

# ANDHRA UNIVERSITY



## STRATEGIC PLAN (2017-2027)

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# 1. Overview of Andhra University:

Ever since its inception in 1926 Andhra University has an impeccable record of catering to educational needs and addressing the sociological problems of the region. The University is relentless in its efforts in maintaining standards in teaching and research, ensuring proper character building and development among the students, encouraging community developmental programmes, nurturing leadership and patriotism in young men and women and imbibing a sense of responsibility to become good citizens of the country, while striving for excellence in all fronts.

Andhra University is not just one of the oldest educational institutions in the country, but is also to be conceived as a residential and teaching-cum-affiliating University, mainly devoted to post-graduate teaching and research. The people of the State have an emotional attachment to the institution, since it came into being after a prolonged and collective struggle of the Telugu elite for a University in the educationally backward for the Circar and Ceded districts of the erstwhile Madras Presidency.

Andhra University was constituted by the Madras Act of 1926. The 91-year-old institution is fortunate to have Sir C.R. Reddy as its founder Vice-Chancellor, as the steps taken by this visionary proved to be fruitful in the long run. Thanks to his efforts-the University which started functioning from rented premises in Vijayawada the erstwhile Bezawada, was shifted to Visakhapatnam. The University could not plan any real academic programme until it moved to Visakhapatnam on 5th September, 1930. It started functioning there in a building called Hotel Cecil with a ground of about 51 acres around it. This is the piece of land the University purchased later for Rs.2.00lakhs and is now identified as a part of the south campus.

Former President of India Dr. Sarvepalli Radhakrishnan was the successive Vice-Chancellor who succeeded Dr. C. R. Reddy in 1931. Even though the foundation was laid by Dr.Reddy, the real academic functioning started during the tenure of Dr. Radhakrishnan. The University College of Arts was inaugurated on 1st July, 1931 in a building called Bobbili Hall; generously made available for use of the University by the Rajah Saheb of Bobbili. The inaugural courses were Telugu language and literature, History, Economics and Politics. A year later, the College of Science and Technology came into being with Honours courses in Physics and Chemistry. The University was patronized by the Rajah of Jeyapure (Orissa), Rajah Vikram Deo Varma, who provided an annual grant of Rs. 1 lakh. His benevolence helped the University develop the AU College of Science & Technology, which was later named after him. The University since then never looked back and new courses like, Mathematics, Philosophy, Honours in Commerce etc, were started. During the period 1931- 1936 the University saw a lot of construction activity for the Colleges of Arts and Science & Technology. Many hostel blocks were constructed in this period.

During, Dr. C. R. Reddy's second stint as Vice-chancellor for 13 years and later under the leadership of Dr. V.S. Krishna till 1961, solid foundations were laid keeping the future perspectives in view. During this period the University has expanded in all directions that lead and helped the institution to reach its set goals. These leaders always believed that excellence in higher education is the best investment for the country and introduced several courses and engaged the services of famous educationists such as Dr. T.R. Seshadri, Dr. S. Bhagavantham, Professor Hiren Mukherjee, Professor Humayan Kabir, Professor Kandula Nagabhushanam and Dr.V.K.R.V.Rao, to mention a few whose high standards paved the way for effective teaching and research.

In this period the University has seen tremendous growth in all spheres, even though there was a hold back in its progress, due to Second World War from 1942-46 when the University was temporarily shifted to Guntur. Courses

were introduced in English, Law, Nuclear Physics, Meteorology, Applied Physics and Pharmacy were started in 1956. New courses like Anthropology, Sociology, Cooperation and Applied Economics were started in Arts during sixties. Several new courses of relevance and contemporary significance were started and new departments and specializations were established over the next half a century keeping in pace with the global needs and challenges under the leadership and guidance of successive Vice-chancellors.

Due to enormous expansion of the University and the need for administrative convenience, three constituent colleges namely College of Arts, Commerce and Law, College of Science and Technology and College of Engineering were formed in 1966. In 1992 the College of Law was separated from the College of Arts, Commerce and Law and in 2006 College of Pharmacy got a separate identity. Andhra University College of Engineering for Women was started in the year 2010. Thus at present the University has six constituent colleges.

The University started its research academic programme in 1936, with six students assisted by a handful of teachers. The strength of the students increased to 17 in the second year. The student strength rose to 2800 in 1966 and now to the 12,000 mark.

Due to heavy demand for higher education in the region new PG Centres were started in Guntur and Nuzvid. The PG Centre in Guntur was elevated as a University in 1976 and is presently known as Acharya Nagarjuna University. The PG Centre at Nuzvid has now become a part of Krishna University. Andhra University started Post-graduate Centres in Kakinada in the year 1977 and it became a part of Adikavi Nannaya University in the year 2016. The P.G. Center established in Srikakulam in the year 1977 became Dr. B.R Ambedkar University in the year 2008. Andhra University campus at Tadepalligudem was established in the year 2004 and it became a part of Adikavi Nannaya University in the year 2016.

Andhra University campus in Vizianagaram was established in the year 2004 and is continuing its academic pursuit with 6 courses. Andhra University is a multi-disciplinary University offering varied courses in emerging areas. Andhra University has distinguished itself by starting many courses those are innovative and first of their kind in India. The University is strong in basic sciences like Mathematics, Physics, Chemistry, Botany, Zoology, Geology, Geography etc. The University is equally competent in applied sciences like Biochemistry, Biotechnology, Microbiology, Molecular Biology, Human Genetics, Environmental Sciences, Geophysics, Geo-Engineering, Remote Sensing, Nuclear Physics, Meteorology, Oceanography, Nuclear Chemistry, Environmental Chemistry, Bioinorganic Chemistry etc. The institution is unique in offering courses like Plant Cytogenetics, Parasitology, Marine Fisheries, Entomology, Hydrology, Human Genetics, ionosphere Studies, Petroleum Exploration Studies, Pharmaceutical Sciences, Nano science, Foods, drugs and water etc.

