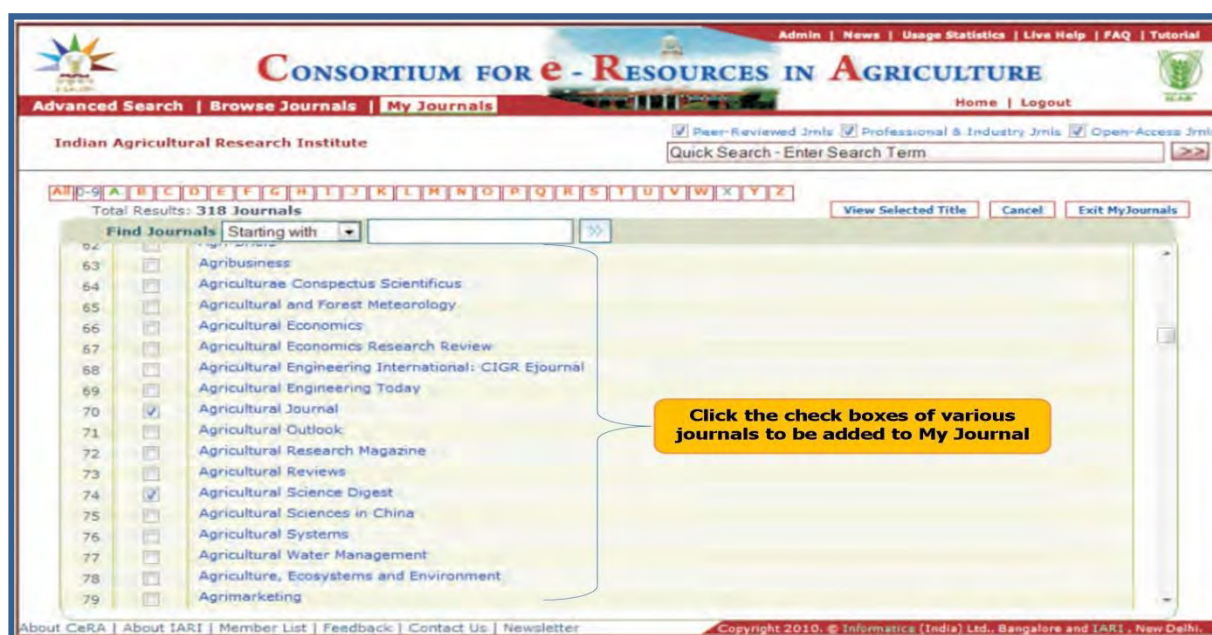
The screenshot shows the 'MyJournals - Create Profile' page. At the top, there is a navigation bar with links: 'Advanced Search', 'Browse Journals', and 'My Journals'. Below this, there is a search bar with the text 'Quick Search - Enter Search Term'. The main content area has a title 'MyJournals - Create Profile' and three buttons: 'Add journals', 'View Profile(s)', and 'Exit MyJournals'. A yellow callout box with a speech bubble points to the 'Add journals' button and the 'Profile Name' field. The callout text reads: 'User can give the profile name and can add journals to the profile by 'By Title' or 'By Subject''. The 'Profile Name' field contains the text 'Science' and a note 'You can add Maximum of 25 Journals'.

ADDING JOURNALS

- By Title
- By Subject

The screenshot shows the 'MyJournals - Create Profile' page with the 'Add journals' dropdown menu open. The dropdown menu has two options: 'By Title' and 'By Subject'. The 'By Subject' option is selected, and the text 'Science' is entered in the adjacent text field. The 'Profile Name' field contains the text 'Science' and a note 'You can add Maximum of 25 Journals'.

SELECTION OF JOURNALS TO BE ADDED IN MY JOURNAL PROFILE:

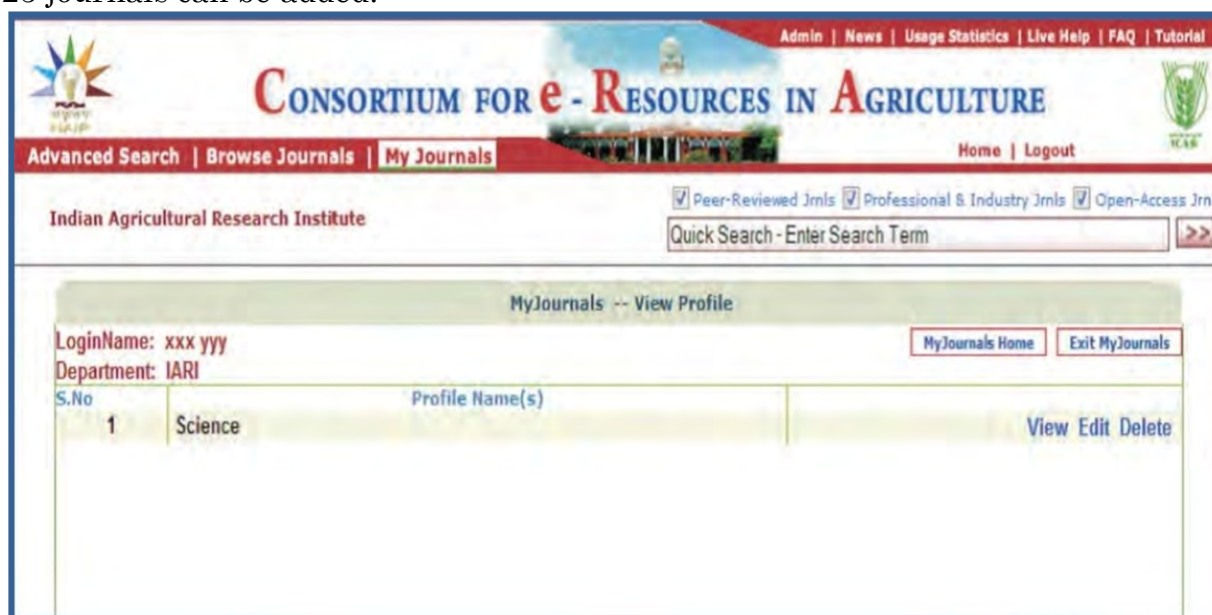


SAVING THE SELECTED JOURNALS IN USER'S PROFILE:

Any information related to these journals will be given by mail alerts to the user.

VIEW OF PROFILE CREATED:

A particular user can create at the max 5 profiles. In each profile, maximum 25 journals can be added.

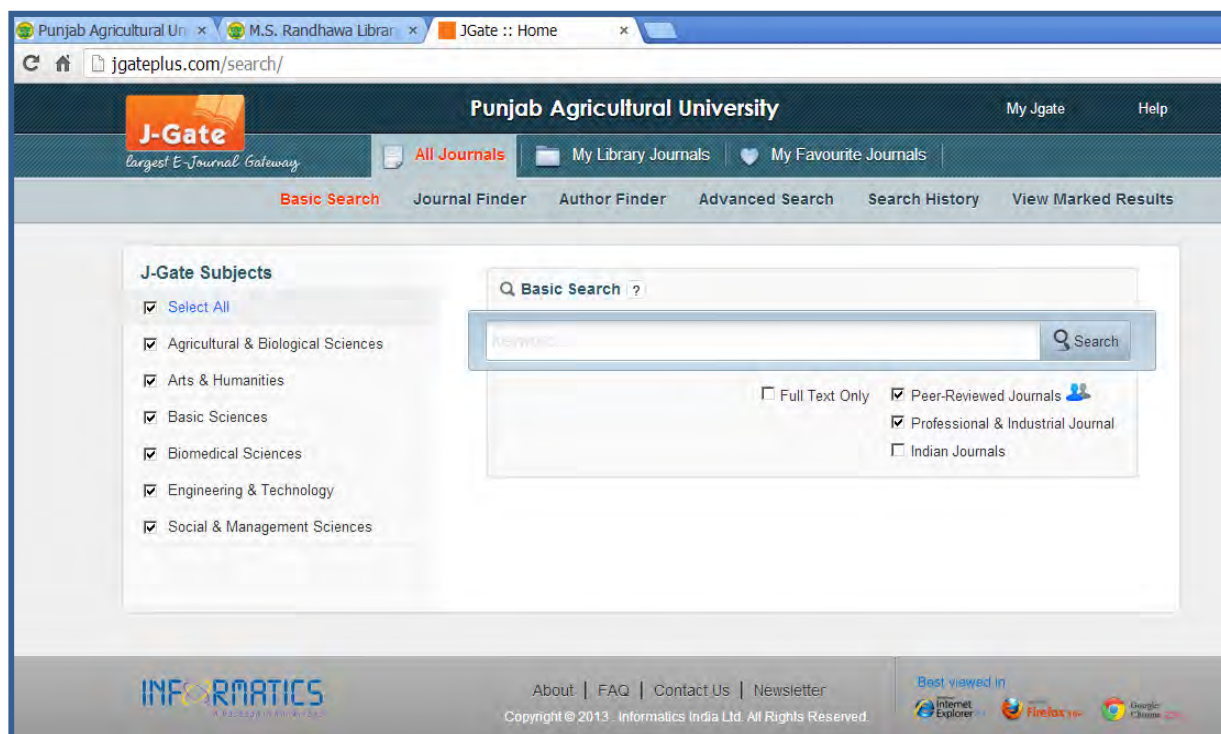


J-GATE: AGRICULTURAL & BIOLOGICAL SCIENCES

J-Gate (Agriculture and Biological Sciences) is portal cum bibliographic database providing access to more than 2100 online journals with links to full text for every article and author email address. In J gate all journals are indexed cover to cover. This has two major functions:

- Article Database Search
- Table of Contents Search

Table of contents allows the user to browse the latest Table of Contents by Journal , by publisher or by subject whereas the Article Database Search allow the user to search the bibliographic database of all the articles from online journals indexed in the database with link to full text and author email address. To avail the service, user may log on to <http://jgateplus.com>. The image of this service available on web link of Mohinder Singh Randhawa Library looks like as under:



Like in CeRA, a user can also develop his/her profile to have alerts on the upcoming/just published reference sources available in J-Gate service. System

generated e-mails are received regularly on the requisitioned and identified information sources.

