

WEB BASED INFORMATION SERVICES

Course Code: P18 MLS14A

Course Material for Master of Library and Information Science

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(A) WEB BASED INFORMATION SERVICES

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Objectives:

To help the students become familiar with a wide range of online web based services.

Unit-I

Web OPAC, Mobile OPAC; Multi Web OPAC: OCLC
Information Alert; Online Display, E-Mail, and Mobile Casting.

Unit-II

Access to E-Books, E-Journal, ETD, Bibliographic Databases and online Coursewares

Unit-III

Compilation of Citation Profile: Impact factor, Citation, H-Index;
Research Information System; Profile Management System; Subject Expert System

Unit-IV

Reference Management System: Mendeley, Endnote, Reference work etc.

Unit-V

Discussion Forum; Group mail, and online Feedback: Web Blog, Website
Online SDI,

Unit-VI

Advancement study on Webinar, Web OPAC, RSS Feeds, Group mail

Selected readings:-

1. Balas, Janet L. A Librarian's Work will never be done. Computer in Libraries. 19; 10,1999. 46-50p.
2. Das, Suchitra. Information Resources on Internet and Information Services in Library and Information Centers. SRELS Journals of Information Management. 37; 1, 2000. 49p
3. Green, Elisabeth and Head, Allison J. Web-based cataloguing. Online.22; 4, 1998. 98p.
4. Hartzler, Sandra., Paterson, Brian., Snyman, Dorette. Web Information Services at the University of South Africa Library. Library Trends. 47; 1,1998. 91-116p.
5. <http://bulldog.unca.edu/~greene/webservices.html>

UNIT-I

Web OPAC, Mobile OPAC; Multi Web OPAC: OCLC
Information Alert; Online Display, E-Mail, and Mobile Casting.

Web OPAC

Web OPAC is the Online Public Access Catalogue which allows users avail the services of the library using Internet.

The concept of Web OPACs is recent origin and it is serving as a gateway to the resources not only held by the respective library but also to the holdings of other participating libraries without to local collection but going, beyond further to regional , national, international levels.

It allows users to interact with documents stored on computers all over the world and makes easier access to catalogue data in the form of bibliographic records.

DEFINITION OF WEB OPAC

Dr. S. R. Ranganathan has defined the term library catalogue as a list of the documents in a library or in a collection forming a portion of it.

DEFINITIONS OF OPAC

ALA Glossary defines OPAC as, "A Computer based and supported library catalog (bibliographic database) designed to be accessed via terminals so that library users may directly and effectively search for and retrieve bibliographic records without the assistance of a human intermediary such as specially trained member of the library staff

According to Washington University in St. Louis, "A Web OPAC interfaces, which uses the World Wide Web protocol to act as an OPAC." Simply stated, A Web OPAC is a library catalog on the Web or Internet. Users can search the required information by connecting to Uniform Resource Locator (URL) of Web OPAC anytime during the day and from anywhere in the world.

According to Online Dictionary for Library and Information Science defined as: "An Online Public Access public catalogue (OPAC) that uses a graphical user interface (GUI) accessible via the World Wide Web, as opposed to a text based interface accessible via telnet".

Features of WEB OPAC:

The important features of Web OPACs are:

1. It is accessible through internet.
2. It is possible to search independently by Author, Keyword, Title or Year.
3. Displays complete bibliographic information as appeared on reprints.
4. Features of traditional OPACs such as storing bibliographic and sometimes full text databases; providing direct access to a library's bibliographic database by means of terminal or PC; search result in readily understandable form; reference help, etc.
5. It has ability to use hypertext links to facilities navigation through bibliographic records.
6. Linking to full text when available is there.

Features of Web OPAC • It is accessible through Internet, • It is possible to search independently by "Author", by "Keyword" in title or "Year ", • Combination of search keys - as Author + Year, or Keyword + Year is possible, • Wildcard search for year is possible

SEARCHING FEATURES • Types of searches- a)Simple. b)Advanced. • Full search capability on conventional access points- Title, Keyword anywhere, Keyword (using and, or, not), Publisher name, Publish place, Publish date, Series, Author or editor or organization, Subject, Class number (or call number), ISBN/ISSN, Theses, Notes, Abstract, Table of contents

Provision for Boolean search

- Provision for truncation
- Provision for exact matching
- Provision for phrase searching
- Word proximity operators
- Provision for field directed searching
- Multimedia searching
- The user can start a search anywhere

- The user can select return to a previous screen and change a selection
- Search for new items
- Language translation • Related items

1. Hypertext links in full bibliographic record display: (a) Authors (b) Subject (c) Call number (d) Series (e) Location map
2. Provision of browsing capabilities (a) Browsing by authors (b) Browsing by subjects (c) Browsing by series (d) Browsing by publishers (e) Browsing by call number (f) Browsing for new titles (g) Browsing by type (h) Browsing by title
3. Provision for single search interface • Meta search functionality • Provision for a visual map • Course reserves • Faceted navigation ability • Thesaurus search
4. ACCESS POINTS • Author • Keyword in author • Title • Keyword in the title • Subject heading • Keyword in subject heading • Publisher • Class number
5. ISBN/ISSN • LCCN • Series • Barcode number • Provides name authority control • Provides subject authority control • Supports cross-references • Provision for the copy location • Notes/Abstract

Infrastructural Needs of Web OPAC

The Web OPAC essentially implies the availability of the following three things: •Web Technology: it covers HTML, ASP, XML Web server programming etc. •Computer Networking Technology: it includes LAN, WAN, Internet, and Intranet. •Computer Readable Catalogue: any type of database accessible through computer

Advantages of WEB OPAC:

Following are the advantages of the Web OPACs:

It is world wide and all the time accessible.

The status of any book may be known as book issue or not etc. the status of an acquisition order may be available at both staff and public terminals located throughout the library.

It is possible for users to send reprint requests immediately by e-mail.

It is world wide and all the time accessible

The status of any book may be known as book issued or not, lost/transferred, etc. The status of an acquisition order may be available at both staff and public terminals located throughout the library

It is possible for users to send reprint requests immediately by e-mail

There is no limitation of space and time for searches of any documents. Any person can search a document of not only his/her library but also any networked library

Updating can be done quickly,

Importing bibliographic records from the Web OPAC and online bibliographic databases helps the libraries to catalogue the documents in a standardized way. It reduces typing errors, costs and time involved for the cataloging. The cataloguer only requires minimal professional skills, to manage the records according to local variations

Disadvantages of the WEB OPAC:

Some of the disadvantages of web OPAC are:

- I. Some web OPACs, even though the link is available on the web page or the telnet address is given are restricted to a particular user community and requires the use of appropriate login names and passwords;
2. Some web OPACs do not provide links through authors or subjects;
3. Displays in most of the web OPACs failed to provide access to online help and;
4. Some of the web OPACs do not display the database being searched and call number.

Mobile OPAC

M-OPAC allows user to search a book from any registered colleges / Institutes libraries.

- M-OPAC app display consolidated library data at a glance.
- User can search books by different tags like : Title, Author, Publisher, Subject and Keywords.
- User would be able to see information regarding the book like Author, Publishers, Publish year, Accession numbers with Series code, ISBN, Call No (Classification Number + Book Number), Quantity of Book/
- M-OPAC allows access to registered users as well as unregistered (guest users).

- Guest user can register by following simple registration procedure, to get full access of M-OPAC.

Features Of M-OPAC

The new mobile features allow a student to take action on and manage key processes through a native, secure, Smartphone application. These features will allow students with their mobile device to:

- In single click patron can search desired book across all registered libraries.
- M-OPAC is a tool which consolidated library data at single place, across different colleges.
- Patron can search books by Title, Author, Publisher, Subject and Keywords.
- Patron can see the information of a book in particular college like Author, Publishers, Publish year, Accession numbers with Series code, ISBN, Call No (Classification Number + Book Number), Quantity of book.
- M-OPAC mobile app always asks for registration, registration process is performed single time and provide more facilities of M-OPAC. M-OPAC is also worked for Guest Users
- Patron can find a rare book available in across registered colleges.
- Patron can search book available in single college.
- Patron can search books in available local language like Devnagari, Tamil, etc. (Unicode compatible).
- Patron can send a request to librarian for a book and able to check request status.
- Patron can do quick searching and save time in library.
- Online Book reservation facility library users.

Online Computer Library Center

It was founded in 1967 as the **Ohio College Library Center**, then became the **Online Computer Library Center** as it expanded. In 2017, the name was formally changed to OCLC, Inc.^[3] OCLC and its member libraries cooperatively produce and maintain WorldCat, the largest online public access catalog (OPAC) in the world.^[5] OCLC is funded mainly by the fees that libraries pay (around \$200 million annually in total as of 2016) for the many different services it offers.^[1] OCLC also maintains the Dewey Decimal Classification system.

OCLC Services

OCLC provides [bibliographic](#), [abstract](#) and full-text information to anyone.

OCLC and its member libraries cooperatively produce and maintain [WorldCat](#)—the OCLC Online Union Catalog, the largest [online public access catalog](#) (OPAC) in the world.^[5] WorldCat has holding records from public and private libraries worldwide.

The Online Computer Library Center acquired the trademark and copyrights associated with the [Dewey Decimal Classification](#) System when it bought Forest Press in 1988. A browser^[10] for books with their Dewey Decimal Classifications was available until July 2013; it was replaced by the Classify Service.