The University pioneered in designing and offering courses in Business Management Quantitative Economics, Criminal Justice, Meteorology & Oceanography, Nuclear Physics, Nuclear Chemistry, Parapsychology, Genetics, Gemology, Geo-Engineering, Petroleum Exploration etc. The humanities and social sciences courses like English, Telugu, Sanskrit, Hindi, Urdu, Arabic, Anthropology, Economics, Political Science, Social Work, Sociology, History & Archaeology, Yoga, Philosophy, Dance, Music, Performing Arts, Theatre Arts, Fine Arts etc. offered by the University have a great reputation of their own. The College of Engineering offers 16 UG, 33 PG and 10 Integrated (B.Tech. + M. Tech) programmes in 15 Departments. The courses like chemical Engineering, Computers, Electronics & Communications, Civil Engineering, Mechanical Engineering, Remote Sensing, Marine Engineering, Naval Architecture, Nanotechnology, Artificial Intelligence, Bioinformatics and Biomedical Engineering have made a mark for themselves.

The College of Law is one of the best in the country offering LLB, LLM, and Ph.D Programmes. Most of the Judges of High Courts and Supreme Court are the proud alumni of Dr. B. R. Ambedkar College of Law. The



Department of Pharmacy is also well known for its teaching and research and many of its alumni are occupying key positions in Industry, Teaching and Research Institutes.

The School of Distance Education, of Andhra University, being the second institution in South India and being one among the first five institutes in the country to start courses under distance mode in 1972, with its network of about 38 study centres covering the state of Andhra Pradesh and a student enrolment of about 50,000 offers 48 conventional, professional and non-conventional courses in tune with societal demands in the form of certificate, diploma, P.G. Diploma, U.G., & P.G. courses to the people who could not pursue their studies under regular stream on account of socio-economic reasons.

Considering the merits of the University, the National Assessment and Accreditation Council of India has reaccredited at “A” Grade with a CGPA of 3.60 out of four point scale in 2016. The University got ISO 9001:2008 certification in 2006 and it is the 1st general University in the country to have ISO certification. Presently it possesses ISO 9001:2015 certification for its quality standards.

The University has been offering about 260 courses in diversified fields through 69 Departments with qualified faculty strength of 450 members to meet the learning requirements of around 12000 students including full time research scholars and 382 foreign students belonging to countries like Ethiopia, Afghanistan, Nepal, Iran, Iraq, Sri Lanka, Bhutan, Vietnam, Korea, South Africa, etc.

The University has developed research infrastructure in all departments and research centres with the support of funding agencies and industrial organizations. The major in of faculty members got Major Research Projects supported by National and International organizations. Some researchers got patents for their research output and many others have applied for patents. Based on the research outcome of the University during the last five years the Department of Science and Technology, Government of India awarded second phase PURSE Programme. The DST has identified Andhra University as one of the 14 performing Institutions in terms of research contributions. The h-Index based on Scopus for the University stands at 62. Centre for space Sciences & Technology Education (CSTE-AP) in Asia Pacific has recognized the University for Academic Standards and sponsored four M.Tech. programmes. This is the only University in India selected for this programme. Research programmes leading to M.Phil. and Ph.D. are offered in all disciplines. A number of research centres have been established to carry out focused research. The University is also having 16 Research centres in the campus like Agro- Economic Research Centre, Centre for Religious studies, Centre for Women's Studies, Population Research Centre, Centre for studies on Bay of Bengal, Delta Studies Institute, etc.,

The standards of teaching and the status of the University always rest on the quality of research work carried out and accordingly the Andhra University has been at the forefront in several thrust areas like marine sciences, space physics, genetic engineering, cancer genetics, nuclear spectroscopy, nano-technology, remote sensing, EMI/EMC antennas, energy engineering, tribal health, entrepreneurship development, micro finance, health counselling, teacher education, family and social development. Interdepartmental and interdisciplinary research projects are widely undertaken. It stands as an ample testimony for the academic zeal and enthusiasm to procure process, analyze and share the fruitful dividends of prolonged research output for the common benefit of the society at large.

The University has the distinction of having 6 Shanti Swarup Bhatnagar Awardees, 3 Padma Vibhushan Awardees, 3 Padma sri Awardees and One Sahitya Academy Awardee among its academic staff members. Nobel Laureate C V Raman was the proud alumnus of the University and closely associated in laying research foundations in Physics. Padma Vibhushan Prof. C R Rao, the renowned statistician of the world, Sri Venkaiah Naidu, Vice President of India, and many more distinguished personalities are also the proud alumnus of the

University. The University in general and its alumni in particular have contributed significantly to the healthy growth of the Nation in various fields of knowledge. It's reputation as one of the premier institutions in the country has spread far and wide. The University enjoys patronage of several institutions and philanthropists who have awarded chairs, 13 endowment lectures and about 400 endowments for award of medals and prizes.

The University is spread in a sprawling campus of 531.0 acres dotted with 121 buildings of Academic, Administrative and support services with a plinth area of about 20 lakhs sq.ft., and 324 staff quarters. Presently the University is catering to the Educational needs of two green districts of Andhra Pradesh namely Visakhapatnam, and Vizianagaram. There are 368 affiliated colleges spread across five districts under the territorial jurisdiction of Andhra University. The enrolment in Affiliated Colleges is more than one lakh.

The University has developed network with industry, business, NGOs and Government organizations. Many academic departments take up consultancy works in the form of projects, training, advisory, counselling, design, and so on. The University has established a University Development Centre to coordinate consultancy services and to act as liaison between the University and the client.

