



AKS University
SATNA

The University with Difference

6.5.3

"Quality Enhancing Initiative and Action Taken "
at AKS University, Satna
During last Five years (2019-2024)



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AKS UNIVERSITY, SATNA (M.P.)

Synopsis on

“Quality Enhancing Initiative and Action Taken “ at AKS University, Satna

AKS University has undertaken several quality enhancement initiatives in recent years, which can be categorized as follows:

1. Infrastructure Development and Support Services
2. Academic Activities
3. Research and Development
4. Consultancy and Technology Transfer Services
5. Extension Activities and Social Outreach Programmes
6. Student Support and Progression
7. Innovation and Best Practices
8. Sport Activity
9. Cultural Activity

1. Infrastructure Development and support services

During the presiding years the University infrastructure and support services has been augmented substantially which summarised below:

Initiative	Action taken
Infrastructure development	<ol style="list-style-type: none"> i. The university added E-Block (13382.9 SqM) for the Faculty of Agriculture and Computer Science. ii. Forty classrooms have been added, all equipped with audiovisual facilities. iii. Twenty state-of-the-art laboratories have been added with the latest equipment for R&D activities, including: <ul style="list-style-type: none"> • Cement and concrete lab for the Department of Cement Technology • Rock mechanics lab for the Department of Mining Engineering • Incubation center for the Department of Agricultural Engineering and Food Technology • Advanced tissue culture lab for Biotechnology iv. An auditorium with a capacity of 500 has been added to the existing two auditoriums. v. A 600-capacity examination hall has been developed for the Faculty of Agricultural Science and Technology. vi. A guest house facility has been established for the university. vii. Two polyhouses have been developed for the Horticulture Department.



	<p>viii. The existing cafeteria facility has been improved, and a cost-effective canteen for students has been established.</p> <p>ix. A media lab has been established, and a community center for rural farmers in and around Satna has been started.</p> <p>x. Block wise parking facilities developed for the student and staff.</p> <p>xi. The campus is fully Wi-Fi facility for both student and staff</p>
Library Facility	The central library facility has been enhanced, significantly increasing the seating capacity for reading. Additionally, internet access, reprography services, CD-ROMs, and online books and journals have been added to the library's services. The AKS University library is member of INDEST, INFILABNET, National Digital library of India (NDL) etc
Computer Facility	<ul style="list-style-type: none"> • Computer labs with 500 computers added to the existing facilities for the students, total making 1214 computers. • Established Centre for excellence in cyber security. • IBM Centre for AI and ML established.
Sports and Cultural	<p>i. A badminton and basketball court added in existing sports facility</p> <p>ii. A cultural center developed and appointed qualified faculty for the center development.</p> <p>iii. Cultural centre courses of dance, drama, music, singing etc.</p>
Clean energy initiation	<p>Power generation through solar energy (100 kW) has been initiated and established on rooftop of C&D academic block, with plans to extend it to the entire university.</p> <p>The university is committed to reducing utility electricity consumption by energy efficiency measures and integration of solar power plant generation with the existing infrastructure.</p> <p>We are using LED lamps in a phased manner.</p> <p>The university is in the process of replacing all existing AC's and light with efficient inverter base 5 star marking Air condition and LED lamps.</p>

2. Academic Activities

Initiative	Action taken
Curricular aspects	<p>i. The university revised the curricula to align with the Programme Outcomes (POs) and Course Outcomes (COs). Additionally, the NEP 2020 choice-based credit system has been implemented.</p> <p>ii. At present, the university offers 27 undergraduate, 26 postgraduate, 21 PhD, and 2 postgraduate diploma programs.</p> <p>Graduate Attributes and Outcomes:</p> <p>i. Graduate attributes and objectives/outcomes have been defined for all programs in all faculties of the university.</p> <p>ii. A continuous assessment and evaluation mechanism has been implemented.</p>