Until August 2009, when it was sold to Backstage Library Works, OCLC owned a preservation microfilm and digitization operation called the OCLC Preservation Service Center,^[11] with its principal office in [Bethlehem, Pennsylvania](#).

Starting in 1971, OCLC produced [catalog cards](#) for members alongside its shared online catalog; the company printed its last catalog cards on October 1, 2015.^[12]

Information Alert

publishers that allow to be notified by email or text message when something of interest to library or user has been added. to a database or published about newly published resources on a specific topic or when new articles are published.

What is an Alert Service?

An alert service is a type of user account in a database that automatically sends email notifications for new citations or tables of contents. The names (alert, autoalert, favorites) and the procedures for setting up these services vary among vendors, but they generally operate in the same way:

You specify the search terms or the journal titles and the database automatically provides you with updated results via email.

For some alert services you must register with a password and establish a profile or personal account; for others you simply provide your email address. Some alert services limit the number of searches you can save. In many databases you can define how often a search is run

Many databases have services which help you stay up-to-date in your field, or alert you to new publications of interest. Most alert services are sent as email, but some are now offered as **RSS feeds**. If you need more information please see the '**RSS Tutorial for Content and Webmasters**'.

There are different kinds of alert services:

- **Table of Contents Alert (TOC)** automatically e-mails you the latest table of contents for your selected journals.
- **Saved Search** permits you to re-run a successful search at a later date to collect relevant results added since the last time you ran the search.
- **Search Alert (SDI)** is a saved search that runs automatically whenever the database is updated and automatically e-mails you the results.

- **Citation Alert** With a citation alert you receive an e-mail alert each time an article on your list is cited in a new article.
- **Personalized Services** are creatively customized database services which allow users to organize and manage databases for their personal interests and needs. Under the scope of these services, there is the user's profile or personal account, including search history and user preferences and the information collected through the search behavior. Through the use of these services, the users are able to set-up, review and edit their alerts & saved searches, marked lists, free trials, newsletters, subscriptions and any research items they have submitted. The personalized services give users the chance to have privacy during their searches. They are helpful for the users to improve their experience of using databases.
- **RSS Feeds** (or "Really Simple Syndication") is a way to share and receive information using XML (Extensible Markup Language). A Database that wants to allow other sites to publish some of its content creates an RSS document and registers the document with an RSS publisher.

E-Mail Service

online email service providers enable users to send, receive and review e-mail from their Web browsers. Email services offer easy access and storage of e-mail messages for users who are not connected to the Internet from their usual location.

When logging into an email service, users simply enter the Webmail Web site URL in their browser's address or location field, and use their Webmail account by typing in a username and password. Instead of the e-mail being downloaded to the computer used for checking the e-mail account from, the messages will stay on the provider's server, allowing the user to access all their e-mail messages regardless of what system or ISP is being used.

Email services offer many of the same features and functionality for managing e-mail as desktop email software counterparts like Microsoft Outlook and Mozilla Thunderbird. Some of the more popular online email services are Yahoo! Mail, Gmail, Hotmail and AOL Mail.

Best Free Email Accounts

- Gmail.
- Outlook.
- Zoho.
- Mail.com.
- Yahoo! Mail.
- ProtonMail.
- iCloud Mail.

UNIT-II

Access to E-Books, E-Journal, ETD, Bibliographic Databases and online Coursewares

E-Books

An eBook is an *electronic* version of a traditional print book that can be read by using a personal computer or by using an eBook reader. (An eBook reader can be a software application for use on a computer, such as Microsoft's free *Reader* application, or a book-sized computer that is used solely as a reading device.

Although it is not necessary to use a reader application or device in order to read an Ebook (most books can be read as PDF files), they are popular because they enable options similar to those of a paper book - readers can bookmark pages, make notes, highlight passages, and save selected text. In addition to these familiar possibilities, eBook readers also include built-in dictionaries, and alterable font sizes and styles.

Some eBooks can be downloaded for free or at reduced cost, however, prices for many eBooks - especially bestsellers - are similar to those of hardcover books, and are sometimes higher. Most eBooks at Barnes and Noble, for example, are comparable in price to their traditional print versions.

Advantages of eBooks over Printed Books:

1. One Device, Many Books:

eBooks are portable and lightweight, making it easy to carry around. Instead of carrying multiple bulky books, one eBook reader can hold thousands of eBooks. It saves a lot of space- in your home and in your bag. One doesn't have to worry about the storage limit.

A single device is enough to read any number of books you want. Students benefit the most out of it as they do not have to carry a bag full of books every day. It allows the user to store plenty of books on the device, way more than anyone can read in their lifetime.

2. Accessible Everywhere:

eBooks can be downloaded and stored for later use. One can carry the eBook around and read them whenever they want. Students and employees can go through the learning material while at home and even while travelling. It is convenient for people on the go. Some eReaders

come with the option of offline accessibility, allowing people to use it even in the absence of an internet connection.

Unlike printed books which have to be ordered or purchased from the bookstore, with time lost in waiting for delivery or travelling to the bookstore; readers can easily access any eBook anytime and anywhere.

3. Easily Updates:

The contents on the eBooks are mostly cloud-based, meaning it can be updated any time. Authors and publishers can always add the up-to-date information, providing users with the latest digital content. This saves reprinting costs and the time involved in the process.

4. Shareable Content:

You can share the eBook contents with multiple users. The social feature on the ebook allows sharing and liking of content, which is not possible with printed books.

You might share a printed book with one person at a time, but an eBook can be shared with many people at once. Students and employees can use this feature to collaborate with their peers.

5. Augmented Reality Experience:

Augmented reality has taken the eBook experience to a whole new level. Texts and images can now be embedded with an augmented three-dimensional visual which pops up on the user's screen. Readers can view a computer-generated 3D model of the image, which makes reading and learning a much more immersive experience.

The user only has to point the device at the image or text, and an enhanced version of the image will be displayed on their screen.

Many educational institutes and organizations are adopting this technology into their eBooks to enhance user experience.

6. Easy on the Eyes:

eReaders these days come with features where you can adjust the brightness of the screen according to the time of the day and depending upon your preferences.

Many eReaders even have read in the dark feature, with lights that won't strain your eyes, and neither would they disturb others around you. Users can even change the fonts of the text. They can increase or decrease the size of the font. Basically, eBooks ensure that your eyes are taken care of.

7. Read Aloud Feature:

eBooks have been designed with text to speech or read aloud features. This allows people to listen to the eBooks if they are too busy to read it, for example, while driving, or while doing some chores.

This feature is also helpful for children and adults with a learning disability or with visual impairment. It is also useful to help the user understand how a particular word is pronounced.

8. Interactive Elements:

Including interactive features in an eBook makes the reading experience a more engaging one. eBooks can be embedded with audio and videos. External links can be included to offer additional information.

The user can even bookmark a certain page or find a word in a quick and effortless way. It also allows users to make annotations. There are multiple such interactive features which can be included in order to enhance the overall reading experience.

9. Environment Friendly Option:

eBooks are environment-friendly. It totally eliminates the paper printing process, saving printing cost for the publishers. Approximately 2.2 million books are published each year, using around 3 million trees.

If these paper printed books were to be replaced with a digital eBook, it could save all those trees from being chopped down. Apart from cutting trees, it also adds to the carbon footprint by transporting the raw materials, production process in the mill, and the final shipping.

All these processes can be eliminated with the help of eBooks. Thus, eBooks are better for the environment as a whole.

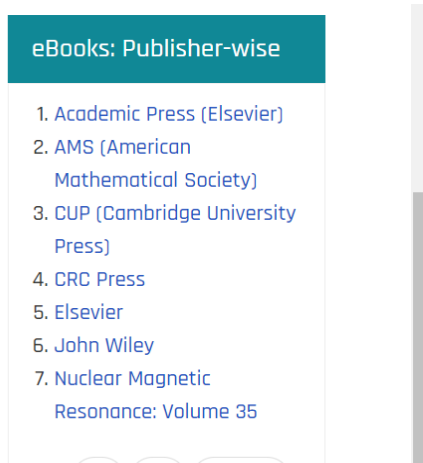
10. Affordable in the Long Run:

Some people might feel that since it's a new technology and new device, the cost obviously would be higher than that of printed books. But, it's quite the opposite. eBooks cost much less than printed books. Because there's not much of pre-production involved like that in printed books.

No paperback covers, no paper printing, no packaging cost, no shipping. So eventually it becomes much cheaper than a printed book. So instead of spending on printed books, one can actually save money by investing in eBooks. eBooks are hence easy on the pockets.

E-Book Titles

IISc has perpetual access to several E-Book collections from the leading publishers like the American Mathematical Society, Cambridge University Press, Elsevier, Oxford University Press, Springer, John Wiley etc. These collections are presented here in the alphabetical order of the E-Book titles. You may click on any of the alphabets listed below to view the listing of the titles for that alphabet, and then click on the specific E-Book title to access it online. Kindly note, systematic downloading of E-Books will amount to infringement of license agreement and, it may result in temporary access blockade



E-Journals

An electronic journal is a periodical publication which is published in electronic format, usually on the Internet.