Thus, with all the 91 years of its existence, individual achievements and positions occupied by the faculty and alumni, academic achievements, research output coupling with starting new innovative courses, centres and institutes for the first time in the country, Andhra University has an impeccable record of catering to the educational needs and addressing the sociological problems of the region. It is relentless in its efforts in maintaining standards in teaching and research, ensuring proper character building and development among the students, encouraging community developmental programmes, nurturing leadership and patriotism in young men and women and imbibing a sense of responsibility to become responsible and responsive citizens of the country, while striving for excellence in all fronts.

## **2.University Highlights:**

Andhra University, one of the oldest and top ranked multi-disciplinary educational institutions in India, was established in 1926. Attaining and sustaining the institutional excellence have been the prime concerns of Andhra University and blessed is the academic community that contributes to its growth. An institution nurtured by two great visionaries — Sir C R Reddy and Dr. Sarvepalli Radhakrishnan, Andhra University has been striving hard to keep the brand value of being a unique seat of higher learning with multi-faceted activities in diversified disciplines with contributions that attracted international reputation.

Keeping with the ethos of contemporary academic scenario, the institution is moving forward, exploring the scope for integration of science, technology, humanities, social sciences, population dynamics and societal thought that could enable the university to emerge as a competitive educational and research hub. Since good quality research has been the back bone for any university accreditation, a special emphasis is being laid to strengthen academic networking and promote national and international collaborations in cutting edge areas of basic and applied sciences, arts, commerce, management, law, pharmacy, engineering and other forms of traditional arts and culture that would entrance the global visibility of the university.

Having established the tradition of imparting quality education, the university has been the natural destination or many of the aspirants in the pursuit of academic excellence and therefore student strength has

been growing year after year. It is worth mentioning here that the international student strength has substantially gone up over the past couple of years. Though there has been a difficulty in the recent times with the faculty position due to the superannuation of many senior faculty and various technical reasons on the policy of recruitment, every effort is being made for the most effective implementation of all academic programs. The university has provided platform for organization of many national and international conferences during this year also with as many as 57 in arts and commerce, 32 in science, technology and pharmacy and 52 in engineering disciplines providing an opportunity for the young researchers and students to receive inputs from experts in their respective fields of study and also to forge new collaborative research programs. Continuing the legacy as usual, many of the faculty members participated and delivered key note addresses, invited talks/lectures and presented papers at the national and international forums. The number of publications that emerged out of the research programs of the faculty members has been satisfactory though there is need for further enhancement of such activity, both qualitative and quantitative to sustain the global reputation.

The Students of Andhra University enjoy an array of activities on campus. In order to provide employability skills, each constituent college has a placement cell with a concern for developing soft skills and life skills of the students to prepare them to face competition in the job market. These activities enhance student's proficiency in critical thinking, problem solving and communication, thereby increasing their ability to contribute to the positive and productive social experience. Most of the department and college placement cells promote student participation in internships, skill development programs and career guidance. The placement record during the year has been quite satisfactory with pay bands between 9.0 lakhs per annum to 3.75 lakhs per annum with a median package of Rs. 4.65 lakhs per annum. The significant achievement of the students of the University can be seen from the placement record of 108 companies providing campus placement to students.

On the sports front and Physical education, four new events were introduced during the year 2019-20, viz., kickboxing, soft ball, gymnastics and roller sports. The participation of Andhra University teams in the Para Olympics is commendable with athletes and badminton players winning gold, silver and bronze medals. One of the most remarkable developments is the renovation of the Golden jubilee grounds by relaying the entire play field. With the increase in the number of students, there is tremendous pressure on the hostel facilities and no effort is spared to provide good campus life to the students. The National Service Scheme activities of Andhra University have built a positive bridge between academia and society. Many activities that address some of crucial and contemporary societal issues have been organized by AU- NSS teams and to mention a few are Vanam Manam, coastal clean-up, Swachhta HiSewa (SHS), Road safety, Swachh Andhra (ODF), AIDS awareness, human rights, Pulse Polio, child rights, attitudes of exclusion and attempts for inclusion, adolescent empowerment, drug abuse etc.

A successful research environment is characterized by the standard of infrastructure and keeping pace with the current technological developments, Andhra University fraternity is making all efforts to build world class state of the art infrastructure for research and training. Several research projects were completed during the year and sizable funding is available for projects that are ongoing. Besides the research projects, many departments are identified by the University Grants Commission as centres for special assistance and centres of advanced study with substantial research funding. The AU is also receiving funding under DST FIST and PURSE programs. With DST-PURSE support, a central facility named Advanced analytical laboratory has been created that caters to the needs of researchers working in material sciences, nanotechnology, physics, pharmacy and other allied fields. This is also augmented by NMR Research centre in the Department of Physics. 460+ doctoral degrees in different disciplines were awarded during this

year. Many of the faculty members received national and international awards and some are serving National and international academic, research and technical committees.

The University has the unique distinction of being the seat for many research centres. The University has established 16 Research Centre's to carry out advanced research in multi-disciplinary areas with specific focus to address issues pertinent to the needs of the contemporary society such as: (i) Agro Economic Research Centre (ii) Dr. Durgabhai Desmukh Centre for amen studies: (iii) Delta Studies Institute; (iv) Centre for Ocean & Atmospheric Science & Technology Centre (OASTC); (v) Population Research Centre; (vi) Centre for Studies on Bay of Bengal; (vii) Centre for Gandhian Studies; (viii) Centre for study of Social Exclusion and Inclusive Policy; (ix) Centre for Hydrology and Ground Water Resources Management; (x) The Japanese information and study centre; (xi) NMR Research Centre; (xii) Centre for Religion studies; (xiii) Centre for Nano-Technology; (xiv) Centre for Defence studies. These many centres for excellence are created at Andhra University to impact skill development in youth and enhance employability.

