CENTRAL FABRICATION UNIT

Central Fabrication Unit at Sree Vidyanikethan Engineering College is an educational platform where science is translated into technology. The Institute provides extensive student support via centralized fabrication unit in addition to the departmental laboratories.

The Central fabrication unit consists of various facilities/shops with well-equipped latest tools, equipments and machineries to support the students to fabricate their experimental set-up with the required quality and quantity within stipulated time. Further, the unit supports all branches of student's research, academic projects, minor and major projects of B.Tech, M.Tech and Ph.D and supporting the college in infra structure fabrication works. Fabrication works pertaining to sponsored research and consultancy are also done at this unit. Various facilities are also exist for the manufacture of components, parts and repair and servicing works.

At central fabrication unit students have the access to the following facilities:

1. *Fitting Shop*
2. *Machine Shop*
3. *Welding Shop*
4. *Forging Shop*
5. *Carpentry Shop*
6. *Foundry Shop*
7. *Tin Smithy Shop*
8. *Plumbing section*
9. *Metrology section*

CENTRAL FABRICATION UNIT

CENTRAL FABRICATION UNIT STAFF

Fitting Shop

The fitting shop is related to assembly of parts, after bringing the dimension or shape to the required size or form, in order to secure the necessary fit. students identify and select various tools for holding, assembling or dismantling the work piece and carry out basic work bench activities such as marking, sawing, filing, drilling and fitting to ensure work pieces fitting. Further, students can produce a product through the given technical drawing by using appropriate engineering tools and equipments in fitting shop.

Machine Shop

The Machine shop is dedicated to taking the theoretical knowledge learned in a classroom environment and applying it to real world tactile solutions. Machine Shop provides engineering students with a well-equipped, safe working environment in which the students can design and manufacture their projects using various machine tools and cutting tools. The shop contain a spectrum of equipment and technology ranging from simple hand tools to advanced machine tools including CNC Lathe and Vertical Machining center. The facility has become an unmatched resource, accessible to students and staff across multiple disciplines and departments.

Welding Shop

Welding is an important fabrication and sculptural technique, possessing both practical and artistic capabilities. The Welding shop provides students to construct and/or repair metal structures and equipment using welding fabrication procedures, including those associated with SMAW, GMAW, GTAW, fuel-oxygen. The facility is equipped with advanced welding machines and cutting processes. Students are acquire skills during welding processes. The students learn further, industrial safety measures.

Forging Shop

Forging shop provides the facility for shaping of metal in cold and hot working stages. Structures made of mild steel are fabricated at this facility. Students develop the steels structures for their automotive designs. Utilize hand forging for relatively small components, Machine forging for medium sized and large components are forged by drop forging method.

Carpentry Shop

Carpentry shop provides the facility for woodworking, woodcutting, shaping, patterns or repairs wooden structures, as houses or shelving. Students work with wood for various applications. Further, the students have the access to design different types of wooden patterns.

Foundry Shop

Students uses foundry shop to produce their own metal castings. Required patterns are prepared in the carpentry shop using timber wood and then brought to the foundry. Metals/wax materials are cast into shapes by melting them into a liquid, pouring the metal/wax in a mold, and removing the mold material or casting. The most common materials processed in the foundry shop are Aluminium and wax in few cases.

Tin Smithy Shop

Tin smithy shop supports the students to prepare their minor and major projects involving sheet metal bending, trimming, shaping the sheets to their desired shapes related to engineering articles, Common examples of sheet metal works done by the students at sheet metal shop are hoopers, canisters, guards, covers, pipes, hoods, funnels, bends, boxes etc.

Metrology section

Students once they fabricate their models/projects , they uses the metrology instruments to check the internal and external dimensions of the models. The metrology section is having advanced computerized instruments. Students identify and use reference materials to ensure good quality, accurate, traceable measurement and dimensional accuracy for accurate results as per Indian standards.

Plumbing section

Plumbing is a skilled trade of working with pipes or tubes and plumbing fixtures. The facility is provided with pipe bending and joining, installing plastic pipes, working on copper pipes, soldering, pipe fitting, dies using taps and pneumatic lining.

