UNIVERSITY LIBRARY AND INFORMATION TECHNOLOGY

Chapter - 7

7.1 University Library

The University Library acquaints services to the scholars, scientists and extension activists under 6 constituent colleges and 6 polytechnics as well as research stations and extension education centers of Junagadh Agricultural University, Junagadh.

Collection:

The University Library possesses around 57900 books. These books are very valuable and helpful in studies, research and preparation for competitive examinations. It provides around 16000 back volumes, 3650 theses, 10 newspaper, and 900 e-books.

Services:

E-library with 100 mbps LAN connectivity facilitates users to access online database like J-Gateplus (Complete) online which has full text journals. Commodities (CMIE) which as economical data. Our library has 900 e-books and this year we have subscribed 75 more e-books, Facility by ICAR for foreign Journals through Online Access of Journals through Consortium for e-Resources in Agriculture (CeRA) and KRISHIKOSH are available   and CD-ROM databases like CAB, AGRICOLA, AGRIS. The University Library is   fully automized   after the implementation of RFID system. Full time internet, scanning and CD writing facilities are available for the students in the e-library in which there are 40 work stations with internet access. These facilities are being extensively utilized by both faculty and students on an average of daily 50 to 300 users for about 12 hours per day. Students are provided with books of their concerned subject of their respective semesters through BOOK BANK facility, 28 more books were purchased of Agriculture Engineering faculty for the book bank. The Library runs through RFID with the software KOHA & LIBSYS.

The library renders its services to the users from 8:00 to 18:30 h. A separate Air Conditioned Reading Room is developed with the best facilities as well as good ventilation and aeration. This AC reading room accommodates approximately 100 students. The Reading Room remains open for its users from 8.00 to 23.00 hours on working days whereas 8.00 to 14.00 hours on holidays.

7.2 Information Technology

Junagadh Agricultural University has made significant strides in leveraging internet technology for the efficient management of its educational, research, and extension activities. The Directorate of Information Technology plays a pivotal role in centrally managing the university's IT services, catering to students, faculty, research scientists, extension personnel, and administrative staff. The university's IT unit is at the forefront of employing cutting-edge technology, supported by a highly qualified team.

High-speed internet access is available campus-wide, including locations beyond the main campus, enabling seamless connectivity for all users. The university's website, www.jau.in, serves as a valuable resource, offering up-to-date information that helps students envision themselves as part of the university community. The website also features a wealth of resources, including answers to farmers' queries, weather-based agricultural advice, agricultural education materials, video gallery, and more. To streamline access to internally generate and other online materials, and the portal "Online JAU" consolidates these resources under a single umbrella.

7.2.1 IT infrastructural facilities of JAU
Data Centre:

As an integral part of JAU's IT infrastructure, the data center stands as a testament to the institution's commitment to technological advancement. Equipped with state-of-the-art technology and cutting-edge computing tools, including servers, workstations, firewalls, routers, and various other resources, the Information Technology Cell at JAU ensures seamless operations. Operating round the clock, the data center boasts three different power sources, including solar panels, to ensure cost-effectiveness and uninterrupted service. The data center serves as the backbone of JAU's IT operations, enabling efficient data storage, processing, and dissemination, and empowering students, faculty, and staff to embrace a technologically advanced environment.

High-speed Internet Access

JAU benefits from a robust internet infrastructure with a total of 305 Mbps dedicated 1:1 Internet Lease Line (ILL) connections provided by multiple service providers. Railtel, as part of the National Knowledge Network (NKN), contributes 100 Mbps 1:1 ILL, fostering the use of specialized applications and facilitating the sharing of high-performance computing resources, e-libraries, virtual classrooms, and extensive databases. Additionally, BSNL ensures uninterrupted redundant internet connectivity with a standby 25 Mbps 1:1 ILL. Moreover, the campus network is extended to twenty-five sub-centers through a Wide Area Network (WAN) utilizing a 180 Mbps 1:1 ILL provided by a private firm. This centralized management under the IT Cell ensures efficient and seamless network operations throughout JAU and its sub-centers.