The University has entered into 15 Memorandum of Understandings with several professional agencies, academic institutions, industries in its continued effort to strengthen the application content of all the academic programs to develop collaborative research and to enhance practical orientation and employability of the students.

As a part of the academic outreach program, Andhra University Human resource development centre is organizing orientation programs and refresher courses in various disciplines for the faculty of the region around. Realizing the societal responsibility and to provide an opportunity to the warriors in the tri services of the Indian armed forces for academic progression that enable them to take up a second career, Andhra University has affiliated with INS Vishwakarma for the award of B.Sc. Degree in Naval ship building and hull maintenance and College of Air warfare for the award of M.A. in Political sciences and strategic studies. The Andhra University academic senate has also approved the award of diploma and certificate programs for the different trade trainings being offered by the Indian Air Force by credit transfer. Another key strength of the university in providing outreach is the school of distance education offering various UG and PG programs and skill development courses facilitating contact programs at 24 study centres.

Andhra University has a well-structured management system with the Executive Council as the apex body for making policy decisions and being implemented by university administration and various sub-committees. The academic programs are being formulated, revised and modified by the boards of studies of the respective disciplines and approved by the academic senate. Internal quality assurance has been the back bone of the Institutional accreditation and to that end, Andhra University Internal Quality Assurance cell has designed and implemented quality management system and the University now has the unique distinction of being the first general university in the country to get ISO 9001:2015 certifications. Successful alumni management involves building up connections and providing a platform for the inspiration and benefit of the institution and the academic community. To meet this objective, Andhra University has formulated the policy of organizing Andhra University Alumni Association meet.

Despite the fact, that the University has been facing financial constraints due to multiple reasons, some of them are sensitive, to mention. The University during the last one year is able to consolidate and realize finances and attempt is being made to streamline the income and expenditure details of the University the finances using computerisation. Some large volume of financial transactions that have been taken place in examinations and are also trying to reconcile it periodically. The financial position of the University during the last one year is not attractive with deficit of around Rs.120.00 Crore.



If we agree with the words of Nelson R Mandela as “Education is the most powerful tool with which we can change the world” and this great institution Andhra University has been striving hard to provide an opportunity for creative learning that ushers in the generation of talented human resources that the India needs at this juncture to compete globally. Andhra University embracing the change and dynamically transcending from traditional higher education and putting the student and education in prime focus would definitely transform into a world class university in the near future. In this context, the unstinted support that the university received from the Government of Andhra Pradesh is gratefully acknowledged.

### 3. Vision and Mission

**Vision :** To Create New Frontiers of Knowledge in quest for development of the Humane and Just Society.

**Mission:**

- To Stimulate the academic for promotion of quality of teaching, learning and research.
- To undertake quality related research studies, consultancy and training programmes.
- To foster global competencies among student and to inculcate value system in them.
- To promote the use of State of the Art Technology and Quest for Excellence.

### 4. Goals and Objectives:

**The University was established with following goals and objectives:**

- To encourage creation and dissemination of knowledge
- To strive for advancement of Science and Technology by undertaking Research in frontier areas.
- To promote study in areas of contemporary relevance and societal importance
- To impart training in specialized areas that bear direct relationship to industrial establishment and globally competitive technological needs
- To make special provision for the spread of Higher education through non-formal education
- To envisage programs that have contemporary relevance to technology innovation and social outreach
- To project each of the University departments as a research center focused on International priorities and societal needs
- To collaborate with other stake holders of Higher Education

**Values:**

- **Collaboration:** To work with all its stake holders and other organizations and companies in collaboration with respect, caring and compassion.
- **Commitment:** Committed to become world class university using state of art infrastructure to improve the efficiency of students, faculty and scientists, in achieving quality of life in the society and for continuous improvement of knowledge and skill levels.
- **Diversity and Inclusion:** The University embraces the differences of others and foster harmony among all sections of people
- **Equity:** The university believes in value-based education and provide equal opportunities to everyone.

- Excellence: The university pursues world class outcomes in faculty and students.
- Innovation: The university creates and implements new practices, processes, products and transfers the knowledge
- Integrity: To perform the work with honesty and empathy and hold accountability to the highest standards of professional behavior and ethics

## 5. SWOT Analysis

The key findings of a rigorous SWOT analysis of the University are presented here.

### Strengths:

- Well established academic and administrative system and governance
- Positive and pro-active Campus Climate enhancing teaching learning processes
- Institutional image worldwide
- Qualitative research outcome and impressive growth in h-index
- Diverse student body-prevailing cosmopolitan culture
- Well qualified and committed human resource in teaching and nonteaching positions
- Adaptability to the emerging needs of the society
- Good Infrastructural & student amenities.
- Collaborative culture as reflected by the numerous collaborative research and teaching programmes and more specifically, an established tradition of excellence over a wide spectrum of disciplines
- A periodic retrospect and implementation of mid-course correction for a better prospect

### Weaknesses:

- Being a 91 years old university, ageing structures are making it difficult for the maintenance of physical and academic infrastructure.
- Procedural delay in faculty and administrative staff recruitment
- Realising additional financial resources to execute developmental and expansion plans
- Higher workloads for faculty in view of the new and multi-disciplinary programmes
- Student adaptability to the university learning, particularly for students with rural base
- Imbalanced match between research expectations and support
- Support required to involve foreign faculty

### Opportunities:

- Spacious campus with lot of scope for extension and developmental activities.
- More scope for interactive research and teaching in collaboration with other institutions and industries.
- Increased value of Higher Education.
- Academic heritage and strategic location
- Scope for international networking through collaborative research and alumni and NRI support
- Expanded and growth potential.
- Large student pool.