Electronic journals have several **advantages** over traditional printed journals:

- You can **search the contents pages** and/or the full text of journals to find articles on a certain subject.
- You can read journal **articles on your desktop**, you don't have to be in the Library.
- You can **e-mail articles to yourself** or **download them for printing**.
- The article that you want to read will **always be available**, even when the Library is closed.
- **Hypertext** links allow you to move to different sections within individual journals or articles and can link you to related resources on the Internet.
- Journals can include more **images and audio-visual material**.
- Journals can be **interactive** - you can e-mail the author or editor with your comments.

The screenshot shows a web browser window with the address bar displaying 'ess.inflibnet.ac.in/fulltext.php'. The main content area contains a table listing various electronic journals and their availability across different institutions. The table has three columns: the journal name, the number of institutions providing access, and the number of journals available. Each row also includes a 'more' link for additional information.

• ASCE Journals Online	109 Institutions	36 Journals	
ASME Journals Online (http://asmedigitalcollection.asme.org/)			more
• ASME Journals Online	130 Institutions	29 Journals	
Bentham Science (https://benthamscience.com/)			more
• Bentham Pharmacy (AICTE)	10 Institutions	23 Journals	
Economic & Political Weekly (http://epw.in/)			more
• Economic & Political Weekly	201 Institutions	1 Journals	
JSTOR (http://www.jstor.org/)			more
• JSTOR	209 Institutions	3165 Journals	
Oxford University Press (https://academic.oup.com/journals)			more
• Oxford University Press	163 Institutions	262 Journals	
Project Muse (http://muse.jhu.edu/)			more
• Project Muse	101 Institutions	676 Journals	
Springer Link (http://link.springer.com/)			more
• Springer Link 1700 Collection and Nature Journal	200 Institutions	1724 Journals	
Taylor and Francis (http://www.tandfonline.com/)			more
• Taylor and Francis	129 Institutions	1078 Journals	

Electronic Theses & Dissertations

An ETD (Electronic Thesis or Dissertation) is a digital document suitable for machine archives and worldwide access. It may incorporate such features as enhanced graphics, sound, and animation. In addition, ETDs enable users to perform comprehensive searches using words, phrases, or symbols.

The Benefits of ETDs

Theses and dissertations provide tangible evidence of the scholarly development of students and their ability to effectively communicate research findings. ETDs enable graduate students to effectively and creatively present their research. Some of the specific benefits of the electronic submission and archiving of theses and dissertations include:

- **Availability:** Research presented in theses or dissertations is accessible to scholars all over the world via the World Wide Web. Potential employers may also more easily view these documents.
- **Multimedia Integration:** The message of a thesis or dissertation may be better conveyed in an electronic document as opposed to a paper document. Creative possibilities are expanded by integrating color diagrams, color images, hypertext links, audio, video, animation, spreadsheets, databases, simulations, etc. into the document.
- **Digital Research Skills:** By preparing a thesis or dissertation and submitting it electronically, one can learn about electronic

document preparation and digital libraries. These skills can help prepare for future roles in the information age, whether in teaching, conducting research, or using the research results of others.

- **Improves Library Service:** Electronic submissions allow the University to fulfill its responsibilities of recording and archiving theses and dissertations more economically. This is a key responsibility of the University library and is easier and less costly when the work flow involves electronic documents. ETDs reduce the need for library storage space and advance digital library technology, thus, improving library services.

ETDs in India

Electronic theses and dissertations contribute considerably to the scholarly knowledge bank and constitute a pivotal segment of research literature.

University Grants Commission (UGC) Policy regarding ETDs

UGC India has mandated electronic submission of PhD Theses via the UGC Minimum Standards and Procedure for the award of M.Phil/Ph.D. degree) Regulation 2009. According to this regulation, all universities are required to submit a soft copy of MPhil/PhD Thesis to the UGC, within a period of 30 days from announcement of the award of degree, for hosting in the central repository Shodhganga.

Indian Universities are now aggressively working on digitization of theses and dissertations. And most of the universities have now also started collecting digital copies i.e ETDs.

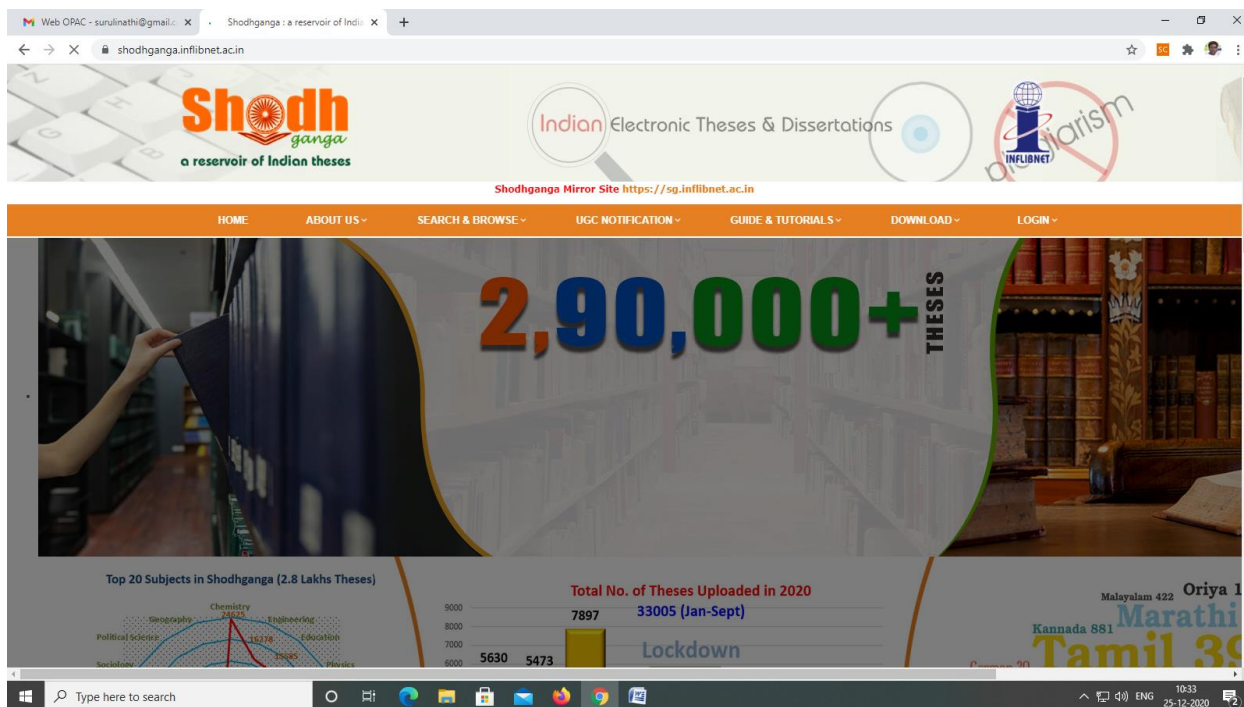
Shodhganga ETD

"Shodhganga" is the name coined to denote digital repository of Indian Electronic Theses and Dissertations set-up by the INFLIBNET Centre. The word "Shodh" originates from Sanskrit and stands for research and discovery. The "Ganga" is the largest and longest of all rivers in Indian subcontinent. The Ganga is the symbol of India's age-long culture and civilisation. Shodhganga stands for the reservoir of Indian intellectual output stored in a repository.

The Shodhganga@INFLIBNET is set-up using an open source digital repository software DSpace developed by MIT (Massachusetts Institute of Technology) in partnership between Hewlett-Packard (HP).

Shodhganga provides a platform for research scholars to deposit their Ph.D. theses and make it available to the entire scholarly

community in open access. The repository has the ability to capture, index, store, disseminate and preserve ETDs (Electronic Theses and Dissertations) submitted by the researchers.



Universities in India are also focussing on the issues of plagiarism in research. Many workshops and reference management tools trainings have been organised by various Universities in India.

The current status of Shodhganga -e-thesis repository is as follows:

- 217 Universities signed MoU
- 219 Universities contributed
- 40,136 theses;
- 1,978 synopses;

Top 40 contributing Universities:

- Jawaharlal Nehru University [4581]
- Anna University [2875]
- Mahatma Gandhi University [2037]
- Bundelkhand University [1771]
- Chaudhary Charan Singh University [1528]
- Dr. Harisingh Gour Vishwavidhyalay [1495]
- Cochin University of Science & Technology [1438]
- Pt. Ravishankar Shukla University [1055]

- Pondicherry University [782]
- Periyar University [779]
- University of Hyderabad [718]
- Manonmaniam Sundaranar University [695]
- Bharathidasan University [686]
- Aligarh Muslim University [637]
- University of Calicut [592]
- Gujarat University [586]
- Sardar Patel University [581]
- Shri Jagdishprasad Jhabarmal Tibarewala University [537]
- University of Delhi [519]
- Goa University [516]
- Saurashtra University [501]
- Bharathiar University [482]
- University of Mysore [480]
- Guru Nanak Dev University [454]
- Punjabi University [438]
- Maharshi Dayanand University [421]
- Acharya Nagarjuna University [401]
- Jamia Hamdard University [391]
- Jawaharlal Nehru Technological University, Hyderabad [373]
- Kumaun University [367]
- Shivaji University [364]
- Manipur University [361]
- University of Kashmir [344]
- Maharaja Sayajirao University of Baroda [339]
- Sant Gadge Baba Amravati University [297]
- University of Pune [291]
- Gauhati University [268]
- Kurukshetra University [268]
- Tilak Maharashtra Vidyapeeth [263]
- Andhra University [243]