COMMODITIES DATABASE

Commodities is the most comprehensive and reliable source of Indian Commodity Prices Market Intelligence, Crop forecasts and Time-series data for Commodities. This is a subscription service from the Centre for Monitoring Indian Economy Pvt. Ltd. (CMIE)

The Commodities database provides real-time spot and futures prices, market intelligence, historical fundamental data and robust forecasts for agricultural crops. This database is ideal for investors, researchers, banking and non-banking financial institutions involved in the commodities markets of India. Commodities deliver data on 200 varieties of crops of 70 commodities from 150 markets. It also contains statistics on area, production and yield upto district level. Reports and data on the progress of agriculture, along with quantitative forecasts on production of major crops complete the product's intelligence. 'Commodities' is updated on everyday basis by an expert team of analysts. CMIE analysts use the product to forecast company, industry and regional trends.

E-BOOKS

E-books library service available on web link of Mohinder Singh Randhawa Library is an aggregated e-book and e-content delivery platform. Links to 69 full text books, through four different vendors, have been given for on line access. Under this, access to 22 books published by CABI is given by MyiLibrary, 12 books published by Taylor & Francis are serviced by CRCnetBASE , 17 books on agriculture and related subjects is rendered by EBSCOhost Netlibrary, and Business Management e-Books provides access to 18 books published by Kogan Page.

ISO STANDARDS ON FOOD PRODUCTS

Standard is a document that provides requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose. ISO International Standards ensure that products and services are safe, reliable and of good quality. For business, these are strategic tools that reduce costs by minimizing waste and errors and increasing productivity. The standards help companies to access new markets, level the playing field for developing countries and facilitate free and fair global trade.

In Mohinder Singh Randhawa Library of PAU, access to following standards on food products is provided for general use:

- OLEAGINOUS SEEDS AND FRUITS AND OILSEED MEALS
- FRUIT AND VEGETABLE PRODUCTS
- CEREALS AND PULSES
- MILK AND MILK PRODUCTS
- MICROBIOLOGY
- SENSORY ANALYSIS
- FRESH, DRY AND DRIED FRUITS AND VEGETABLES
- HORIZONTAL METHODS FOR MOLECULAR BIOMARKER ANALYSIS
- MANAGEMENT SYSTEMS FOR FOOD SAFETY

A screen shot of ISO STANDARDS ON FOOD PRODUCT, an online library service available in PAU, is given below for reference:

ISO STANDARD ON FOOD PRODUCTS

Notice: Undefined variable: start in /opt/lampp/htdocs/sitonline/e-pustkalya/iso/count.php on line 9
Notice: Use of undefined constant r - assumed 'r' in /opt/lampp/htdocs/sitonline/e-pustkalya/iso/count.php on line 34
Notice: Use of undefined constant w - assumed 'w' in /opt/lampp/htdocs/sitonline/e-pustkalya/iso/count.php on line 38
Warning: fopen(count_file.txt): failed to open stream: Permission denied in /opt/lampp/htdocs/sitonline/e-pustkalya/iso/count.php
Warning: fwrite() expects parameter 1 to be resource, boolean given in /opt/lampp/htdocs/sitonline/e-pustkalya/iso/count.php

0000097

Keyword Text Search
Enter your Keyword Here

Search on ISO Standard Number

Reference	Number	Part
ex: ISO 734-1	734	1

BOOK SUPPLY BUREAU
D-44, South Extension-I
New Delhi-49
Ph : 2461 1991, 2463 4222
Fax : 2462 7172
E-mail : bsb@nda.vsnl.net.in
Website : www.bsb.co.in

INDIAN DOCTORAL THESES: KRISHI PRABHA

Krishi Prabha is a full text database of Indian Agricultural Doctoral Dissertations submitted by research scholars to the State/Deemed Agricultural Universities on or after 1st January 2000. This database has been created under National Agricultural Innovation Project (NAIP) of Indian Council of Agricultural Research (ICAR). This service is available on PAU e-Network. This is available by clicking Krishi Prabha at online services under M. S. R. Library link on the PAU web page. This service is user friendly and can be accessed by entering the required search term in 'Search Option'. The image of the same is as follows:

The screenshot displays the Krishi Prabha website interface. At the top, there is a navigation bar with links: Home, Search Options, Browse, and Help. Below this, there are search options: Keyword Search, Basic Search, and Advance Search. The main content area shows search results for 'Subject with Title: 160 record(s) found'. A table lists the first 10 records, including S.No., Title, and Category/Faculty Name. The table is as follows:

S.No.	Title	Category/Faculty Name
1	Analysis of circular steel silos for wind loading	Agricultural Engineering and Technology: Civil Engineering
2	Analytical studies on high-performance concrete T-beam bridges	Agricultural Engineering and Technology: Civil Engineering
3	Artificial neural networks and their application for simulation and prediction of runoff and sediment yield	Agricultural Engineering and Technology: Soil and Water Engineering
4	Bio-methanation parameters and kinetic evaluation of Pilot Biogas Plants Designed for solid-state fermentation of dairy cattle waste	Agricultural Engineering and Technology: Farm, Power and Machinery
5	Biochemical studies on the protective effect of squalene on experimentally induced myocardial infarction in rats	Agricultural Engineering and Technology: Agricultural Processing and Energy
6	Characterization of Drought under Different Agro-climatic Zones of Maharashtra	Agricultural Engineering and Technology: Soil and Water Engineering
7	Classroom teaching behaviour of the university teachers - A study at G.B.Pant University of Agriculture and Technology, Pantnagar	Agricultural Engineering and Technology: Electronics and Communication Engineering
8	Comparative study of micro sprinkler and surface irrigation methods in vegetables and litchi intercropping and evaluation of hydraulic performance of emitting pipes	Agricultural Engineering and Technology: Soil and Water Engineering
9	Computer based development and field evaluation of articulated tillage Machine	Agricultural Engineering and Technology: Farm, Power and Machinery
10	Crop planning under optimal use of canal water in a medium irrigation project Nayagarh district of Orissa	Agricultural Engineering and Technology: Soil and Water Engineering

INDIASTAT.COM

A good-socio economic research is always based on facts and figures. The depth of statistical information renders shape to the entire research exercise. Indiatstat.com is an authentic storehouse for socio-economic statistics about India and its States up to block level. Data is collected, collated and compiled in ready to use format and is made available on-line to the users. Over half a million pages of

statistical data have been qualitatively analyzed, condensed and presented in a user friendly format. Data has been classified in the following categories and further sub-divided into various sub-categories. The data and information on the portal can easily be downloaded or printed in MS-Word/ Excel/ HTML formats on below mentioned categories:

Agriculture	Labour and Workforce
Banks and Financial Institutes	Market Forecast
Civil Supplies & Consumer Affairs	Media
Companies	Meteorological Data
Cooperatives	Mines and Minerals
Economy	Per capita Availability
Education	Petroleum
Electoral Data	Power
Environment and Pollution	Social and Welfare Schemes
Foreign Trade	Sports
Forest and Wildlife	States and Union Territories
Geographical Data	Tele communication
Health	Tourism
Housing	Transport
Industries	Urban Areas
Insurance	Villages

This service is password protected and can be accessed only within Mohinder Singh Randhawa Library of PAU

EBSCO HOST

(<http://search.ebscohost.com>)

EBSCO Information Service provides a complete and optimized research solution comprised of e-journals, e-books, and research databases to support the information needs and maximize the research experience of end user.

Enter any keyword to search for the information available in CAB Abstracts 1990 –present; FSTA- Food Science and Technology Abstracts; e-Book Collection; Business Source Elite; Research Starters- Business; Regional Business News; Entrepreneurial Studies Source; Library, Information Science & Technology Abstracts; Newspaper Source Plus; Teacher Reference Center, Green File, and Web News under ‘Simple Search’ option. Information with the help of Boolean operator can be searched in Advance Search field. An image of simple search from the library link of PAU web page is given below for reference:



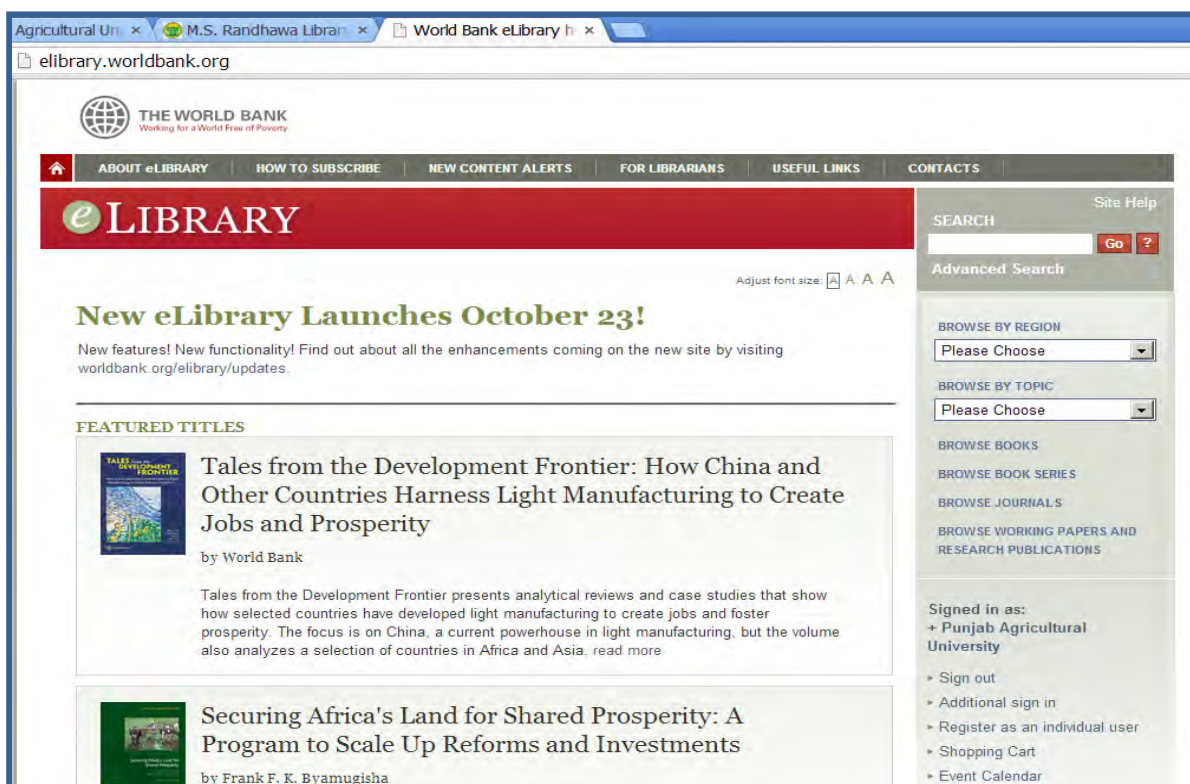
WORLD BANK E-LIBRARY

World Bank e-Library is a subscription based collection of nearly 8,000 books, reports, journals and working papers. This provides access to the information on the following topics:

Agriculture	Finance & Financial Sector Dev.
Communities& Human Settlements	Gender
Conflict and Development	Governance
Education	Health, Nutrition and Population
Energy	Industry
Environment	Information & Communication Tech.

Infrastructure Economics & Finance
 International Economics & Trade
 Law and Development
 Macroeconomic & Economic Growth
 Public Sector Development
 Poverty Reduction
 Private Sector Development

Rural Development
 Science & Techno. Development
 Social Development
 Social Protection and Labor
 Urban Development
 Water Resources
 Water Supply and Sanitation



USE OF INTERNET

Information & Communication Technology (ICT) has made a great impact in every discipline. The availability of scholarly publications through electronic media or Internet has a greater impact on information requirements of the researchers. Technology has changed users' expectations, their patience and their willingness to accept services at its own convenience. With the emerging phenomenon of ICT, the areas of education & research have made significant changes. The by-product of

these technologies is the Internet & World Wide Web (WWW), which is used for different purposes. Internet is being widely used for Education & Research. Internet has become an effective tool for teaching & learning. Its role appears to be of paramount importance especially in the field of knowledge generation. Internet not only offers interesting sites to acquire information, but also provides with tools for acquiring knowledge.

The Internet is a computer network made up of thousands of networks worldwide. No one knows exactly how many computers are connected to the Internet. It is certain, however, that these number in the millions and are growing.

INFORMATION ON THE INTERNET

- The Internet provides access to a wealth of information on countless topics contributed by people throughout the world. On the Internet, a user has access to a wide variety of services: vast information sources, electronic mail, file transfer, interest group membership, interactive collaboration, multimedia displays, and more.
- The Internet is not a library in which all its available items are identified and can be retrieved by a single catalogue. In fact, no one knows how many individual files reside on the Internet. The number runs into a few billion and is growing at a rapid pace.
- The Internet is a self-publishing medium. This means that anyone with little technical skills and access to a host computer can publish on the Internet. Also be aware that the addresses of Internet sites frequently change. Web sites can disappear altogether. Do not expect stability on the Internet.
- One of the most efficient ways of conducting research on the Internet is to use the World Wide Web. Since the Web includes most Internet protocols, it offers access to a great deal of what is available on the Internet.

INFORMATION RETRIEVAL

There is a huge quantity of text, audio, video, and other documents available on the Internet, on about any subject. Users need to be able to find relevant information to satisfy their particular information needs. There are two ways of searching for information: to use a search engines or to browse directories organized by categories (such as Yahoo Directories). There is still a large part of the Internet

that is not accessible (for example private databases and intranets). Information retrieval (IR) is the task of representing, storing, organizing, and offering access to information items. IR is different from data retrieval, which is about finding precise data in databases with a given structure.

STEPS TO FORMULATE QUERIES:

- **IDENTIFY THE CONCEPTS:** Break down the requisite topic into its concepts for searching the database.
- **LIST KEYWORDS FOR EACH CONCEPT:** Once concepts identified, list the keywords describing each concept. Some concepts may have only one keyword, while others may have many.
- **SPECIFY THE LOGICAL RELATIONSHIPS AMONG THE IDENTIFIED KEYWORDS:** After fixing the keywords to be searched, establish the logical relationships among them. The formal name for this exercise is Boolean logic. Boolean logic allows you to specify the relationships among search terms by using any of three logical operators as “and”, “or”, “not”.

SEARCH ENGINES

The Internet is having flood of information on Web (www). All the information is presented in the form of web page and as well as websites. The information is made searchable with the help of various search engines. Search Engine processes, modifies and maintain the information to websites and web pages automatically. Search engines are the best way of information searching. The search engine can also be defined as a full text database of web documents collecting automatically by programming in machine readable language. Some major search engines are: 1) ALTA VISTA 2) GOOGLE 3) BING 4) NORTHERN LIGHT 4) YAHOO etc. Some of the useful web links related to agriculture and life sciences, for reference of the scholars; students; and faculty in agricultural universities, are given as follows:

SOURCE OF INFORMATION**WEB ADDRESS****DICTIONARIES, THESAURI:****LANGUAGE DICTIONARIES:**

Cambridge International Dictionary of Idioms	http://dictionary.cambridge.org/
English to Punjabi Dictionary	http://www.sriganth.org/
Merriam-Webster Collegiate Dictionary	http://www.merriam-webster.com/
Oxford Advanced Learner's Dictionary	http://www.oup.com/