- Increased interest in global initiatives.
- Capitalize the opportunity of providing extensive support for incubation centers.
- Alternative funding avenues

### **Threats**

- State financial position after bifurcation, not permitting additional funding on certain occasions.
- Increased expectations by Government and Society.
- Development of other small Universities in the area.
- Shift in focus on numerical achievement vs. qualitative achievement
- Societal and student perception as sole means for a Job, hampering educational progression.
- Shift in priority for professional and technical courses

Based on SWOT analysis, proposed measures to address the short comings:

After careful study of the Strengths, Weakness, Opportunities and Threats, a committee consisting of Principals and senior faculty is constituted to identify the plan for institutional development. The committee felt that immediate action for institutional development is needed to overcome the weaknesses. The following strategic plan is suggested by the committee

- Immediate action plan to refurbish the physical and academic infrastructure in view of the ageing
- High priority to accelerate faculty and staff recruitment by a strategic plan to overcome the procedural barriers
- Multi-disciplinary teams are being formulated to tap additional financial resources
- Creation of opportunities to involve visiting and adjunct faculty from industry and superannuated academia releasing the over-burdened faculty for a better academic performance
- Orientation programs and bridge courses for students with rural academic background for enhancing adoptability to university education
- Faculty working in allied research areas belonging different disciplines are being formulated into teams with bigger scientific programs for exploiting the major funding opportunities. More thrust on academia and industry interaction to take up collaborative research programs for mutual benefit
- NRI and alumni support will be solicited to involve foreign faculty. Group networking is planned to provide better communication on the on-going and envisaged research programs to generate interest in foreign scientists for collaboration and exchange.
- To address qualitative enhancement of publications, it is made mandatory that all faculty need to publish articles in high rated/Scopus indexed journals. All doctoral students are required to publish a given minimum number of papers before they submit their thesis for adjudication.

## 6. Strategic plan for 2017-2027 to become World Class University

<i>S.No.</i>	<i>Parameter</i>	<i>Current status/existing disciplines</i>	<i>Five years</i>	<i>Ten Years</i>
1	Multidisciplinary and Inter-disciplinary Teaching	<p>30% departments are involving in interdisciplinary / multidisciplinary courses / specializations</p> <p>The following are multi disciplinary and inter disciplinary courses offered in the University</p> <p>M.Sc. Environmental Science</p> <p>M.Sc. Marine Chemistry.</p> <p>M.Sc. Bio-Chemistry</p> <p>M.Sc. Bio Technology</p> <p>M.Sc. Agricultural bio-technology</p> <p>M.Sc. Bio-informatics</p> <p>M.Sc. Marine Geology</p> <p>M.Sc. Marine Biology and Fisheries</p> <p>M.Sc. Marine Bio-technology</p> <p>M.Sc. Marine Geophysics</p> <p>M. Tech. Petroleum Geology</p> <p>M.A. Women Studies</p>	<p>35% departments are to be involved in interdisciplinary / multidisciplinary courses / specializations</p> <p>The following new courses will be started</p> <p>M Tech Data Analytics and Cyber security</p> <p>M Tech Green Manufacturing</p> <p>MA Tourism and Hospitality Management</p> <p>B L Maritime Law</p> <p>B.Tech Environmental Science, Engineering and Management</p>	<p>50% departments are to be involved in interdisciplinary / multidisciplinary courses / specializations</p> <p>The following new courses will be started</p> <p>M Tech Computer integrated manufacturing</p> <p>MBA Business Analytics</p>



		M.Sc. Environmental Chemistry M.Tech. Industrial pollution control engineering M.Tech. Computer aided chemical Engineering M.Tech. Environmental Engineering and Management		
2	Multidisciplinary and Inter-disciplinary research	30% departments and 50% faculty are involved in interdisciplinary / multidisciplinary research  Multidisciplinary teams are working in the following 13 research areas: Climate change Space weather and operational systems Numerical weather forecasting Environmental chemistry Atmospheric meso-scale modelling Geospatial analytics Inter-disciplinary modelling and simulation studies Industrial statistics Statistical signal processing Relativity and cosmology Marine bio-diversity Nano materials Cyber security <u>Existing research Centres (12)</u>	40% departments and 60% faculty to be engaged in interdisciplinary / multi disciplinary research  It is proposed to work on the following multidisciplinary research themes that are relevant to the future earth and sustainable Humanosphere besides continuing the already existing research themes with linkage to the focus area:  Centre for Marine Bio-diversity studies  Centre for modelling and informatics  Centre for advanced research on drug discovery and management  Drug synthesis and health care management  Climate change vis-a-vis Indian monsoons  Innovative Yoga for chronic ailments	50% departments and 70% faculty to be engaged in interdisciplinary / multi disciplinary research  Proposed themes/centres  Streaming data analysis  Smart city analytics

		Population Research Centre Agro Economic Research Centre Centre for delta Studies Centre for studies on Bay of Bengal Centre for Hydrology and Ground water resource management Centre for Nanotechnology Centre for Delta Studies Centre for Gandhian studies Dr.Durgabhai Deshmukh Centre for women studies Centre for Social inclusive and exclusive policy studies Centre for SAARC studies Centre for data analytics and cyber security		
3	Foreign/foreign trained faculty	The following departments are having foreign trained faculty. 1. Applied Mathematics 2. Environmental Sciences 3. Geology 4. Chemistry 5. Mathematics 6. Meteorology and Oceanography 7. Pharmacy 8. Commerce and Management studies	Andhra University proposes to increase the foreign/ foreign trained faculty to at least 8% in the coming 5 years by inviting the scientific collaborators of various faculty members either by supporting them from the programmes available from different national and international funding agencies. In addition, efforts will be made to involve distinguished researchers by propagating the novel programmes	The targeted 15% foreign trained faculty .