ETD initiative by Universities/Institutions in India

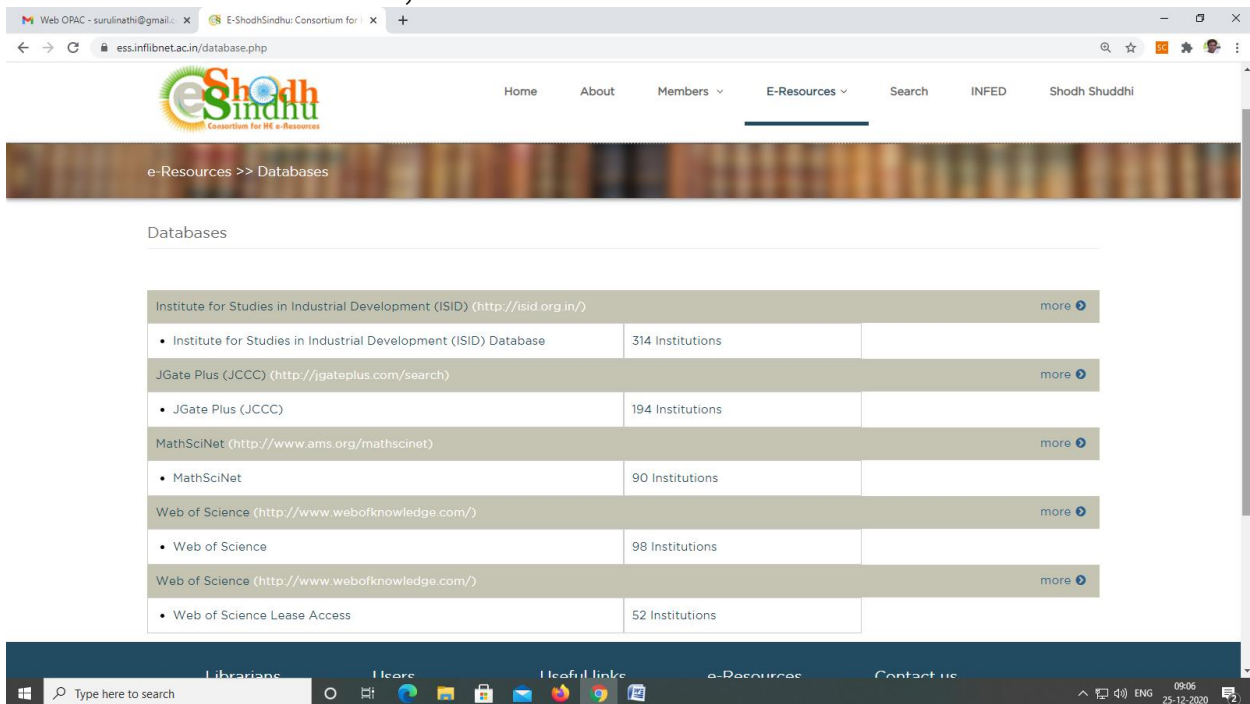
Many Universities and institutions in India have taken individual initiatives towards setting up ETD Repositories like **ETD@IISc, Vidyaniidhi - University of Mysore, Eprint@IIT Delhi, etc. Besides, many collaborative initiatives have also been taken by many institutions like KrishiPrabha - Indian Agricultural Doctoral Dissertation Repository, CSIR Explorations, ETD at JNU etc.,**

Abstracting and Indexing Databases

An abstracting service is a service that provides abstracts of publications, often on a subject or group of related subjects, usually on a subscription basis. An indexing service is a service that assigns descriptors and other kinds of access points to documents. The word indexing service is today mostly used for computer programs, but may also cover services providing back-of-the-book indexes, journal indexes, and related kinds of indexes (see index (publishing)). An indexing and abstracting service is a service that provides shortening or summarizing of documents and assigning of descriptors for referencing documents.

The product is often an abstract journal or a bibliographic index, which may be a subject bibliography or a bibliographic database.

- Web of Science
- Scopus
- Pubmed etc.,



The screenshot shows the E-Shodh Sindhu Consortium website. The page is titled "e-Resources >> Databases". It lists several databases with their respective URLs and the number of institutions they provide access to. The databases listed are:

Database	URL	Institutions
Institute for Studies in Industrial Development (ISID)	http://isid.org.in/	314 Institutions
JGate Plus (JCCC)	http://jgateplus.com/search	194 Institutions
MathSciNet	http://www.ams.org/mathscinet	90 Institutions
Web of Science	http://www.webofknowledge.com/	98 Institutions
Web of Science Lease Access	http://www.webofknowledge.com/	52 Institutions

Online Courseware

Courseware refers to a software program especially designed for educational purposes. Initially available on CDs as course help for instructors and helping them manage lectures, courseware has been revolutionized. It is now mostly available online with various resources

and supporting material (reference books, research papers and journals). Courseware is especially used for online courses and certifications such as Microsoft Certified Professional courses.

Courseware educational material that is learned with the help of a computer. It can be in the form of a flash drive, compact disk or material placed online. Courseware can include:

- Instructions on how to divide a course in lectures
- Notes for instructor regarding leading of classes
- Information for self and computer-based learning
- Useful Web URLs for related material
- Ideas of making a distance learning class (those conducted over the Internet) interactive
- Video tutorials for better learning
- Assignments, quizzes and drills for better understanding
- Review questions for better understanding

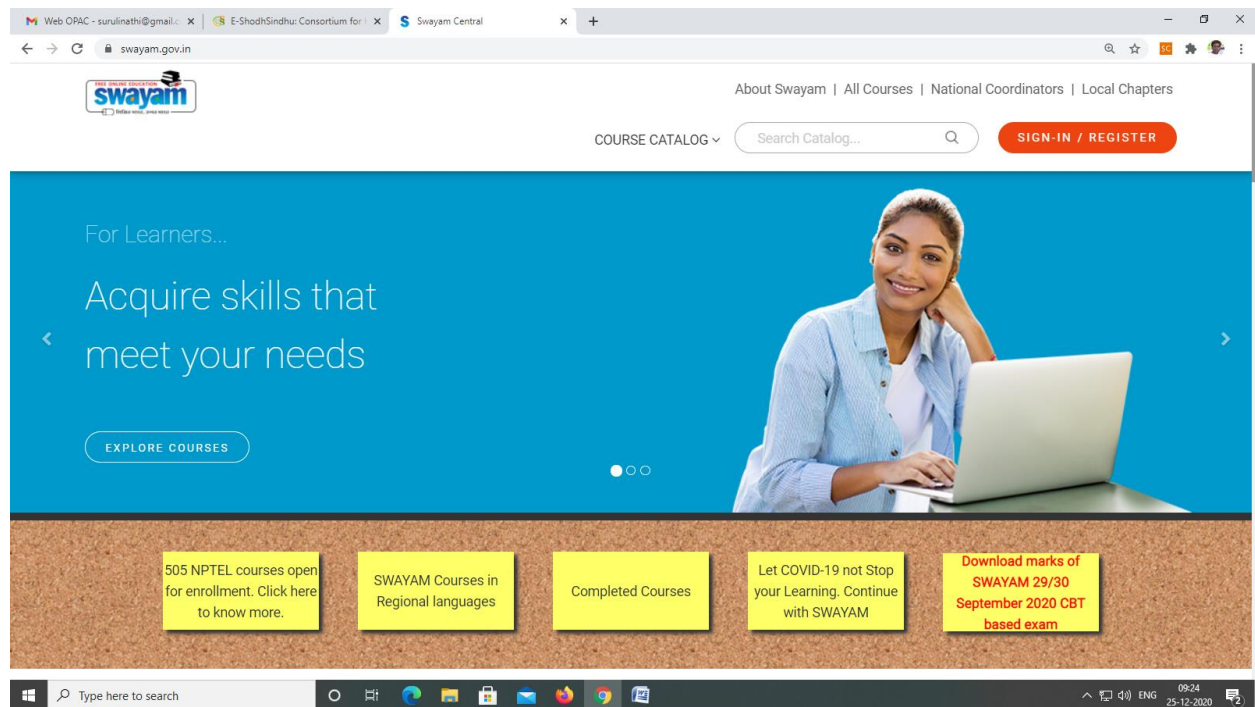
Courseware can be supplemental to traditional classroom-taught courses, or can be standalone courses themselves.

SWAYAM

SWAYAM is a programme initiated by Government of India and designed to achieve the three cardinal principles of Education Policy viz., access, equity and quality. The objective of this effort is to take the best teaching learning resources to all, including the most disadvantaged. SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

This is done through a platform that facilitates hosting of all the courses, taught in classrooms from Class 9 till post-graduation to be accessed by anyone, anywhere at any time. All the courses are interactive, prepared by the best teachers in the country and are available, free of cost to any learner. More than 1,000 specially chosen faculty and teachers from across the country have participated in preparing these courses.

The courses hosted on SWAYAM are in 4 quadrants – (1) video lecture, (2) specially prepared reading material that can be downloaded/printed (3) self-assessment tests through tests and quizzes and (4) an online discussion forum for clearing the doubts. Steps have been taken to enrich the learning experience by using audio-video and multi-media and state of the art pedagogy / technology.