SUBJECT DICTIONARIES:

Dictionary of Cell & Molecular Biology	http://www.mblab.gla.ac.uk/
Medical Dictionary	http://www.nlm.nih.gov/
Roget's Int. Thesaurus of English Words and Phrases	http://www.bartleby.com/110/
Roget's Thesaurus	http://thesaurus.reference.com/
IRRI Rice Thesaurus	agclass.nal.usda.gov

DIGITAL LIBRARIES:

Digital Library of India(1)	http://www.new.dli.ernet.in/
Digital Library of India(2)	http://dli.iiit.ac.in/
Digital Library at the University of Pennsylvania	http://digital.library.upenn.edu/books/
IEEE Computer Society's Digital Library	http://www2.computer.org/
IET(Institution of Engineering and Technology) Digital Library	http://www.ietdl.org/
National Science Digital Library	http://ndsl.org/
Oxford Digital Library	http://www.ouls.ox.ac.uk/eresources/
Traditional Knowledge Digital Library	http://www.tkdlib.res.in/
Universal Digital Library	http://www.ulib.org/

E-Books:

Bartleby: Great Books Online	http://www.bartleby.com/
Digital Book Index	http://www.digitalbookindex.org/
Free Tech Books	http://www.freetechbooks.com/
Google Book Search	http://books.google.com/
Medical Books	http://www.freebooks4doctors.com
Free PDF eBooks Archive	http://www.planetpdf.com/
Project Gutenberg	http://gutenberg.org/
Read Print	http://www.readprint.com/
Wiki-Books	http://en.wikibooks.org/wiki/Main_Page
Agricultural free e-books	http://nsdl.niscair.res.in/
ACM Digital Library	http://portal.acm.org/dl.cfm

E- CONFERENCE ALERTS:

Conference Alerts	http://www.conferencealerts.com/
Conferences and Events	http://www.chemsoc.org/
Google Directory of Conferences	http://directory.google.com/
Directory of Conferences	http://www.allconferences.com/
Conference Database	http://www.netlib.org
UN Conferences and Events	http://www.un.org/

E-DATABASES of AGRICULTURE:

AGNIC	http://www.adec.edu/
Agriculture Network Information Center	http://www.central.agnic.org/
AGRIS	http://agris.fao.org/
AGRIS/CARIS	http://agris.fao.org/
International Database On Insect Disinfestations and Sterilization	http://www-infocris.iaea.org/

E-Thesis:

Vidyanidhi: Indian Theses Database <http://www.vidyanidhi.org.in/>

ENCYCLOPEDIAS:

Columbia Encyclopedia	http://www.bartleby.com/65/
Encyclopedia of Psychology	http://www.psychology.org/
Stanford Encyclopedia of Philosophy	http://plato.stanford.edu/
WebMD	http://www.webmd.com/
Online Encyclopedia of Indian politicians	http://www.newsnetindia.org/

INDIAN REFERENCE SOURCE:

Digital Library of India	http://www.dli.ernet.in/
Five Year Plans	http://planningcommission.nic.in/
GISTNIC (GISTNIC)	http://gist.ap.nic.in/
Gateway to Government of India Info over the web	http://www.indiaimage.nic.in/
Govt. of India: Directory of Educational Institutions	http://goidirectory.nic.in/education.html
Indian Presidents, Prime Ministers	http://www.webindia123.com/
Internet Indian History Sourcebook	http://www.fordham.edu/

MISCELLANEOUS:

Nobel Prize Internet Archive	http://nobelchannel.com/
Nobel Prize Winners	http://www.almaz.com/

OPEN SMT & BIOMEDICAL ENGINEERING JOURNALS:

BMC Veterinary Research	http://www.biomedcentral.com/
Saudi Journal of Gastroenterology	http://www.saudijgastro.com/
Gastroenterology Research and Practice	http://www.hindawi.com/journals/grp/

Bio geo-science	http://www.biogeosciences.net/
Turkish Journal of Biochemistry	http://www.turkjbiochem.com/

PORTALS FOR OPEN ACCESS JOURNALS:

Directory of Open Access Journals	http://www.doaj.org/
Electronic Journals Library	http://rzblx1.uni-regensburg.de/
Free Full-Text Journals in Chemistry	http://abc-chemistry.org/
Free Medical Journals	http://www.freemedicaljournals.com/
UNESCO Social & Human Sciences Online Periodicals	http://www.unesco.org/
A Free Archives of Life Sciences journals	http://www.ncbi.nlm.nih.gov
Free Access to Developing Journals	http://highwire.stanford.edu

SOURCES OF EDUCATIONAL INFORMATION:

All India Council for Technical Education (AICTE)	http://www.aicte.ernet.in/
Association of Indian Universities	http://www.aiuweb.org/
Association of Commonwealth Universities(AICU)	http://www.acu.ac.uk/
Educational Profile of Indian States & Union Territories	http://education.nic.in/htmlweb/stateedu profile.htm
Educational Scholarships	http://education.nic.in/htmlweb/scho.htm
Educational Statistics	http://education.nic.in/
Google Directory for Indian Education	http://directory.google.com/Top/Regional/Asia/India/Education/
Higher Education in India	http://education.nic.in/
International Association of Universities(IAU)	http://www.unesco.org/iau/index.html
National Policy on Education (NPE)	http://education.nic.in/
Sources of Funding for International Students - Education	http://www.britishcouncil.org/education/funding/