		There are 5% faculty members who are well trained in abroad. In addition to this, some NRIs are visiting Andhra University and are collaborating with AU faculty.	being conceived by the university fraternity.	
4	Mix of domestic and foreign students.	The current mix of foreign to Indian student ratio on the campus is 3%.	<p>The strategy proposed for the enhancement of this mix to 8% is by promoting more under graduate and post graduate admissions by initiating inter disciplinary/multi-disciplinary programmes in the global outlook.</p> <p>It is proposed to work with the embassies/consulates of different countries and plan to work out a methodology for supporting the international students with bi-lateral agreements.</p> <p>The university is contemplating to enhance the twinning programmes and also to initiate student exchange programmes so that a global visibility is created for the programmes of Andhra University.</p>	Targeted ratio is 14%
5	Admission process	The University already has an undisputed and transparent online admission procedure, adhering to the statutory norms.	Efforts will be made to incorporate the technology advancement in the admission process	

6	Financial support to the students	60% of the students are supported by various student scholarships as per various governmental programmes.	<p>It is planned to support 70% students and 80% research scholars to get fellowships.</p> <p>The university will provide some merit cum means scholarships through endowments and alumni support.</p> <p>It is proposed to work with the embassies/consulates of different countries and plan to work out a methodology for supporting the international students with bi-lateral agreements.</p>	<p>Special scholarship fund will be created to support the deserving meritorious students if he/she is deprived of the academic progression due to financial problems targeting financial support to almost all needy students</p> <p>The university will pro-actively liaise with the all nationalised banks for extending educational loans thereby ensuring ease of study loan facility</p>
7	Student faculty ratio	The existing student teacher ratio is 1:19.	<p>With phase I recruitment already in the process, the ratio will enhance to 1:17.</p> <p>In addition, part of the faculty will be supported by Visiting and Adjunct faculty</p>	Expected student teacher ratio is 1:9
8	Laboratory facilities	70% of the Departments in Sciences and Engineering branches are having well equipped laboratories with modern equipment.	It is expected that this will be enhanced to 80% by utilising support from programmes like RUSA, TEQIP, DST-PURSE and other major infrastructural development programmes like FIST, CAS, SAP, CISCO and SIEMENS Technologies.	100%
9	Library	Andhra University is regionally acclaimed to be one of the best libraries in South India with more than 5,00,000/- titles and ancient palm leaf	<p>Additional 5,000 titles will be added annully</p> <p>More number of discussion rooms will be added.</p> <p>Automated biometric entry system will be initiated.</p>	



		<p>manuscripts that include very rare collections. The total seating capacity is 700.</p> <p>E- Learning resources with subscription to leading journals in every discipline.</p> <p>The inter library loan facility and reprography facility are also available. The library is almost digital with 150 browsing corners.</p> <p>Special facilities are provided for differently abled persons.</p> <p>The library is connected on Inflibnet and OPAC and networked to have remote access from the all departments.</p> <p>Current working hours :14</p>	<p>Library working hours will be enhanced to 24x7.</p> <p>e-learning resources will be strengthened by getting access to internationally reputed libraries.</p>
10	Student amenities	<p>Good hostel facilities for all needy students.</p> <p>Current capacity is 6000.</p> <p>Total number of Hostel blocks: 24</p>	<p>Hostel Accommodation to all needy students</p> <p>International student exchange programmes will be initiated</p> <p>Student internships and 100% placement for needy</p> <p>Skill development and Startup support to become Entrepreneurs</p>

		<p>Bus service from Hostel block</p> <p>Campus is 100% Wi-Fi enabled</p> <p>Three health centres with multi-speciality consultation</p> <p>Training and placement cell</p> <p>Remedial classes</p> <p>Orientation programmes</p> <p>Add on courses</p> <p>Foreign language courses</p> <p>Sports and games facilities with sprawling play grounds and Gymnasias</p> <p>Well placed National Service Scheme (NSS) that stood first in India for three successive years</p> <p>NCC Platoons</p> <p>Well-furnished canteens conveniently located on the campus</p> <p>Student group Insurance</p> <p>Yoga village</p>	<p>Innovation and incubation and knowledge transfer centres</p> <p>Support for research publications and patent filing</p> <p>Strengthening the social out reach</p>
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		Structured extra-curricular and co-curricular activities	
11	Adequate space for expansion	Andhra University is having a very sprawling campus of about 440 acres dotted with more than 100 administrative and academic buildings besides 300 teaching and non-teaching staff quarters.	Sufficient vacant land is available for expansion and more, student hostels, class rooms, laboratories student support centres will be constructed
12	Achieving social impact	<p>40% departments are engaged in applied research / field work for societal development. Current programmes of good social impact are:</p> <p>Geo-tagging for Greater Visakhapatnam Municipal Corporation</p> <p>Survey on technology transfer for smart city of Visakhapatnam</p> <p>Promoting social awareness on climate change</p> <p>Local weather forecast</p> <p>Geotechnical and Ground water investigations</p>	<p>100% departments are to be engaged in applied research/ Field work for societal development.</p> <p>The following Research programmes on water quality and food security to be started</p> <p>App development on weather forecast</p> <p>Health care for sustainable development</p> <p>Molecular studies of rare and ultra-rare diseases with particular reference to North Coastal Andhra Pradesh</p> <p>Counselling on Marine and pond aqua-culture</p> <p>Psychiatric counselling for Psycho symptomatic diseases</p>