For any fabrication works contact:

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Mobile: 9440459660
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Photo Gallery Central Fabrication Unit

Fitting Shop

Machine Shop

Welding shop

Forging shop

Carpentry shop

Foundry shop

Tin smithy shop

Plumbing section

Metrology section

SREE VIDYANIKETHAN ENGINEERING COLLEGE

(AUTONOMOUS)

Department of Electronics and Instrumentation Engineering

Central Instrumentation Centre

Central Instrumentation Centre (CIC) facility, at SVEC, has been created with an objective of providing a central facility of latest and advanced analytical techniques to the faculty, staff and students of all the departments of the institute. It houses highly sophisticated analytical equipments and other equipments. Also the centre provides service to troubleshoot and maintenance of Electrical and Electronic Instruments like, ammeters, voltmeters, CROs, RPS, etc., This centre is established and maintained by the department of Electronics and Instrumentation Engineering, SVEC.

OBJECTIVES:

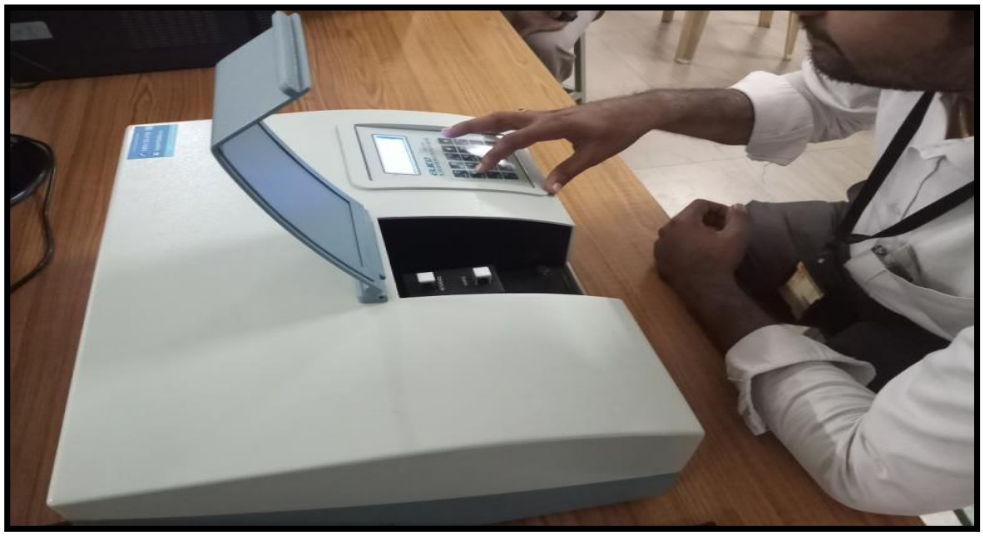
- To acquire and develop capability for preventive maintenance and repair of Electrical and Electronic Instruments.
- To provide facilities of modern analytical instruments to students and faculty.
- To train technicians for maintenance and operation of instruments.

FACILITY AVAILABLE:

1. UV Visible spectrophotometer
2. Flame photometer
3. Gas Chromatograph
4. FTIR Spectrometer
5. Water Quality Analyzer
6. IC testers
7. LCR meter
8. Microcontroller Programmer

UV VISIBLE SPECTROPHOTOMETER:

Ultraviolet and visible (UV-Vis) absorption spectroscopy is the measurement of the attenuation of a beam of light after it passes through a sample or after reflection from a sample surface. Absorption measurements can be at a single wavelength or over an extended spectral range



FLAME PHOTOMETER:

This relies on the principle that an alkali metal salt drawn into a non-luminous flame will ionise, absorb energy from the flame and then emit light of a characteristic wavelength as the excited atoms decay to the unexcited ground state. ... This is the basic principle of flame photometry.

A photoelectric flame photometer is a device used in inorganic chemical analysis to determine the concentration of certain metal ions, among them sodium, potassium, lithium, and calcium. Group 1 and Group 2 metals are quite sensitive to Flame Photometry due to their low excitation energies.

Flame photometers are also very cost effective and easy to use. In a flame photometer, the solution is aspirated through a nebulizer (or aspirator) into the flame. After the sample matrix evaporates, the sample is atomized. Atoms then reach an excited state by absorbing heat from the flame.