National Programme on Technology Enhanced Learning (NPTEL)

It is an Indian online learning platform for university-level science, technology, engineering, and mathematics subjects. It is jointly developed by Indian Institutes of Technology and Indian Institute of Science.^[1] The initiative is funded by Ministry of Human Resource and Development, Government of India. The project's central idea is to put recorded lectures taught by its member institutes online for open access. It operates one of the most extensive educational Youtube channel covering engineering, basic sciences, and some humanities and social science subjects.^[1]

The screenshot shows the NPTEL website interface. The header is red with the NPTEL logo and navigation links: About us, Courses, FAQ, Contact us. The main content area has a sidebar with filters and a table of courses.

Filters:

- List By Discipline:** Aerospace Engineering, Biotechnology, Chemical Engineering, Chemistry and Biochemistry, Civil Engineering, Computer Science and Engineering.
- List By content type:** Video Course, Web Course.
- List By Institutions:** IISc Bangalore, IIT Bombay, IIT Delhi.

Table of Courses:

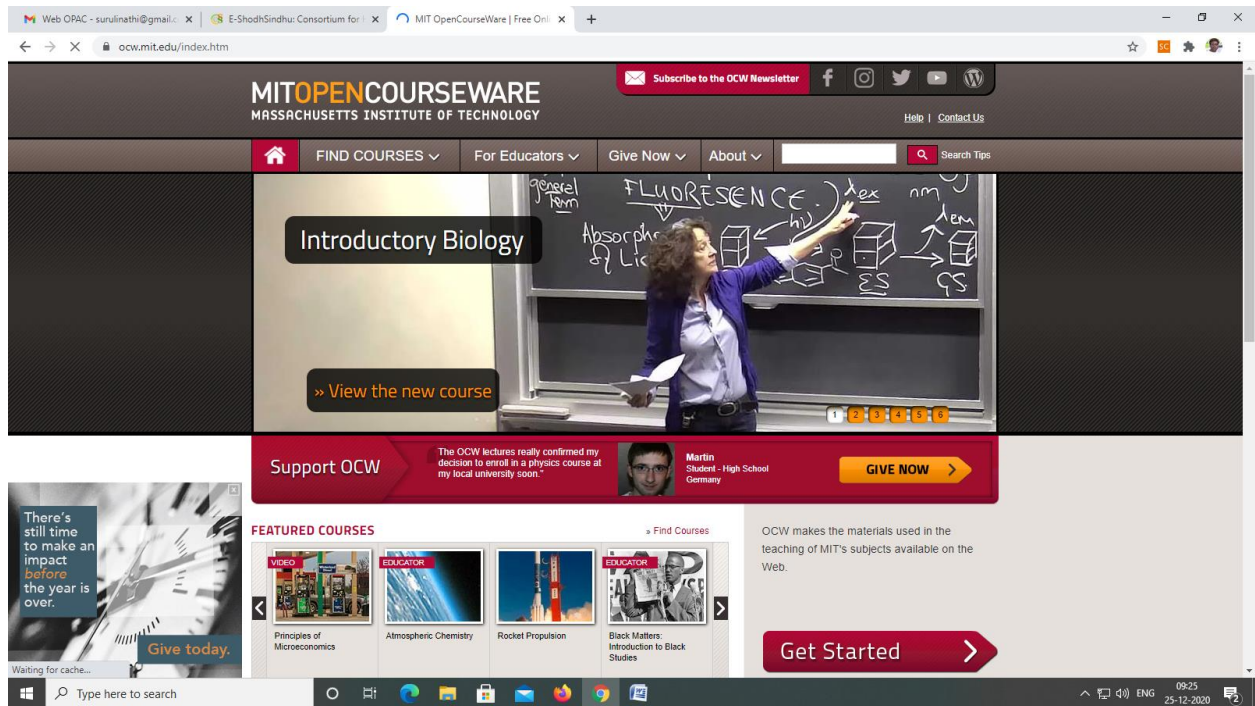
Subject Name	Discipline	SME Name	Institute	Content Type
NOC:Introduction to Launch Vehicle Analysis and Design	Aerospace Engineering	Prof. Ashok Joshi	IIT Bombay	Video
NOC:Lighter than Air Systems	Aerospace Engineering	Prof. Rajkumar Pant	IIT Bombay	Video
NOC:Computational Science in Engineering	Aerospace Engineering	Prof. Ashoke De	IIT Kanpur	Video
NOC:Gasdynamics: Fundamentals and Applications	Aerospace Engineering	Prof. Srisha Rao M V	IISc Bangalore	Video
NOC:Biointerface Engineering	Biotechnology	Prof. Lalit M. Pandey	IIT Guwahati	Video
NOC:Conservation Economics	Biotechnology	Dr. Ankur Awadhiya	IIT Kanpur	Video
NOC:Metabolic Engineering	Biotechnology	Prof. Amit Ghosh	IIT Kharagpur	Video
		Prof. Pinaki Sar		

MIT OpenCourseWare (MIT OCW)

It is an initiative of the Massachusetts Institute of Technology (MIT) to publish all of the educational materials from its undergraduate- and graduate-level courses online, freely and openly available to anyone, anywhere.

The project was announced on April 4, 2001, and uses Creative Commons Attribution-NonCommercial-ShareAlike license. The program was originally funded by the William and Flora Hewlett Foundation, the Andrew W. Mellon Foundation, and MIT. Currently, MIT OpenCourseWare is supported by MIT, corporate underwriting, major gifts, and donations from site visitors. The initiative inspired a number of other institutions to make their course materials available as open educational resources.

As of May 2018, over 2,400 courses were available online. While a few of these were limited to chronological reading lists and discussion topics, a majority provided homework problems and exams (often with solutions) and lecture notes. Some courses also included interactive web demonstrations in Java, complete textbooks written by MIT professors, and streaming video lectures.



Unit-III

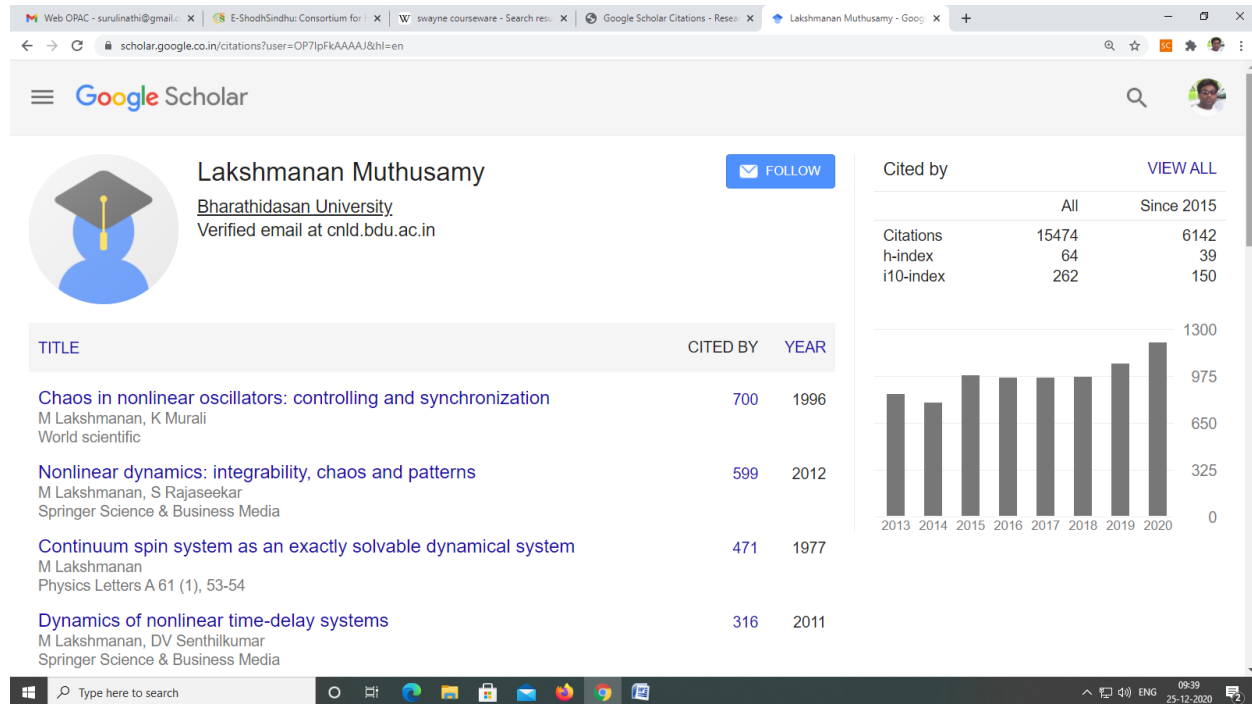
Compilation of Citation Profile: Impact factor, Citation, H-Index; Research Information System; Profile Management System; Subject Expert System

Citation Profile and Google Scholar

Google Scholar Citations lets authors set up a profile page that lists their publications and citation metrics.

The citation metrics are updated automatically, and you can choose to have your list of publications updated automatically or update them yourself.

You can make your profile public, so that it appears in Google Scholar results when people search for your name.