	<p>Inter-disciplinary Programme: Fifteen thrust areas have been identified, with an increased focus on interdisciplinary and innovative programs and research.</p> <p>Curriculum Design and Development: In the process of curriculum design and academic program development, valuable inputs and suggestions are obtained from the</p> <ul style="list-style-type: none"> • Advisory Board • Academic Council • Board of Studies • M.P. Private University Regulatory guidelines • Experts from National Institute of Teacher Training and Research (NITTR) Bhopal <p>Competitive examining bodies such as</p> <ul style="list-style-type: none"> • NET • GATE • UPSC <p>visiting professors, industry experts, senior students, employers, and alumni, and are incorporated into the curricula.</p> <p>The revised curriculum outlines the session outcomes for each unit of the course. It details the hours allocated for class instruction, laboratory work, sessional assignments, and student self-learning. Additionally, the scheme for end-semester evaluation is based on Bloom's Taxonomy and is thoroughly described.</p>
Centre to Plan Monitor and Implement	<p>The University has established ten centres to plan, implement, and monitor various initiatives:</p> <ol style="list-style-type: none"> i. Centre for Curricular Development ii. Centre for Innovation, Entrepreneurship, and Skill Development iii. Centre for NEP 2020 iv. Centre for Online Learning v. Centre for Indian Knowledge Systems (IKS) vi. Centre for Sustainable Development Goals (SDGs) vii. Centre for Indian Constitution Awareness viii. Centre for Women Development ix. Centre for Value Education x. Centre for Continuing Education
Teaching Learning and Evaluation	<p>Improvements in Learning Infrastructure and Resources:</p> <ol style="list-style-type: none"> i. The library now features digital sections equipped with internet access and e-resources for both students and faculty. ii. The entire campus is Wi-Fi enabled. iii. Most of the classrooms are equipped with LCD projectors and computers for delivering lectures. iv. Each faculty member has access to a smart classroom integrated with cutting-edge advanced teaching tools, enhancing the current teaching and learning process.



	<p>v. A comprehensive collection of major e-resources, including databases, e-journals, and e-books made available for students, researchers, and faculty members.</p> <p>Innovative Measures Introduced in pedagogy:</p> <p>Innovative measures introduced include upgrading computer systems and adopting student-centric teaching and learning approaches.</p> <ul style="list-style-type: none"> • ICT-enabled tools such as PowerPoint presentations • AI methods • Simulations • Animations • NPTEL online video lectures • MIT Open Course Ware <p>are utilized. Additionally, an institution-wide Learning Management System (LMS), specifically Moodle, has been implemented.</p> <ul style="list-style-type: none"> • Special attention and coaching are provided for slow learners. • The curriculum features skill development programs, a choice-based credit system. • project-based learning to enhance the overall educational experience. <p>Reform in Evaluation and Examination:</p> <p>Reforms introduced in the evaluation system include</p> <ul style="list-style-type: none"> • Implementing ERP systems • Continuous assessment and evaluation • Coding of examination papers • Central evaluation computerized result processing <p>The university adheres to UGC guidelines in these aspects.</p> <ul style="list-style-type: none"> • For Ph.D. theses, evaluation by an expert from another university and mandatory plagiarism checks before submission are required. • Final-year thesis, projects, and dissertations are evaluated by external experts. <p>To enhance the quality of education, AKS University has successfully implemented several mechanisms, including the Annual Academic Audit, Mentor-Mentee system, Student Feedback System, Faculty Appraisal System, and Faculty Development Programs.</p>
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3. Research and Development

Initiative	Action taken
Research and Development	<p>In recent years, AKS University has established research centers and 20 state-of-the-art laboratories to foster research and development in various cutting-edge areas. The Department of Horticulture, Department of Biotechnology, Green Chemistry Research, Department of Cement Technology and Food Technology, Blue Green Algae Laboratory, Mushroom production laboratory are conducting pioneering research in their respective fields. Notable outcomes of AKS University's research activities include:</p> <ol style="list-style-type: none"> i. Eco-Friendly Paints: The Green Chemistry Laboratory developed eco-friendly paints from plant and agricultural waste. ii. Waste Plastic Converter: The Chemistry Department developed a converter capable of transforming plastic waste into liquid fuel oil. iii. Machine for Arsenic (As) Removal from Water: A machine developed by the Chemistry Department for the separation of arsenic from water has been granted a patent iv. Crop Cafeteria: The University established a crop cafeteria featuring Kharif, Rabi, and Horticulture crops, growing high-yielding varieties at the AKS University Research Farm. v. Poly Houses: Two poly houses were developed under the Faculty of Agriculture Science and Technology for hands-on training and research in horticulture crops, including experiments with roses, gerbera, carnation, and exotic vegetables like broccoli, red cabbage, Chinese cabbage, lettuce, cucumber, and sponge gourd. These poly houses are also used for training extension workers and farmers. vi. Organic Farming Block: The University has designated 20 acres for organic farming, utilizing crop residue, cattle waste, and horticultural waste to produce compost. They successfully produce and use <ul style="list-style-type: none"> • organic insecticides • neem-based products • fasal Sanjivani • Amrat pani for growing rice • mung bean, wheat, gram, fodder crops, urad, and various vegetables in both Kharif and Rabi seasons. • These organic products are also provided to RAWE-adopted farmers. vii. Soybean Virus Research: The M.P. Biotechnology Council in Bhopal entrusted the Agriculture and Biotechnology Departments with an R&D project titled "Exploration of Genome Organization and the Creation of Economical Diagnostic Solutions for Soybean Viruses."