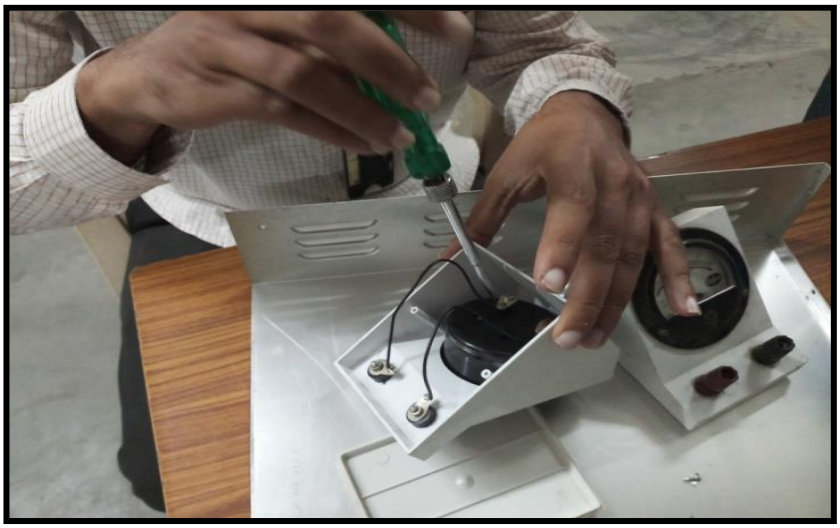
GAS CHROMATOGRAPH:

Gas chromatography is a common type of chromatography used in analytical chemistry for separating and analyzing compounds that can be vaporized without decomposition.

The process of chromatographic separation involves transport of a sample of mixture through a column. For this purpose the mixture may be in liquid or gaseous state. The stationary phase may be a solid absorbent or liquid partitioning agent. The mobile phase is usually as a gas or liquid and it transport the constituents of the mixture through the column. During such transport the material in the column exercises selective retardation on the various components of the sample due to adsorption, Chemical Bonding, Polarity of the sample.

FTIR SPECTROMETER:

Fourier-transform infrared spectroscopy (FTIR) is a technique used to obtain an infrared spectrum of absorption or emission of a solid, liquid or gas. An FTIR spectrometer simultaneously collects high-spectral-resolution data over a wide spectral range. This confers a significant advantage over a dispersive spectrometer, which measures intensity over a narrow range of wavelengths at a time.



WATER QUALITY ANALYZER:

Water quality analyzers offer a small and economic package for water quality sampling purposes. The water quality analyzer can simultaneously measure ten parameters: dissolved oxygen, temperature, conductivity, salinity, specific conductance, resistivity, depth, pH, ORP, and total dissolved solids.

IC TESTERS:

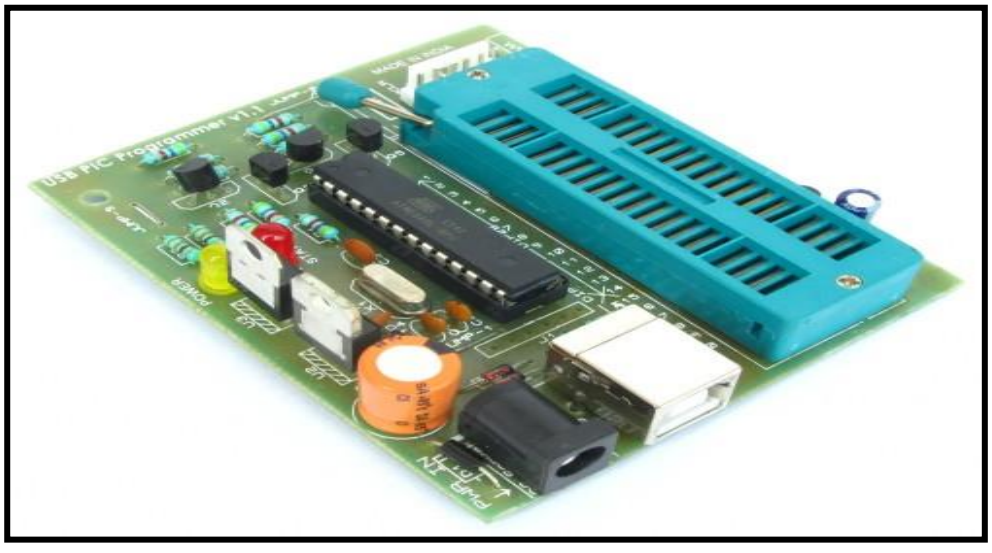
An Integrated Circuit tester (*IC tester*) is used to test Integrated Circuits (ICs). We can easily test any digital IC using this kind of an *IC tester*. For testing an IC, we need to use different hardware circuits for different ICs.