		<p>Water harvesting and quality studies</p> <p>Coastal erosion</p> <p>Catch prediction for fishermen</p> <p>Efforts towards Space weather forecast for enhancing reliability of operational systems like GPS based Navigation and satellite communications.</p> <p>Development of Script for 18 tribal languages</p>		
13	Financial status	Andhra University financial status is sound through its support from state and central governments, Public funding agencies, private corporates and self financing courses	Andhra University will further strengthen its financial resources by mobilizing endowments, donations from alumni and corporate for increasing its corpus fund. Andhra University will also strengthen its consultancy and networking for additional resources	
14	Teaching research collaborations with global universities	<p>Andhra University has 84 MOUs out of which 24 are international for academic and research programmes.</p> <p>In addition to this many faculty are members of international working groups.</p>	<p>Another 15 MOUs will be signed for which bilateral discussion are taking place for international collaboration.</p> <p>In addition, more focus will be given for faculty exchange programmes.</p> <p>It is envisaged to organise more number of international conferences and workshops so that an opportunity will be provided for faculty</p>	Incessant efforts will be directed towards entering into at-least three MOUs per year with very advanced and highly reputed institutions



			interaction that may eventually result mutual international collaboration.  Special efforts will be made to attract foreign faculty during their sabbatical.	
15	Research Publications	The present h-index is 42	Though the per capita number of publication is reasonably fair, it is targeted to increase the h-index to 60	Targeted to be 85
16	Student enrolment	The total student strength in all disciplines and all years of study at a given time is 8564 during the academic year 2016-17	With introduction of new courses and research programmes, the student enrolment will be targeted to 9,500	Expected enrolment 14,000

## 7. Gap Analysis with respect to Strategic Plan

### • 7.1 Multidisciplinary and Inter-disciplinary Teaching

#### Present Status

Andhra University is always at the forefront in designing courses with inter-disciplinary approach. The University has introduced a number of inter/multi-disciplinary courses such as Molecular Genetics, Bio-Technology, Bio-Chemistry, , Bio-Informatics, Geo-Informatics, Naval Architecture, Data analytics and Cyber security, Industrial Engineering, Geo-Physics, Marine Geology, Food, Nutrition & Dietetics, Bio-medical Engineering, Microbiology, Marine Bio-Technology, Instrumentation Electronics, Atmospheric and Space Sciences, Quantitative Economics. All these courses are much in demand and are continued in the campus for several years. This indicates the fact that inter/multi-disciplinary approach is the part of University's academic culture. It may be mentioned that some of these courses have sizable number of international students.

The following are the 21 multidisciplinary and inter disciplinary

- M.Sc. Environmental Science
- M.Sc. Marine Chemistry.
- M.Sc. Bio-Chemistry
- M.Sc. Bio-technology
- M.Sc. Agricultural Bio-technology

- M.Sc. Bio-informatics
- M.Sc. Marine Geology
- M.Sc. Marine Biology and Fisheries
- M.Sc. Marine Bio-technology
- M.Sc. Marine Geophysics
- M. Tech. Petroleum Geology
- M.A. Women Studies
- M.Sc. Environmental Chemistry
- M.Tech. Bio-Technology
- M.Tech. Industrial Pollution Control Engineering
- M.Tech. Computer aided chemical Engineering
- M.Tech. Environmental Engineering and Management
- M. Tech. Structural Engineering and Natural disaster management
- M Tech Bio-Medical Engineering
- M. Tech Nano Technology
- M Tech Computer Science with Bio-informatics

#### **Expected Level:**

Andhra University proposes to strengthen its multidisciplinary and interdisciplinary teaching and research by starting another following 14 courses.

- M.Sc. Food technology
- M Tech Data Analytics and Cyber security
- M Tech Green Manufacturing
- MBA Public Policy and Governance
- MA Tourism and Hospitality
- B L Maritime Law
- MA Corporate Professionalism
- M Tech Genetic Engineering
- M.Sc Human Molecular Genetics
- B Tech Industrial systems engineering
- M Tech Quality & Reliability engineering
- M.Sc. Data sciences
- M Tech Computer integrated manufacturing
- MBA Business Analytics

Incessant efforts will be made to formulate multidisciplinary research teams in trust areas during the next 15 years for shaping the University as world class University.

#### **Gap to become world class University:**

At present 30% of the departments are having interdisciplinary/multidisciplinary teaching and research courses. We plan to make 50% of the departments should have interdisciplinary/ multidisciplinary courses during 15 years

## • 7.2 Multidisciplinary and Inter-disciplinary research

### Present Status

Andhra University is unique in formulating the following multidisciplinary research centres of excellence. The University departments undertake interdisciplinary research involving departments within the University and outside the University. It is very common to find that the professors from 2 or 3 departments together form as a group and undertake research projects of interdisciplinary nature funded by various agencies. The University campus is roofing various advanced centers of research who are actively working on various specialized areas. These centers in fact facilitate interdisciplinary research between and among different departments, schools of the University, Industries and also international collaborative research. For instance, the Delta Studies Institute has research tie-up with oil industry in general and ONGC in particular, with the financial support of ONGC, concentrating its activity on the areas related to oil exploration. The center involves faculty from departments such as Geology, Geophysics, Geo-Engineering, Chemical Engineering, Chemistry and Environmental Science and experts from industry.

The Center for Studies on Bay of Bengal is providing a platform to faculty members of different departments like Geology, Geophysics, Meteorology & Oceanography, Zoology, Marine Science, etc. to carry out interdisciplinary projects in collaboration with INCOIS and also with other funding agencies.