Citation Profile at Scopus

Scopus's Citation Overview is a way for you to find and track citation data generated from a set of selected documents. If you have selected the publications of an author indexed in Scopus, you can then make use of the Citation Overview feature to get citation information of the set of documents written by this author, such as:

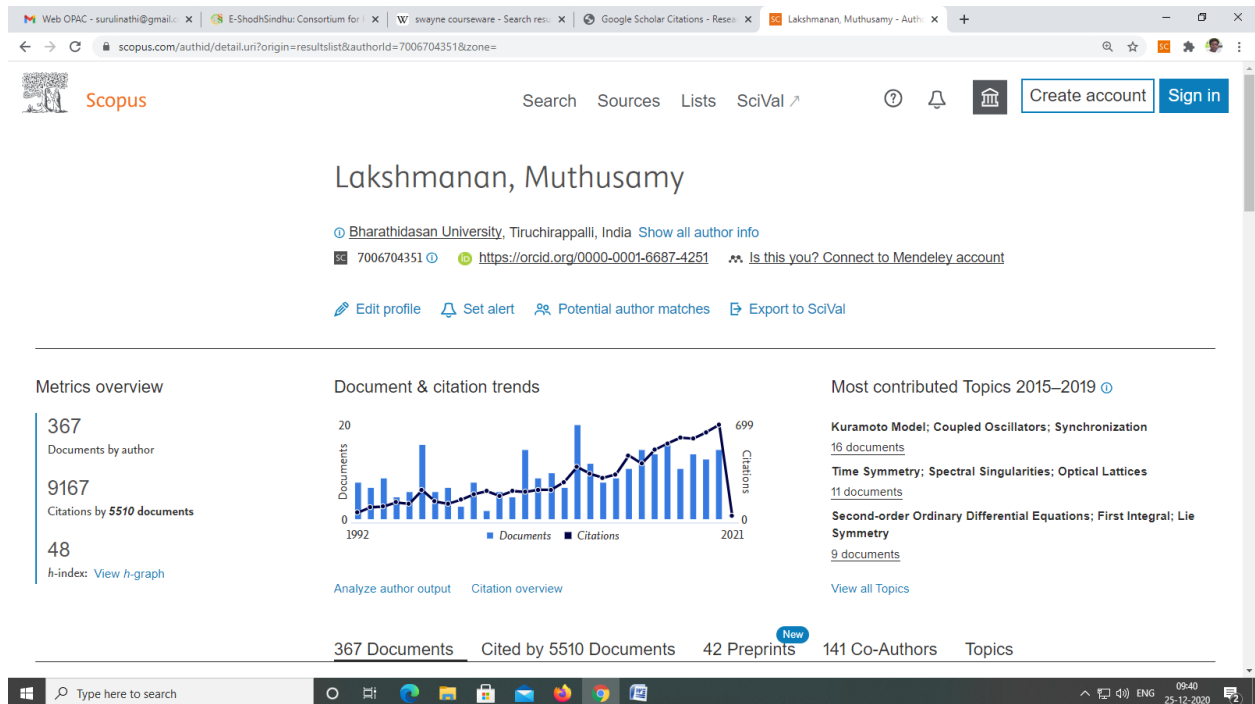
- a list of document in the set
- total number of citations per document (with or without self-citations)
- total number of citations per document in particular years
- h-index for the author
- h-Graph information

Your author profiles in Scopus

If you have publications indexed in "Scopus", remember to verify your author profiles in this two database to ensure accurate measurement of

your publication activities. You can make use of Scopus' "Author Feedback Wizard" to suggest changes to your own profile, such as:

- grouping together name variations in your profile
- selecting a spelling variation as the primary name under which all documents are listed
- associating a list of documents that belong to you with your profile



Citation Profile at Web of Science

Web of Science is a multidisciplinary database that can be used to gather and organize author information for the purpose of evaluating Author Impact. Author Search in Web of Science is a guide to finding articles written by a specific author.

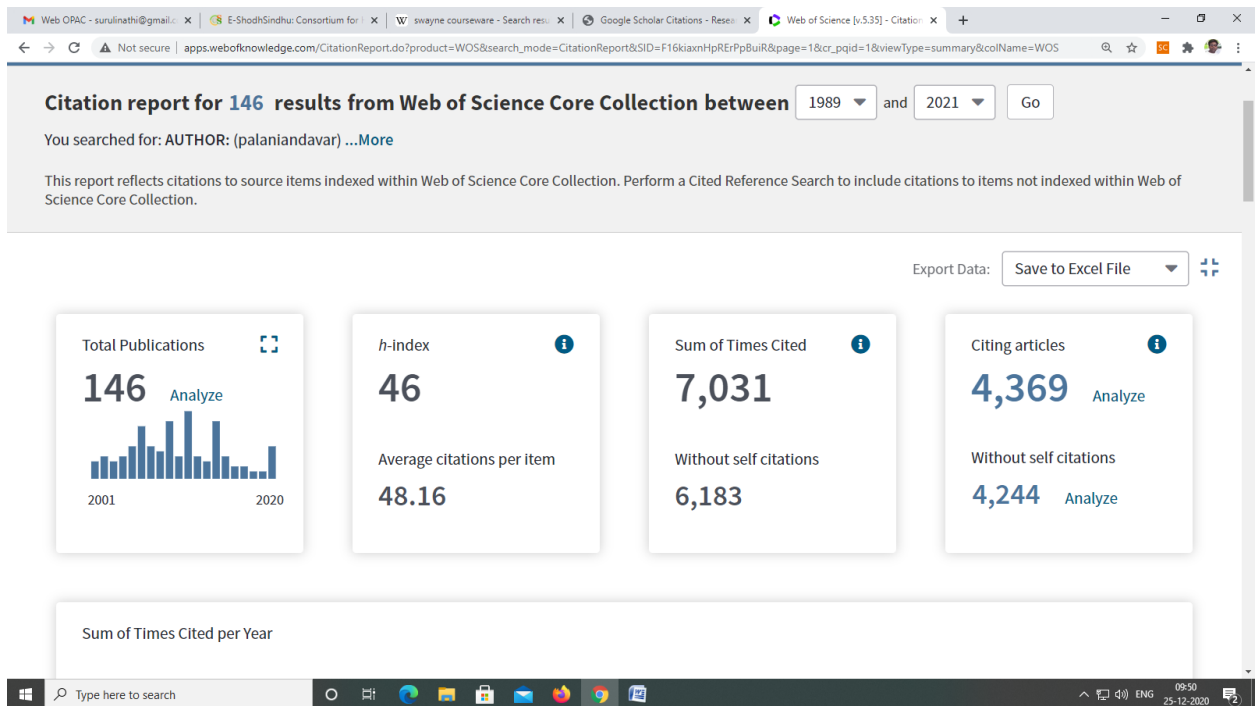
Web of Science Citation Reports shows how that Web of Science feature can be used to get information about how an author is being cited, including the author's H-Index.

Results Analysis shows how that feature can be used to sort an author's output by various categories.

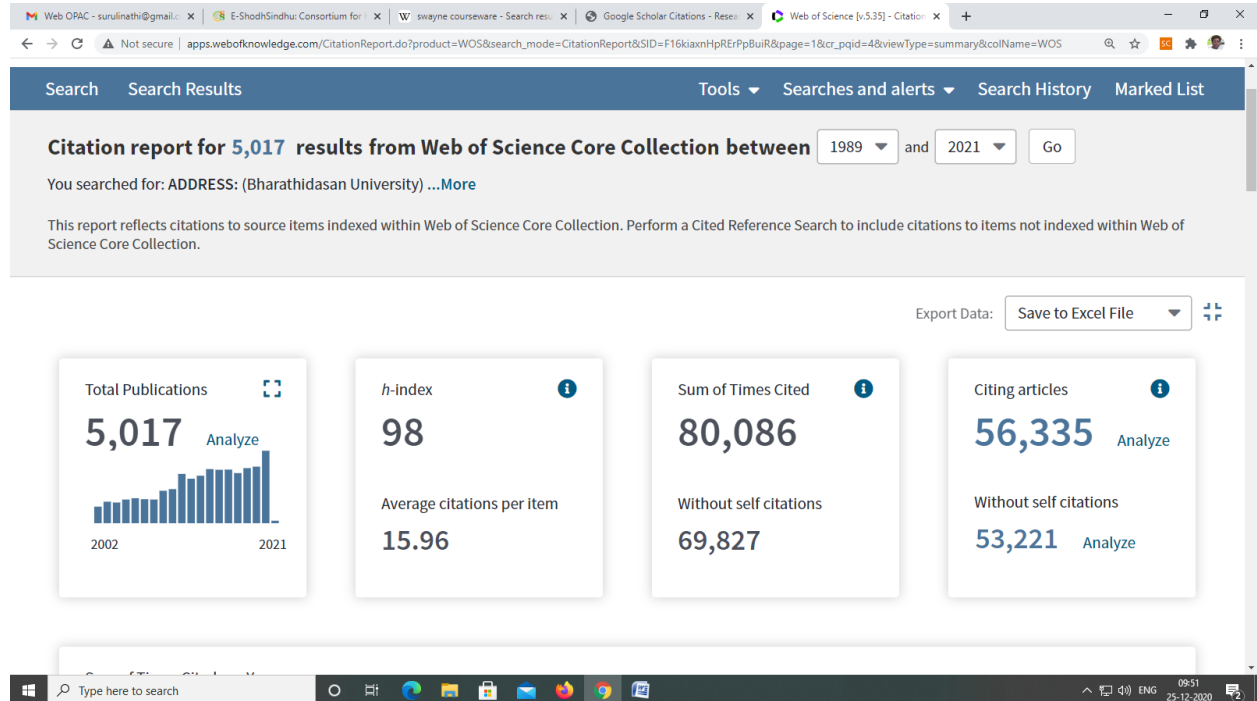
Like all databases, the Web of Science does not include all articles published, but its selection of journals is highly respected and thus useful for citation analysis.