LCR METER:

An *LCR meter* is a type of electronic test equipment used to measure the inductance (L), capacitance (C), and resistance (R) of an electronic component. In the simpler versions of this instrument the impedance was measured internally and converted for display to the corresponding capacitance or inductance value. Readings should be reasonably accurate if the capacitor or inductor device under test does not have a significant resistive component of impedance. More advanced designs measure true inductance or capacitance, as well as the equivalent series resistance of capacitors and the Q factor of inductive components.

MICROCONTROLLER PROGRAMMER:

A *Microcontroller Programmer* or Microcontroller Burner is a hardware device accompanied with software which is used to transfer the machine language code to the microcontroller/EEPROM from the PC.



MEDIA LABORATORY

Media Laboratory was started in June 2016 for research and development and providing media services to the Sree Vidyanikethan Educational Institutions (SVEI). It operates in creating innovative scenarios for teaching, learning and research as well as their implementation at various institutes of SVEI.

Activities in Media Lab

The Media lab encourages and supports staff members and students in the following activities:

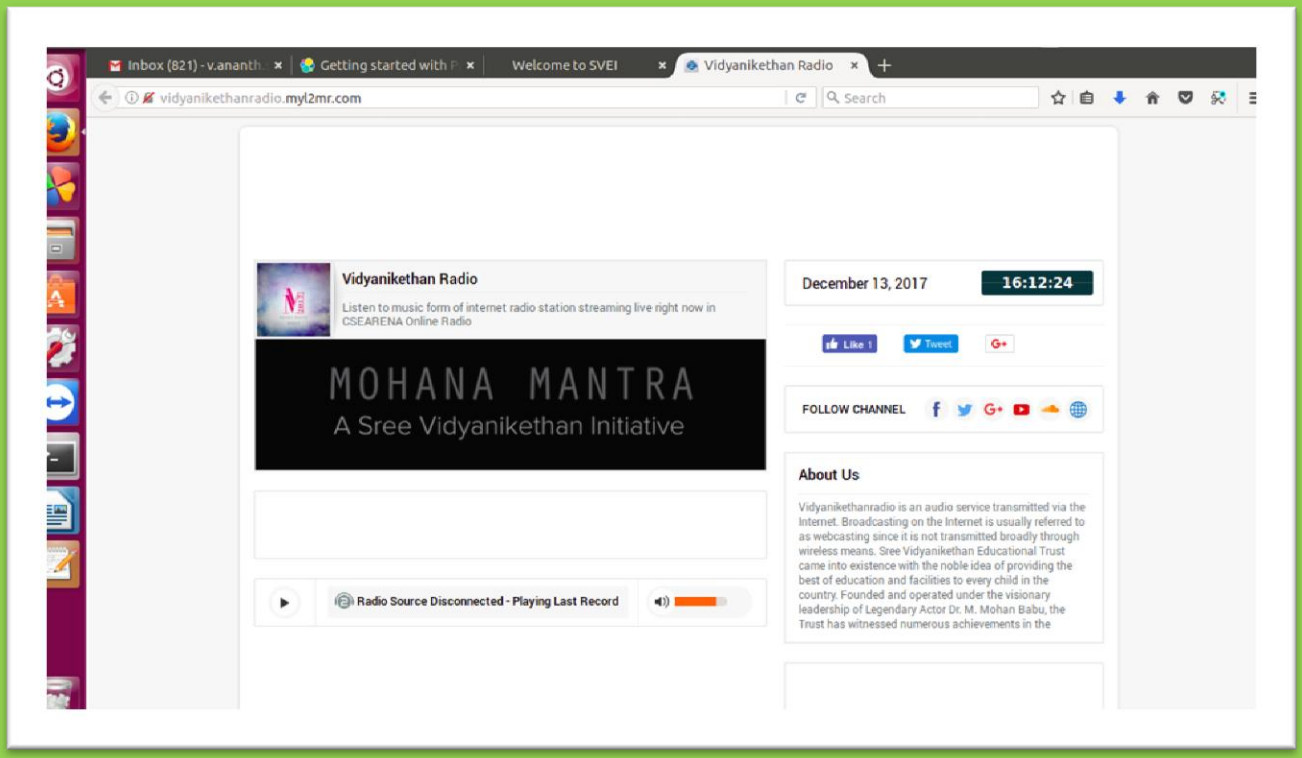
- utilizing media and educational technologies in teaching (e.g. e-learning, media-aided project learning)
- conducting research activities
- contemporary distribution and enrichment of teaching and research materials (e.g. via streaming media of lectures and presentations, enriching PowerPoint presentations with media)
- documentation and digital processing of technical seminars, workshops, training programs, conferences and other events at the institution.
- designing brochures, posters, pamphlets, and logos for college events