Furthermore, the university has established a connection to "Gujarat State wide Area Network (GSWAN), Gandhinagar," Asia's largest network, via optical fiber cable. This connection allows the university community to access online government programs and services conveniently.

Network Services:

The network services provided by the IT Cell play a vital role in connecting the institution's campus and 25 sub-centers across different districts. The network connectivity at JAU is established through various connectivity media such as fiber optic cables, Peer to Peer wireless connections, and CAT 6 cables, ensuring efficient and reliable communication. This strategic implementation encompasses different architectural designs, including LAN (Local Area Network), MAN (Metropolitan Area Network), and WAN (Wide Area Network), as required. By centralizing the management of all sub-centers under the IT Cell's control through the data center, JAU ensures streamlined and coordinated network operations. This comprehensive network infrastructure empowers seamless collaboration, data sharing, and communication among students, faculty, and staff, fostering an environment conducive to innovation and knowledge exchange.
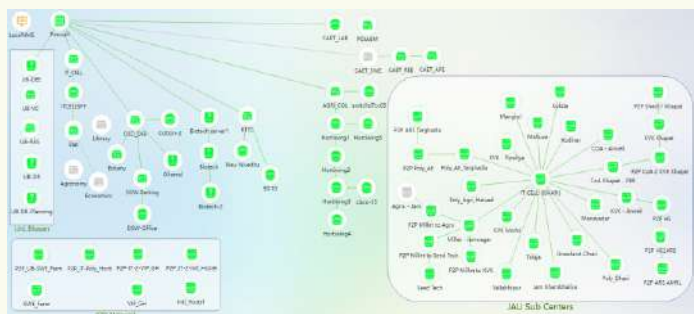
7.2.2 JAU IT Network and Surveillance Setup

The university has implemented a comprehensive and robust network design, incorporating various security measures such as a firewall, IDS (Intrusion Detection System), analyzer, content filtering, and other safeguards. This ensures a highly secure
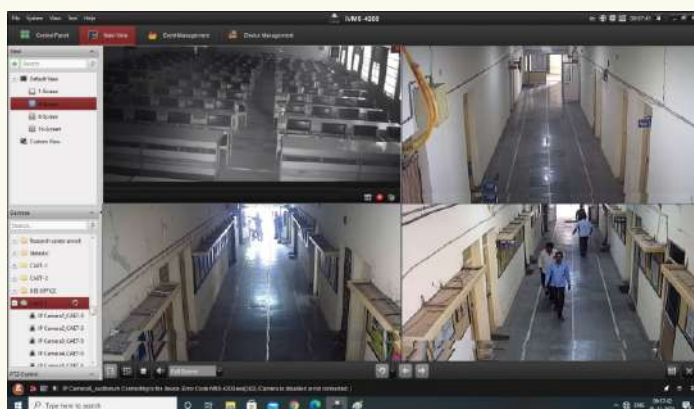
environment for the university's network infrastructure. With over 1100 network points and 75 wireless access points strategically placed throughout the campus, the University Campus Network offers extensive coverage, facilitating convenient internet access for all users.

Efficient network management is achieved through the utilization of Network Management Software (NMS), enabling continuous monitoring, issue detection, and prompt problem-solving. Moreover, the university has installed more than 6500 meters of fiber optic cable across the campus, delivering high-speed network connectivity to support seamless communication.

To ensure a secure environment, the university has implemented a well-established security system consisting of over 800 CCTV cameras. These cameras are equipped with both central and distributed monitoring systems, enhancing surveillance and providing comprehensive coverage throughout the campus.

JAU IT Network Layout

CCTV Surveillance System

7.2.3 Video Conference Room

Virtual meetings have become highly effective, almost rivalling the experience of in-person meetings. The university has leveraged this technology to establish a robust video conferencing infrastructure, facilitated by the IT Cell. As a result, face-to-face communication is now possible from virtually anywhere in the world. For seamless video conferencing experiences, the university has dedicated a fully furnished conference room equipped with both software-based and hardware-based video conferencing solutions. The room features high-definition cameras, a full duplex voice communication system, flat panel monitors, and an acoustically optimized space, ensuring optimal audio and visual quality.