Study Abroad	http://www.studyabroad.com/
Technical Education in India	http://education.nic.in/
UNESCO	http://www.unesco.org/
University Grants Commission (UGC)	http://www.ugc.ac.in/

SOURCES OF GEOGRAPHICAL INFORMATION:

City Population	http://www.citypopulation.de/
Geography	http://www.citypopulation.de/
Global Gazetteer	http://www.calle.com/world/
Imperial Gazetteer of India	http://dsal.uchicago.edu/
Imperial Gazetteer of India (Maps)	http://dsal.uchicago.edu/maps/gazetteer/
Indian Historical Maps	http://www.geocities.com/
Geographical Data	http://bubl.ac.uk/
Maps and GIS sources on the World	http://www.albany.edu/
Maps of India	http://www.mapsofindia.com/
Population Reference Bureau	http://www.prb.org/
Thesaurus of Geographic Names	http://www.getty.edu/
World Atlas	http://www.worldatlas.com/
World Flag Database	http://www.flags.net/
World Gazetteer	http://www.world-gazetteer.com/

SOURCES OF STATISTICAL INFORMATION:

Census of India	http://www.censusindia.net/
Asian Development Bank	http://www.adb.org/
Demographic and Health Surveys	http://www.measuredhs.com/
Human Development Resource Centre	http://hdr.undp.org.in/
International Monetary Fund	http://www.imf.org/
International Statistical yearbooks	http://www.nypl.org/
National Family Health Survey (NFHS), India	http://nfhsindia.org/index.html

Manual –Ministry of Statistics and Programme Implementation, Govt. of India	www.mospi.gov.in
Reserve Bank of India	http://www.rbi.org.in/
UNICEF Statistical Data	http://www.unicef.org/statis/
WHO Statistical Information System (WHOSIS)	http://www3.who.int/whosis/menu.cfm
World Bank Data & Statistics	http://www.worldbank.org/data/

STANDARDS AND PATENTS:

Bureau of Indian Standards(BIS)	http://www.bis.org.in/
Current Awareness Services: Patents & Standards	http://www.is.bham.ac.uk/current/patents.htm
European Patent Office(EPO)	http://ep.espacenet.com/
Google Directory of Standards	http://directory.google.com/
Indian Patents Database	http://pk2id.delhi.nic.in/
Patents & Standards	http://www.lib.polyu.edu.hk/
United States Patents (USPTO)	http://www.uspto.gov/

YEARBOOKS, ALMANACS, HANDBOOKS:

Union Budget & Economic Survey	http://indiabudget.nic.in/
Guinness Book of World Records	http://www.guinnessworldrecords.com/
Human Development Reports	http://hdr.undp.org/reports/
Sipri Yearbook	http://editors.sipri.se/pubs/yearb.html

MOHINDER SINGH RANDHAWA LIBRARY, PAU

GUIDE MAP to PUBLIC UTILITY AREAS

BASIC FACTS AT A GLANCE:

- Present Library in Operation : since 1972
- Seating capacity in Reading Halls : 760
- Seating Capacity in Auditorium : 70
- Number of Floors : 5 (First three floors are centrally air-conditioned)
- Number of Research Carrels : 19
- Working days in a year : 362
- Active Users as on 30-09-2013 : 3164
- Collection as on 30th September 2013
 - Books : 2,46,526
 - Theses : 36,795
 - Bound Periodicals : 1,03,382
 - E-Documents : 2,933
 - Online Databases : 13
 - Journals
 - Subscribed : 185
 - Gratis : 16
 - Online Access : 31,593
- Web Address : www.pau.edu/msrlibrary/

GROUND FLOOR

- **Circulation Section**
 - Property Counter
 - Check Counter
 - Issue and Return Counter
 - Membership Registration Office
- **PAU Archives**
- **Multimedia Room**
- **Museum of History of Life and Agriculture**
- **Hall of Fame**
- **Dr Randhawa Section**
- **Map Room**
- **Periodical Section**

- Acquisition Section
- Classification & Cataloguing Section
- Bindery
- Auditorium
- Lavatory

FIRST FLOOR

- Online Public Access Catalogue (OPAC)
- Reference Service Desk
- Digital Library
- Current Periodicals
- Reference Section (*Reference Books and Bound Periodicals after 2000*)
- Text Books Section
- Competitive Book Section
- Rare Books Section
- Reading Halls
- University Librarian's Chamber
- Lavatory

SECOND FLOOR

- General Books on Science & Technology (*Class Nos. 500 and 600*)
- Research Carrels
- Lavatory

THIRD FLOOR

- Online Public Access Catalogue
- Reference Service Desk
- General Books on Social Sciences (*Class Nos. 000 to 400, 700-900*)
- Abstracting & Indexing Journals (*after 2000*)
- Theses Section
- Reading Halls
- Research Carrels
- Lavatory

FOURTH FLOOR

- Bound Periodicals (*before 2000*)
- Bhai Randhir Singh Section (*Punjabi/Hindi/Urdu books*)

Sample Paper

MOHINDER SINGH RANDHAWA LIBRARY

Mid – Semester Examination (PGS 501)

Time : 45 min.