	<p>viii. Vermicompost Unit: A vermicompost unit with over 30 pits and a vermiwash unit was established near the dairy farm, producing more than 150 tons of vermicompost per year.</p> <p>ix. New Crop Variety: The Department of Horticulture developed a new red radish variety characterized by its striking red color and high yield of 200-250 q/ha. New variety of red okra and bottle</p> <p>x. Mushroom Cultivation and Training Center: The Faculty of Agriculture Science and Technology, along with the Faculty of Life Science Biotechnology Department, developed a mushroom cultivation and training center.</p> <p>xi. Crop Diversity Initiative: AKS University launched a research initiative titled "Enhancing Crop Diversity through the Introduction of New Crops in the Vindhya Region."</p> <p>xii. Tissue Culture Advancements: The Biotechnology Laboratory made significant advancements in tissue culture.</p> <p>xiii. Microbial Diversity Assessment: The University assessed the microbial diversity associated with hot springs in M.P. for screening industrially important enzymes and antibiotics.</p> <p>xiv. Economic Blasting Techniques for opencast Mining : The Mining Department developed economic control blasting techniques.</p> <p>xv. Fly Ash Utilization: The Cement Technology Department enhanced the use of fly ash in cement and concrete.</p> <p>xvi. Mushroom Production</p> <p>xvii. Blue Green Algae Laboratory</p> <p>xviii. Food Production</p> <p>xix. Chyawanprash</p> <p>xx. Sanitizers and Masks for precaution of COVID'19</p>
Research & collaboration	<p>Sincere efforts have been made to promote quality research and exchange programs.</p> <ul style="list-style-type: none"> • National and international collaborations have been established with reputed institutes and industries. • In recent years, the University has signed 141 MoUs with various institutes and universities to enhance research and collaboration activities including, IBM -USA, CSE council, Texas USA, University of Madla – Indonesia etc.
Research & publication	<p>AKS University encourages and promotes the publication of quality research papers, articles, books, technical articles, and book chapters by faculty members and students in national and international journals. During last five years the faculty of the University has published over 786 research papers and 100 books and 1,800 book chapters.</p>



	Several seminars and workshops on IPR, quality improvement, and sustenance measures have been conducted by various departments through the University's IQAC.
Patents	Till date, <ul style="list-style-type: none"> • 29 patents have been filed and published by various departments. • 09 of them having been granted. • Technology transfer has been done based on these patents.

4 Consultancy and Technology Transfer projects

Initiative	Action taken
Consultancy and Technology Transfer Services	<p>The Departments of Mining, Environment, Biotechnology, Agricultural Science, and Management offer consultancy services to various industries. Technologies developed by these departments, such as</p> <ul style="list-style-type: none"> • Eco-friendly paint from the Green Chemistry Lab • Optimized blasting techniques from the Mining Department, <p>have been successfully transferred to industry. Other innovations include high-yield seed varieties.</p> <p>The Faculty of Agriculture, Department of Mining Engineering, Department of Cement Technology, Department of Biotechnology, Department of Pharmacy, Department of Computer Science, and Department of Management also conduct training programs for various industries and institutions under their consultancy services. These activities generate significant revenue for the university.</p> <p>The Biotechnology Department has been awarded a project worth Rs 2.64 crores by the Government of Madhya Pradesh for training and consultancy.</p>

5 . Extension Activities and Social Outreach Programme

Initiative	Action taken
Extension activities	<p>The university undertakes need-based extension activities to protect the environment, promote plantation, and conduct awareness programs on advanced agricultural methods to enhance the rural farmers' economy, alongside other social outreach efforts. As part of these initiatives,</p> <ul style="list-style-type: none"> • University Agriculture department has established Nutigraden in 37 villages. • AKS University has established a community radio center for farmers. • Adopted 35 villages in and around Satna. • Regularly conducts awareness programs and workshops on advanced agricultural technology for rural farmers.