During the challenging times of the COVID-19 epidemic, the university's newly constructed Video Conference Room has played a vital role. As of the 2022-23 year, more than 50 university-level conferences have already been organized in this centralized video conferencing room, serving as a pivotal hub for engaging and productive discussions.

7.2.4 In-house Developed Programmes:

The IT Cell has developed a range of in-house applications to cater to the needs of university staff, students, and farmers. Some notable applications include:

Tour/HRD Programme
Achieving personal and professional growth is crucial for faculty and officers of a university campus. They often embark on Human Resource Development (HRD) events or university work with prior permission, in compliance with the JAU statute, within a short time frame. However, the process requires administrative approval before they can participate. In the past, obtaining permission was a challenge, resulting in missed opportunities. Fortunately, the implementation of an Online Tour/HRD system has addressed these issues. This innovative system has significantly reduced problems related to permission for attending these events, saving both time and stationary resources. Additionally, the system digitally stores the attendance history of each HRD event, providing a valuable reference during the approval process. Remarkably, in the span of 2022-2023 alone, the system successfully processed 4394 tours and 427 HRD events, highlighting its efficiency and effectiveness.   **Beneficiaries**: For Employees and Officers
"Junagadh Janvani" website
The creation of the janvani.jau.in portal has provided a powerful tool for archiving and showcasing all the broadcasted programs and activities associated with the "Junagadh Janvani" (91.2 MHz) community radio station. Through this portal, the archived programs are conveniently accessible at any time, offering individuals the opportunity to explore and engage with the diverse range of activities conducted under the program. By enabling easy access to these valuable resources, the portal serves as a gateway to knowledge and inspiration.   **Beneficiaries**: Farmers and All related community
Online Fee Receipt Software
As an integral component of the digital India initiative, JAU's colleges and polytechnic have implemented an Online Fee Collection Portal, revolutionizing the fee payment process for students. This online platform has greatly simplified the payment procedure, enhancing convenience and efficiency. In the academic year 2022-2023, a total of Rs. 26,841,721 was collected as fees through 4,751 transactions, with the funds being directly credited to the respective college/polytechnic account. This streamlined and secure system not only aligns with the vision of a digitally empowered India but also ensures smooth financial transactions, benefiting both the institution and its students.   **Beneficiaries**: Students, Account Section of each college of university
Information Retrieval System (IRS):
To facilitate the efficient retrieval of published journal articles, books, and conference proceedings from employees and research scientists at JAU, an Information Retrieval System has been developed. This system proves invaluable during situations that require urgent data collection, enabling quick access to the desired information.   **Beneficiaries**: Employee/Research Scientists of JAU

Online IT Asset Management Solutions
In accordance with the statute of JAU, any procurement of IT-related products or services requires the technical recommendation of the Director(IT). This recommendation encompasses activities such as new purchases, repairs, or write-offs of IT products. To expedite the approval procedure, the entire process is conducted digitally. This digitization ensures a faster and more efficient approval process, streamlining the procurement of IT-related items and services within the organization. **Beneficiaries**: Purchase/Store section of each department
JAU Kiosk App
To cater to the needs of visiting farmers and stakeholders at JAU, dedicated kiosks located at "Krushi Darshanalay" and Sardar Smruti Kendras have been established. Through these innovative kiosks, JAU ensures that farmers and stakeholders have access to valuable agricultural information and assistance, fostering knowledge sharing and empowering them to make informed decisions in their farming practices. The development and maintenance of the kiosk applications are undertaken by the proficient IT Cell Team. **Beneficiaries** : Farmers, Students and all related stake holders
Online allocation system for Coconut Saplings & Seed Sales
Each year, the Agricultural Research Center (Fruit Crops) in Mahuva embarks on a mission to cultivate and distribute remarkable hybrid coconut D x T seedlings. Meanwhile, the Mega Seed department at JAU, Junagadh tirelessly develops an array of high-quality seeds, including those for wheat and groundnuts. In a powerful effort to support farmers, they open their doors to online applications from those eager to benefit from these valuable resources. The year 2022-2023 witnessed an astounding response, with the online application system expertly handling over 4,400 applications for coconut saplings, and an impressive 24,000 applications for the distribution of seeds. **Beneficiaries** : Farmers (Who are seeking seed or sapling)
Online Salary Management Software
On the university campus and off campus, there are roughly 58 withdrawal and payment officers from various offices. These officers were frequently required to visit the Office of the Comptroller to approve adjustments to the salaries of their staff members. These officers can complete this process online via the correct channel with the help of the Online Salary Management System. As a result, the process of approving salary bills got along more quickly and required less travel. Additionally, the facility is included in this online system to view individual salary slip by using their login information. **Beneficiaries** : DDOs and Comptroller of Office, Employee (For view salary slip and related report)
Online Grievances Redressal
The establishment of an online grievance redressal mechanism for the repair of IT hardware/software items and the campus area network has proven to be a transformative step. Throughout the year 2022-23, the IT Cell successfully resolved an impressive number of registered queries, demonstrating their commitment to efficient problem-solving. With over 441 hardware and 165 software-related issues addressed, this initiative has undoubtedly made a significant impact. By swiftly resolving these technical challenges, the IT Cell has not only enhanced the productivity and effectiveness of the organization but has also provided a seamless and uninterrupted digital experience for all stakeholders. **Beneficiaries** : JAU Staff