Cited Reference Search in Web of Science (under Article Impact) can also include references to non-Web of Science indexed works (thus increasing the citation counts for an author), however a Citation Report

from a Cited Reference Search analyzes the citing works, not the author's works.



Citation Report for author M. Palaniandavar



Citation Report for Bharathidasan University

Impact Factor

The impact factor (IF) or journal impact factor (JIF) of an [academic journal](#) is a [scientometric index](#) calculated by [Clarivate](#) that reflects the yearly average number of [citations](#) that articles published in the last two years in a given journal received. It is frequently used as a [proxy](#) for the relative importance of a journal within its field; journals with higher impact factors are often deemed to be more important than those with lower ones.

History [\[edit\]](#)

The impact factor was devised by [Eugene Garfield](#), the founder of the [Institute for Scientific Information](#) (ISI). Impact factors are calculated yearly starting from 1975 for journals listed in the [Journal Citation Reports](#) (JCR). ISI was acquired by [Thomson Scientific & Healthcare](#) in 1992,^[1] and became known as Thomson ISI. In 2018, Thomson ISI was sold to [Onex Corporation](#) and [Baring Private Equity Asia](#).^[2] They founded a new corporation, Clarivate, which is now the publisher of the JCR.^[3]

Calculation [\[edit\]](#)

In any given year, the two-year journal impact factor is the ratio between the number of citations received in that year for publications in that journal that were published in the two preceding years and the total number of "citable items" published in that journal during the two preceding years:^{[4][5]}

$$IF_y = \frac{\text{Citations}_y}{\text{Publications}_{y-1} + \text{Publications}_{y-2}}$$

For example, [Nature](#) had an impact factor of 41.577 in 2017:^[6]

$$IF_{2017} = \frac{\text{Citations}_{2017}}{\text{Publications}_{2016} + \text{Publications}_{2015}} = \frac{74090}{880 + 902} = 41.577$$

This means that, on average, its papers published in 2015 and 2016 received roughly 42 citations each in 2017. Note that 2017 impact factors are reported in 2018; they cannot be calculated until all of the 2017 publications have been processed by the indexing agency.

The screenshot shows a web browser window with the URL bdserials.webnode.com/impact-factor/. The page is titled "Impact Factor" and contains a sidebar with navigation links: SJR and SNIP, Cite Score, Index Calculation, Open Access, Online Feedback, and Contact. The main content area is divided into two sections: "Journal Information" and "Journal Impact Factor".

Journal Information:

- Full Journal Title: CA-A CANCER JOURNAL FOR CLINICIANS
- ISO Abbrev. Title: CA-Cancer J. Clin.
- JCR Abbrev. Title: CA-CANCER J CLIN
- ISSN: 0007-9235
- Issues/Year: 6
- Language: ENGLISH
- Journal Country/Territory: UNITED STATES
- Publisher: WILEY-BLACKWELL
- Publisher Address: 111 RIVER ST, HOBOKEN 07030-5774, NJ,
- Subject Categories: ONCOLOGY

Journal Impact Factor:

Year	Cites in 2012 to items published in:	Number of items published in:
2011	2758	19
2010	2920	18
Sum:	5678	37

Calculation: $\frac{\text{Cites to recent items}}{\text{Number of recent items}} = \frac{5678}{37} = 153.459$

Citations

A **citation** is a [reference](#) to a source.^[2] More precisely, a citation is an abbreviated alphanumeric expression embedded in the body of an intellectual work that denotes an entry in the bibliographic references section of the work for the purpose of acknowledging the relevance of the works of others to the topic of discussion at the spot where the citation appears.

A **bibliographic citation** is a reference to a book, article, web page, or other published item. Citations should supply detail to identify the item uniquely. Different citation systems and styles are used in scientific citation, legal citation, prior art, the arts, and the humanities.

What is a citation and citation style?

A **citation** is a way of giving credit to individuals for their creative and intellectual works that you utilized to support your research. It can also be used to locate particular sources and combat plagiarism. Typically, a citation can include the author's name, date, location of the publishing company, journal title, or DOI (Digital Object Identifier).

A **citation style** dictates the information necessary for a citation and how the information is ordered, as well as punctuation and other formatting.

How to do I choose a citation style?

There are many different ways of citing resources from your research. The citation style sometimes depends on the academic discipline involved. For example:

- APA (American Psychological Association) is used by Education, Psychology, and Sciences
- MLA (Modern Language Association) style is used by the Humanities
- Chicago/Turabian style is generally used by Business, History, and the Fine Arts

H-Index

The ***h-index*** is an author-level metric that measures both the productivity and citation impact of the publications of a scientist or scholar. The *h-index* correlates with obvious success indicators such as winning the Nobel Prize, being accepted for research fellowships and holding positions at top universities.^[1] The index is based on the set of

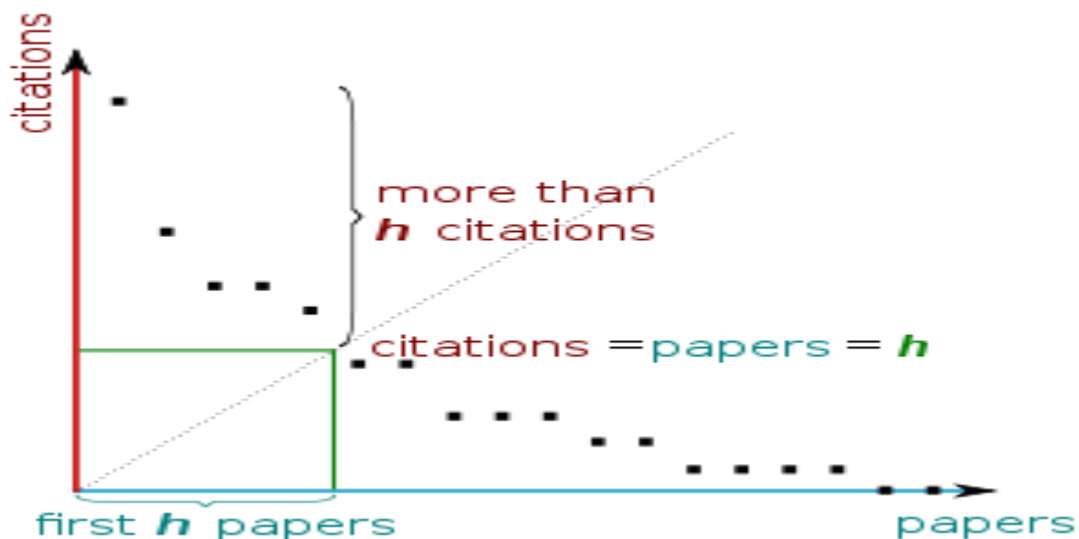
the scientist's most cited papers and the number of citations that they have received in other publications. The index can also be applied to the productivity and impact of a scholarly journal as well as a group of scientists, such as a department or university or country.^[3] The index was suggested in 2005 by Jorge E. Hirsch, a physicist at UC San Diego, as a tool for determining theoretical physicists' relative quality and is sometimes called the **Hirsch index** or **Hirsch number**.

Calculation of H-Index

Formally, if f is the function that corresponds to the number of citations for each publication, we compute the h -index as follows: First we order the values of f from the largest to the lowest value. Then, we look for the last position in which f is greater than or equal to the position (we call h this position). For example, if we have a researcher with 5 publications A, B, C, D, and E with 10, 8, 5, 4, and 3 citations, respectively, the h -index is equal to 4 because the 4th publication has 4 citations and the 5th has only 3. In contrast, if the same publications have 25, 8, 5, 3, and 3 citations, then the index is 3 (i.e. the 3rd position) because the fourth paper has only 3 citations.

$$f(A)=10, f(B)=8, f(C)=5, f(D)=4, f(E)=3 \rightarrow h\text{-index}=4$$

$$f(A)=25, f(B)=8, f(C)=5, f(D)=3, f(E)=3 \rightarrow h\text{-index}=3$$



Research Information System

It is a database or other information system to store, manage and exchange contextual metadata for the research activity funded by a research funder or conducted at a research-performing organisation (or aggregation thereof).

CRIS systems are also known as Research Information Management or RIM Systems (RIMS).

Use case

The scope of CRIS systems may be institutional, funder-operated, regional, national or supranational. From a system perspective, they can be commercial platforms provided by vendors, in-house-built systems or community-driven open source platforms. Most CRIS platforms have associated national- or international user groups^[10] where institutions running them discuss their performance and enhancements.

A Directory of Research Information Systems (DRIS) is maintained by [euroCRIS](#). Traditionally limited to euroCRIS members, this directory is currently being expanded to all available CRIS systems, focusing for starters on the ones available in Europe.