	<p>Additionally,</p> <ul style="list-style-type: none"> • The university organizes a three-day Kisan Mela every alternate year in collaboration with the Government of Madhya Pradesh, attracting more than 10,000 farmers and 50 agriculture machinery manufacturers and service providers each time. • The university's NCC, NSS, and UCC students also contribute by providing services for health camps, environmental awareness programs, and Swachhata Abhiyan initiatives, periodically organized by the Departments of Pharmacy, Paramedical, and Environment. • University offers free teaching services to economically disadvantaged students as part of these activities.
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6. Student Support and Progression

Initiative	Action taken
Student Talent Development Activity	<p>AKS University has implemented various quality initiatives to foster the hidden talents and overall personality development of students through institutional measures.</p> <p>The university supports 10 student clubs and 5 student chapters by providing necessary resources and encouragement.</p> <p>Key co-curricular activities organized annually include</p> <ul style="list-style-type: none"> • Techno fest • Food Fest • Hackathon, • University Premier League by the Cricket Club • Photographic competitions by the Photographic Club etc. <p>Additionally, a variety of literary, cultural, technical, academic, and community-oriented events are regularly held to promote group activities among students and showcase their talents.</p> <p>In 2022-23, the university hosted the 36th Inter-University Cultural Fest for the Central Zone, attracting participation from 22 universities and over 800 students.</p> <ul style="list-style-type: none"> • The five-day cultural fest featured 27 different categories of events. • The university also focuses on enhancing student skills and employability through training sessions conducted by both national and international experts, pre-placement training, skill enhancement programs, • Support for entrepreneurial ventures and startups.



	<ul style="list-style-type: none"> • A robust mentor-mentee system further contributes to the development of students' knowledge and skills.
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7. Innovation and Best Practices

Initiative	Action taken
<p>Innovative measures of the University</p>	<ul style="list-style-type: none"> • Each year, the university plants saplings on campus to increase its green coverage. • It has established state-of-the-art laboratories that drive cutting-edge research in Agriculture, energy conservation, renewable energy, water utilization, and computer applications. • These facilities are equipped with solar photovoltaic systems, both on-grid and off-grid inverters, and various electrical testing devices. • Notably, one of the five academic blocks operates entirely on solar energy. <p>Additionally,</p> <ul style="list-style-type: none"> • The university has developed an in-house Enterprise Resource Planning (ERP) system led by dedicated software experts. • This ERP initiative aims to establish a comprehensive digital database covering all academic activities, thereby enhancing operational efficiency across the institution. • Outcome-based learning has been implemented across all 76 programs. The classrooms are equipped with ICT facilities, and the admission process is computerized and fully transparent. <p>The university provides access to</p> <ul style="list-style-type: none"> • NPTEL online video lectures • MIT Open Course Ware • Moodle for learning management • an institutional LMS. <p>During the Covid-19 pandemic, the university developed over 1,00,000 online lectures to ensure continuity in academic activities.</p> <ul style="list-style-type: none"> • The university has initiated the development of a herbal garden featuring medicinal plants and a Nakshatravatika, demonstrating its commitment to advancing herbal medicine. <p>The university has compiled a biodiversity databank of Madhya Pradesh, documenting various species, including 500 rare and endangered species, for the Government of Madhya Pradesh in 2023-24.</p>
<p>University Best Practices</p>	<p>AKS University has implemented two effective strategies: a Mentorship Program for personalized student support and Interdisciplinary Research Centers (IRCs) to promote collaboration and innovation. The university's best practices are summarized below:</p>



	<ul style="list-style-type: none"> i. The Mentorship Program aims to nurture holistic student development through tailored guidance and resources, enhancing student outcomes and fostering a supportive learning environment. ii. Meanwhile, IRCs facilitate cross-disciplinary collaborations, integrating diverse expertise to tackle complex challenges and drive innovative solutions. iii. These centers play a crucial role in advancing knowledge and societal progress by fostering synergies across academic disciplines. iv. AKS University's commitment to entrepreneurship and innovation further distinguishes it, empowering both students and faculty to pioneer positive change. v. As a leader in higher education, AKS University continues to shape the future of innovation and entrepreneurship, reinforcing its role in fostering academic excellence and societal impact, not just within India but globally.
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