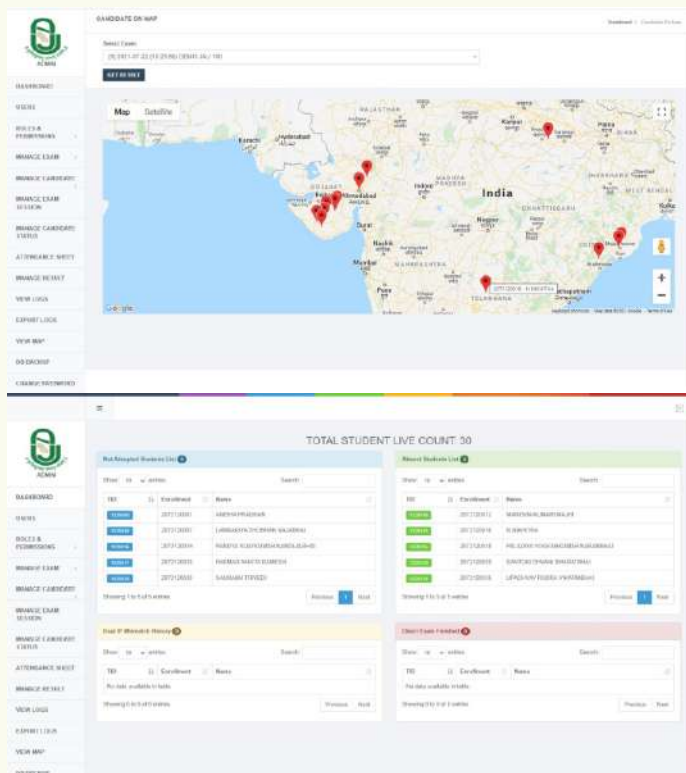| JAU iKrushi Sanhita |
|---|
| Empowered by the IT CELL, the JAU iKrushi Sanhita Android app is a beacon of support for farmers in Gujarat State, India, with an impressive record of over 1,000+ downloads. It goes beyond being a mere application, acting as a dedicated source of farming-related information in the local language. Through this platform, farmers gain access to valuable agricultural insights and weather-based agro advisory services. Moreover, the app stands as a conduit for disseminating information about agricultural education and diverse university activities. Within this user-friendly interface, individuals can effortlessly explore popular articles, FAQs, and delve into the rich repository of archived broadcasts from the Community Radio Station. It's not just an app; it's a motivational tool for farmers on their journey to success.
Beneficiaries : Farmers, Students and all related stake holders |
| **Online Billing and Accounting Software** |
| In the age of e-Governance, the imperative for digital billing processes and associated accounting reports has become undeniable. The IT Cell has crafted and oversees this software tailored for all types of procurement billing procedures. This tool not only saves time but also minimizes the need for extensive manpower, thereby enhancing the overall accuracy and capacity of accounting operations.
Beneficiaries : DDO, JAU Staff who engaged with procurement procedure |

Online Examination System

The adoption of online tests, also known as e-exams or electronic exams, has witnessed significant advancements and is now extensively utilized by higher education institutions worldwide. Particularly, the COVID-19 pandemic accelerated their widespread acceptance, as the preference for online exam management rapidly grew. This approach was chosen to prioritize the safety and well-being of students during and after the pandemic.