The Media Laboratory provides work space for students where they can experiment with new media and educational technologies. By using the laboratory's infrastructure students may initiate media projects (short film making, photography, and visual effects) and develop prototypes from project ideas.

One such project initiative from our B. Tech students is the ***Vidyanikethan Radio*** – an internet radio started in September, 2017. This radio service is primarily used to broadcast messages and instruction to volunteers during college cultural and technical fests.

Facilities and Equipment in Lab

- Media streaming server
  IBM x3650M4 with 1TB x 4 HDD, 16 GB RAM
- 10 x PC workstation for Audio/ Video Processing with video processing suite
- Sound/ Speech Recording device
- 2 x Video cameras
  Panasonic AG-UX90 4K, 15X optical zoom Camera Recorder
- 2x DSLR cameras with wide angle lenses



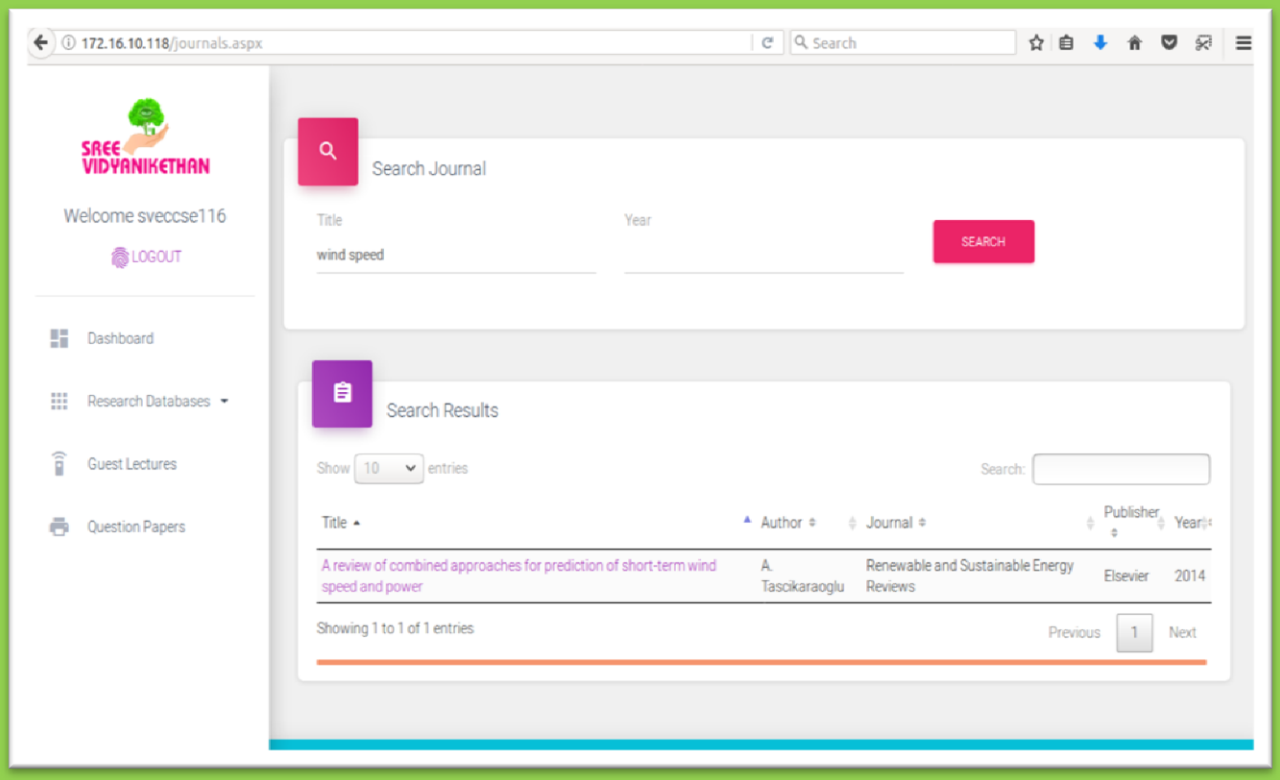
Vidyanikethan Internet Radio

Media Streaming Server and other facilities

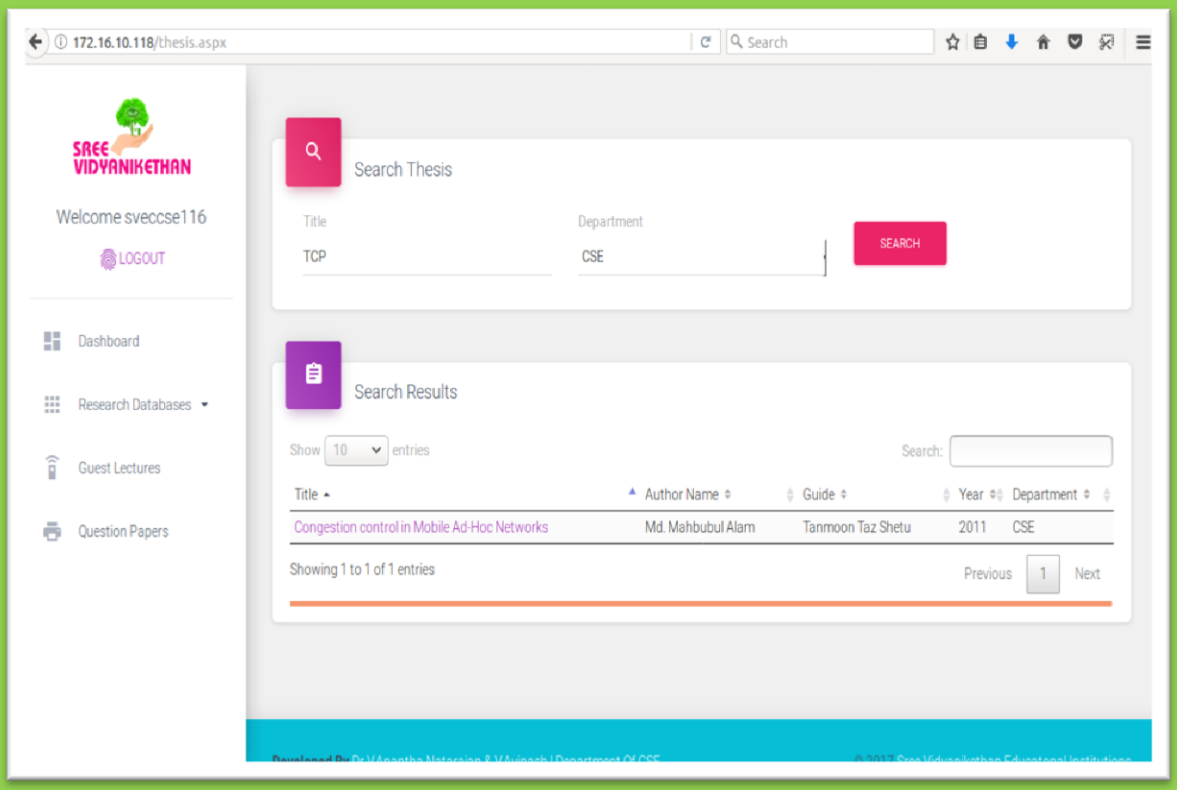
RESEARCH DATABASE

The Central library has been established with state-of-the-art infrastructure to the International Standards with Reference and textbooks of national and international authors, International and national Journals & Non-book materials are available to cater to various fields. Also we have established a digital platform **SREE VIDYANIKETHAN DIGITAL LIBRARY** to share the text, video, and audio materials to students and faculties and support them in their self-learning process.

Our Digital Library includes **RESEARCH DATABASE** that contains full-text articles or citations to articles published in academic journals, magazines and newspapers, e-books consisting of text, images or both readable on computers and other electronic devices, and repository of Ph. D, PG and UG research/ project theses, and some statistical databases.



Digital Library - Journals



Digital Library - Thesis

Statistics Database

The Digital Library provides access to a number of databases where statistics on a range of subjects can be found. Statistical databases give important information that supports scholars/researchers/ and students in their coursework, research, and project respectively.

Access the Digital Library within campus by entering the URL on a browser http://172.16.10.118