Max. Marks : 15

Note: Attempt any THREE of the following
All questions carry equal marks

- Q. 1. Name and discuss Five Laws of Library Science given by Dr S. R. Ranganathan
- Q. 2. Give subject name to following notational class numbers taken from Dewey Decimal Classification (DDC) scheme:
- a) 500 b) 650 c) 630 d) 580 e) 800
- Q. 3. Name and discuss any five Library Services provided in PAU.
- Q. 4. Which of the following is meant for bringing together the related documents of same subject at one place? Explain.
- a) Classification b) Indexing c) Cataloguing d) Documentation
- Q. 5. What do you know about Catalogue? Discuss Online Public Access Catalogue (OPAC)
- Q. 6. Enumerate any five suggestions for betterment of Library Services in PAU.

Sample Paper

MOHINDER SINGH RANDHAWA LIBRARY

End of Semester Examination (PGS 501)

Time : One Hour

Max. Marks : 25

Note: Attempt any FIVE of the following
All questions carry equal marks

- Q. 1. Name and discuss any five library services provided in PAU Library in consonance with five fundamental Laws of Library Science propounded by Dr S. R. Ranganathan
- Q. 2. Explain Consortium of e-Resources in Agriculture (CeRA)
- Q. 3. Name and discuss Search Fields provided in Online Public Access Catalogue (OPAC).
- Q. 4. Discuss use of internet in Research & Development
- Q. 5. What are the uses of Catalogue? Discuss Online Public Access Catalogue.
- Q. 6. Discuss online services available on PAU Webpage under M. S. R. Library link.
- Q. 7. Discuss Secondary Sources of Information giving examples.
- Q. 8. Explain organization of documents in a library.
- Q. 9. What do you know about Current Awareness Services in a library?
- Q. 10. Explain ways of tracing information from reference sources.

Suggested Readings:

1. Narula, Kanwal (2011): Library – A gateway to knowledge. PAU Ludhiana
2. Narula, Kanwal N. (2006): Quality Manual – Review of management and staff manual of Mohinder Singh Randhawa Library. PAU Ludhiana
3. Narula, Kanwal N. (2010): Introduction to Mohinder Singh Randhawa Library. PAU Ludhiana
4. Gates, Jean Key: Guide to the use of books and libraries. McGraw Hill New York
5. Ranganathan, S.R. (1957): Five laws of library science. Bombay: Asia Publishing
6. Kaushik, P. (2006): Library and information technology. Anmol , New Delhi
7. Kumar, P.S.G. (1998): Fundamentals of information science. S. Chand, New Delhi.
8. Prasher, R.G. (1991): Information and communication. New Delhi: Medallion Press
9. Ranganathan, S.R. (1989): Elements of library classification. Sharda Ranganathan Endowment for Library Science, Bangalore
10. Khan, M.T.M. (2005): Dewey Decimal Classification. New Delhi: Shree Pub.
11. Raju, A.A.N.(1995): Dewey Decimal Classification: Theory and Practice : A Practical Self Instructional Manual, Madras : T.R. Pub.
12. Satija, M.P. and Comaromi, John P., Introduction to the Practice of DDC, New Delhi, Sterling
13. Khan, M.A. (1997): Cataloguing in library services. New Delhi, Sarup pub.
14. Krishan Gopal (2000): Library online cataloguing in digital way. Delhi, Authors press.
15. Krishan Kumar (1996): Reference Service. Delhi, Vikas.
16. Ranganathan, S.R. (1961): Reference service. Bombay, Asia Pub. House.
17. Sewa Singh (2004): Manual of Reference and Information Sources. Delhi: B.R.Pub.
18. Sharma, Jagdish Saran and Grover D.R. (1987): Reference service and source of information. New Delhi, Ess Ess Pub.

**TECHNICAL WRITING
COMMUNICATION SKILLS;
LIBRARY AND INFORMATION SERVICES
(PGS 501)**

(The Academic Council, PAU took a decision in its 321st meeting held on 09-08-2010 at Sr. No. 14, Item No. B-6 as conveyed vide Registrar, PAU Ludhiana's office endst No. Acad.IAU.2010/F-369/26855-65 dated 11th August 2010 that the course PGS 501 will be listed in the Department of Agricultural Journalism, Languages & Culture and will be offered jointly with the University Library.)

COURSE OUTLINE

LIBRARY AND INFORMATION SERVICES

- Introduction to library and its services;
- Five Laws of Library Science;
- Type of Documents;
- Classification and Cataloguing of Documents;
- Organization of Documents in a Library;
- Sources of Information – Primary, Secondary and Tertiary;
- Current Awareness and SDI Services;
- Tracing Information from Reference Sources;
- Library Survey;
- Preparation of Bibliography;
- Use of Online Public Access Catalogue;
- Use of CD-ROM databases & other computerized library services;
- Consortium of e-Resources in Agriculture (CeRA);
- J-Gate Plus;
- Use of Internet including search engines and its resources;
- E-resources and its access methods.