At Junagadh Agricultural University, numerous colleges successfully conducted over 700 exams for undergraduate, postgraduate, and polytechnic degrees. With a remarkable enrolment of more than 32,000 peer students, these exams were conducted under virtual supervision. The responsibility of overseeing this online exam system portal lies with the IT Cell.

This online exam system enabled students from various parts of India to actively participate in exams from the comfort of their homes. It eliminated the need for physical presence and allowed students to take exams securely and conveniently, ensuring a seamless evaluation process.

JAU Online Examination System

7.2.5. Other Services

Services include online circular management systems, billing and accounting, provident fund (PF) management solutions, salary management, IT asset management, IT grievance systems, online management for the government of India's "Mera Gaon Mera Gaurav (MGMG)" scheme, job application systems, online fee collection systems, eLearning solutions for students, online placement solutions, online alumni management systems and online mock test systems. The IT Cell has developed a local online system for registration and user management for the Government e-Marketplace (GeM). This facilitates university purchases made through GeM, streamlining procurement processes and enhancing efficiency.

Moreover, the IT Cell oversees various Google Apps, granting users access to a wide range of Google services such as Gmail, Google Drive, video conferencing via Google Meet, and many others. Furthermore, an online system has been established to provide services to farmers, including online weather updates, seed distribution, allocation of coconut saplings, FAQs, and more.

7.2.6. Reference Services

The university facilitates access to agricultural e-Resources for both UG/PG students working on research projects and university staff engaged in teaching and research activities through a local area network (LAN). This network enables users to explore valuable resources such as CAB, AGRIS, and AGRICOLA.

The entire university network grants users the ability to browse and search national and international journals through online access to the Consortium for eResources in Agriculture (CERA). Additionally, users can benefit from the J-Gate database and Krishikosh, an online service providing access to doctoral theses offered by All India Agricultural Universities. These resources enhance the research and learning experiences of students and staff, facilitating comprehensive access to scholarly information in the agricultural field.

E-Resources facilities for UG/PG students

7.2.7 Training

The IT Cell is dedicated to empowering rural women and youth by conducting regular training sessions on computer usage and internet connectivity. These sessions aim to disseminate valuable agricultural information among these individuals. Additionally, faculty and students receive training on effectively utilizing the resources provided by network services, enhancing their digital literacy.

Furthermore, when the University implements new digital initiatives, the IT Cell goes the extra mile by providing additional training sessions for university staff. These trainings cover various aspects such as the usage of online salary systems, online fee collection systems, online admission systems, and the government e-marketplace (GeM), among others. The IT Cell is committed to ensuring that staff members are well-equipped to embrace and utilize these digital tools effectively.

7.2.8 University Website

The IT Cell plays a vital role in managing and hosting the university's website, www.jau.in, ensuring it remains up-to-date. The website serves as a comprehensive resource, providing information on various academic matters such as admissions, academic rules, scholarships, library services, student results, and medals.

Additionally, the website regularly updates content related to important announcements, university circulars, tenders, advertisements, RTI (Right to Information), Farmers' Corner, current news, and upcoming as well as past activities. It serves as a hub of information on research, research recommendations, newly released varieties, university publications, memoranda of understanding, and other extension education activities. The website is diligently maintained and updated throughout the year.

To cater to farmers and disseminate agricultural-related information effectively, the website also includes content in the local language. This initiative aims to inform farmers about the various agricultural activities conducted by the university, empowering them to make timely and appropriate use of the available information.

7.2.9 Visitors

The IT Cell has had the honour of hosting numerous esteemed visitors who have lauded its initiatives. The IT students from various colleges in Junagadh city frequently visit the IT Cell as part of their project work, seeking inspiration and guidance.