Among the key applications of the aggregated pool of research information collected in CRIS system it's worth mentioning the following areas.

- **Research assessment:** As mentioned in the “Practices and Patterns” report, research assessment is one of the key drivers for the implementations of CRIS systems, especially at research-performing organisations. This is due to the need for all institutional research outputs to be collected and described in a standardised way in a single institutional system that is also able to gather information on impact indicators. A particularly important example of this connection is the UK Research Excellence Framework (REF), whose 2014 edition resulted in a widespread adoption of commercial CRIS systems by UK institutions.^[12]
- **Research administration:** As a one-stop-shop for storing all the information related to the institutional research activity, CRIS systems play a key role in the area of research administration by institutional Research Offices. Among many others, this involves aspects such as:
 - Research impact and its analysis
 - Research collaborations across institutions and with Industry

- Preparation of project proposals and subsequent management of awarded grants
- Knowledge Exchange
- **Open Science implementation:** Where available, CRIS systems are often key components in the Open Science implementation strategy at research-performing organisations^[13] due to their systematic use for collecting information on all research outputs produced at institutions.
- **Business intelligence:** Their comprehensive aggregation of contextual research information makes CRISs very suitable tools for extracting business intelligence indicators for decision-making purposes at institutions and beyond. Emerging areas of work like the Knowledge Exchange Framework (KEF) in the UK provide further practical applications for these systems.

Profile Management System

Profile Management system is a web-based tool to organize research activities carried out by a researcher such as interests, skills, experience, expertise, mentor, projects, publications, etc.

The Profile Management system is a web-based tool to organize research activities carried out by a researcher such as interests, skills, experience, expertise, mentor, projects, publications, etc. The profile management system acts as knowledge management as well as a discovery tool for the researchers, faculty, scientists, etc. within the institutions as well as across the institutions. Development of a profile management system compatible with international standards is vital for any organization to showcase the research activities to the peer group or the funding agencies. There are a number of proprietary and open source profile management systems available with different features and functionalities in international level to meet any kind of institutions.

VIVO: It is member-supported, open source software and an ontology for representing scholarship. VIVO supports recording, editing, searching,

browsing, and visualizing scholarly activity. VIVO encourages showcasing the scholarly record, research discovery, expert finding, network analysis, and assessment of research impact. VIVO is easily extended to support additional domains of scholarly activities and when installed, populated with researcher interests, activities, and accomplishments by an institution. VIVO enables the discovery of research and scholarship across disciplines at that institution and beyond. VIVO supports browsing and a search function which returns faceted results for rapid retrieval of desired information. Content in a VIVO installation may be maintained manually, brought into VIVO in automated ways from local systems of record, such as HR, grants, course, and faculty activity databases, or from database providers such as publication aggregators and funding agencies. There are diverse activities associated with the VIVO project, across federal agencies, academic institutions, professional societies, for-profit publishers, and data providers, as well as a variety of efforts with the semantic web and ontology development communities. Installation of VIVO requires Operating System such as Linux, HP-UX, Mac OSX and Other prerequisite software are Java, JDK 7/later, Apache Maven 3.0.0/later, Apache Tomcat 7/later, MySQL 5.7.13/later.

VIVO Features

- **Researcher Geographical Facility Map** locations based on VIVO researchers' reported areas of geographical focus.
- **Publications in VIVO** also possible These numbers are based solely on publications that have been loaded into this VIVO application. If this profile you can enter additional publications.
- **Co-Author Network** also possible This information is based solely on publications that have been loaded into the VIVO system.
- **Co-Investigator Network** also possible. This information is based solely on grants that have been loaded into the VIVO system.
- **VCard and QR code** also Possible Use the following code to embed a QR code containing this academic's details as a VCard object. Use the following code to embed a QR code containing a link to this academic's profile.
- **Affiliated and Other Institutions also can be added.** Select an organization to see the people and grants. Click the plus sign to display the suborganizations within each organization.
- **Map of Science** also possible VIVO's Map of Science visualization depicts the topical expertise a university, organization, or person has based on past publications loaded into VIVO.

- **Collection wise information** is also displayed
- Up Coming Events also displayed – Author Profile and Integrated with ORCID ID
- It can maintain and update **your profile easily**
- Arrangement can be done in Alphabetical and Numerical

Benefits of VIVO

VIVO helps to Scientists, Clinicians, Administrators, Open Science & Discovery, Librarians, Students, Institutions and Others.

Benefits for Institutions

- Users can locate profile details by variety of search methods
- Enables to find research/researchers
- Search can be done variety of discipline
- Connect with colleagues
- Share research with other researcher/institution.
- Get statistics on published papers.
- Collaboration with other researcher/institution
- Popularize the institution research
- To get more visibility and more citations

Benefits for Librarians

- Will help them to stay in touch with their departments and integrate them into various research efforts
- The semantic web allows them to take our rich research output and make it available, reducing information boundaries
- Use information gleaned from VIVO to help in collection development and purchasing decisions
- Use information gleaned from VIVO to help in new services
- VIVO's ontology makes information easily findable

Benefits for Students and Researchers

- Find research opportunities
- Identify courses of interest
- Useful for recruiting new graduate students, trainees
- Find seminars of interest
- All data is linked within the context of a person - and that data can lead to other valuable sources
- You can individually brand yourself/research
- Links can help your search engine rankings rise quickly

Subject Expert System

A subject expert is an individual with a deep understanding of a particular job, process, department, function, technology, machine, material or type of equipment.

In artificial intelligence, an **expert system** is a computer system emulating the decision-making ability of a human expert.

Expert systems are designed to solve complex problems by reasoning through bodies of knowledge, represented mainly as if-then rules rather than through conventional procedural code.

The first expert systems were created in the 1970s and then proliferated in the 1980s.

Expert systems were among the first truly successful forms of artificial intelligence (AI) software.

An expert system is divided into two subsystems: the inference engine and the knowledge base. The knowledge base represents facts and rules. The inference engine applies the rules to the known facts to deduce new facts. Inference engines can also include explanation and debugging abilities.

Key Takeaways

- A subject matter expert (SME) is an individual with a deep understanding of a particular topic.
- Many SMEs have several years of experience and advanced degrees in their topic of choice and continue to study it rigorously.
- SMEs are used across different industries and can help solve problems when general expertise is insufficient.
- Sometimes subject matter experts are used as expert witnesses in court cases.

What Is a Subject Matter Expert?

Individuals designated as subject matter experts are typically sought out by others interested in leveraging their unique expertise to solve specific problems or help meet challenges. Subject experts in some fields often serve as expert witnesses in [lawsuits](#) and other legal actions.

While it is common to find them in technical disciplines, subject matter experts can exist in all disciplines and functions. It is common to find

them in information technology, software development, marketing, and customer support and all other areas in a business.

How Subject Matter Experts Work

It's common to draw upon a subject matter expert when attempting to navigate challenges. While many professionals are [cross-trained](#) in their particular functions, some situations call for highly specialized knowledge.

- [Information technology](#) professionals will call upon various subject matter experts for insights into integrating new software applications or, fixing bugs or anomalies discovered during testing.
- [Architects](#) and engineers will call upon experts when considering new building technologies or design approaches.
- [Project teams](#) engage subject matter experts when their more generalized knowledge of a topic is insufficient for the problem in front of them.
- In the legal industry, expert witnesses are typically highly specialized subject matter experts called upon to testify in court cases, especially liability lawsuits.
- Innovators striving to apply new technologies or advancements will often draw upon the originators or external specialists to help them solve specific technical or business challenges.
- Companies will often use subject matter experts to help develop [training programs](#) or invite them as instructors when training in particular areas.

Subject matter experts are vital to helping groups solve highly specific problems where their general expertise proves insufficient. For example:

- An expert on a particular operating system may help a company assess whether a new application is compatible with others.
- A data management specialist may help a team understand how to extract and format the data for a marketing project.
- An expert on a particular chemical may testify in court to the proper use or misuse of it in commercial environments.
- A social media marketing subject matter expert may train the members of a marketing team on how to build a social media campaign.
- An expert on autoimmune diseases may be a leading contributor to medical journals on the subject and a frequent speaker at medical conferences.

Requirements for Subject Matter Experts

Typically, subject matter experts have developed their expertise in their particular discipline over a long period of time and after a great deal of immersion in the topic. Many subject matter experts have pursued [advanced degrees](#) in their area of specialization.

Additionally, the experts maintain a rigorous program of continuous study in their field. This helps ensure the SME individual maintains current and complete knowledge of their specific area of expertise.

Many subject matter experts are active as authors and have published books or articles on their topic of expertise. Others serve as educators in college and universities.

Developing as a subject matter expert takes time, experience, and intense research and study. Many career professionals prefer to remain, generalists, drawing upon the right subject matter experts at the right time to navigate unique and complex challenges.

Limitations of Subject Matter Experts

The highly specialized knowledge of the subject matter introduces some risk when dealing with broader systems issues. For example, while someone might be the expert on a particular type of software application, they may not understand how it interacts in concert with newer software applications outside of their expertise. Or a technical support expert may not be familiar with how a product works in particular situations or environments. It is important for experts and other professionals to recognize when even highly specialized knowledge is insufficient to diagnose and remedy a unique problem properly.