### Multidisciplinary teams are working in the following 13 research areas:

- Climate change
- Space weather and operational systems
- Numerical weather forecasting
- Environmental chemistry
- Atmospheric meso-scale modelling
- Geospatial analytics
- Inter-disciplinary modelling and simulation studies
- Industrial statistics
- Statistical signal processing
- Relativity and cosmology
- Marine bio-diversity
- Nano materials
- Cyber security

### Existing research Centres (13)

- Population Research Centre
- Agro Economic Research Centre
- Centre for Delta Studies
- Centre for studies on Bay of Bengal
- Centre for Nanotechnology
- Centre for Delta Studies
- Centre for Gandhian studies
- Dr. Durgabhai Deshmukh Centre for women studies
- Centre for Social inclusive and exclusive policy studies

- Centre for SAARC studies
- Centre for Data analytics and cyber security
- Dr. B.R. Ambedkar Centre

20% of the departments and 30% of faculty are involved in multidisciplinary and interdisciplinary research

### **Expected Level:**

It is proposed to work on the following multidisciplinary research themes that are relevant to the future earth and sustainable Humanosphere besides continuing the already existing research themes with linkage to the following focus area:

- Drug synthesis and health care management
- Climate change vis-a-vis Indian monsoons
- Innovative Yoga for chronic ailments
- Green fuels
- Bio energy production and waste management
- Coastal disaster management
- Sustainable manufacturing and eco-innovation
- Intelligent automation manufacturing and balanced economy
- Digital manufacturing
- Streaming data analysis
- Smart city analytics

The following research centres are to be established

- Centre for Marine Bio-diversity studies
- Centre for modelling and informatics
- Centre for advanced research on drug discovery and management
- Centre for Quantum Technologies

It is expected 50% of the departments and 70% of faculty are to be engaged in multidisciplinary and interdisciplinary research.

### **Gap to become world class University:**

The gap of 30% departments and 20% faculty are to be transformed from conventional research to interdisciplinary and multidisciplinary research by strengthening networking with industry, corporate and international research organization.

## **• 7.3 Foreign/foreign trained faculty**

### **Present Status**

The following departments are having foreign trained faculty. There are 5% faculty members who are well trained abroad. In addition to this, some NRIs are visiting Andhra University and are collaborating with AU faculty.



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Applied Mathematics  
Environmental Sciences  
Geology  
Chemistry  
Mathematics  
Meteorology and Oceanography  
Physics  
Pharmacy  
Anthropology  
Commerce and Management studies  
Economics  
English  
Psychology and Parapsychology

**Expected Level:**

Andhra University proposes to increase the foreign/ foreign trained faculty to at least 25% in the coming 15 years. This is planned to achieve by inviting the scientific collaborators of various faculty members either by supporting them from the programmes available from different national and international funding agencies. In addition, efforts will be made to involve distinguished researchers by propagating the novel programmes being conceived by the university fraternity. Efforts towards generation of corpus for this particular activity will be realised by seeking the support of Andhra University alumni and the corporate and industrial sector. The twinning programmed and the collaborative programmes in place will attract the foreign faculty.

**Gap to become world class University:**

There is a need of improving foreign or foreign trained faculty is to be increased to become world class University.

- **7.4 Mix of domestic and foreign students**

**Present Status**

The current mix of foreign to Indian student ratio on the campus is 7%.

**Expected Level:**

The strategy proposed for the enhancement of this mix to 30% in the coming 15 years period.

**Gap to become world class University:**

There is a gap in foreign student mix. This is gap can be filled by promoting more under graduate and post graduate admissions by initiating inter disciplinary/multi-disciplinary programmes in the global outlook. It is proposed to work with the embassies/consulates of different countries and plans to work out a methodology for supporting the international students with bi-lateral agreements. The university is

contemplating to enhance the twinning programmes and also to initiate student exchange programmes so that a global visibility is created for the programmes of Andhra University. The University will promote every opportunity to enhance the foreign mix to 30% by providing special privileges to Doctoral and Masters programmes.

## • 7.5 Admission process

### **Present Status**

The University already has an undisputed merit based and transparent on line admission procedure, adhering to the statutory norms.

### **Expected Level**

Efforts will be made to incorporate the technology advancement in the admission process.

### **Gap to become world class University:**

There is no gap in merit based transparent admission process which is already in place as required to become a world class University

## • 7.6 Financial support to the students

### **Present Status**

70% of the students are supported by various student scholarships as per various governmental programmes. 80% research students are supported by various research fellowships and scholarships. All needy students are supported for taking educational loans from various nationalised banks. There is no student who turned back due to lack of financial support.

### **Expected Level**

The percentage of students getting financial aid for studies is raised to 80% and for research students it is to be raised to 100%.

### **Gap to become world class University:**

There is a small gap in research fellowships and student scholarships. This gap can be filled by creating some merit cum means scholarships through endowments and alumni support. It is proposed to work with the embassies/consulates of different countries and plans to work out a methodology for supporting the international students with bi-lateral agreements.

Special scholarship fund will be created to support the deserving meritorious students lest he is deprived of the academic progression due to financial problems targeting financial support to almost all needy students. The university will continue to pro-actively liaison with all nationalised banks for extending educational loans thereby ensuring ease of study loan facility

## • 7.8 Faculty Student ratio

### **Present Status**

The existing student teacher ratio is 1:16.7

### **Expected Level**

It is expected that the faculty student ratio is to be below 1:9 during the next 10 years period

### **Gap to become world class University:**

There is a gap in faculty student ratio. Efforts are in place to fill the gap by recruiting 285 faculty positions in the University for which the notification is already given. Another 110 faculty positions are to be filled in the second phase which will be completed within one year. In addition, part of the faculty will be supported by Visiting and adjunct faculty. It is also planned to encourage the NRI to work as visiting faculty during their sabbatical.

## • 7.9 Laboratory facilities

### **Present Status**

70% of the Departments in Science, Engineering and College of Pharmacy are having well equipped laboratories with modern equipment. There are 13 Research centres well equipped with State of Art infrastructure to carryout research experiments and to train the students. 18 departments are recognized by UGC under SAP and DST under FIST for their research activities. The college of Engineering is well supported by TEQIP Phase I and Phase II, the University is supported by DST PURSE programmes. The Government of India granted funds for modernization laboratories and infrastructure for classroom under RUSA programme.

Andhra University has established interaction with industry and organizations which resulted in the establishment/creation of laboratories /facilities. The following are some of the details of laboratories and facilities developed through the interaction with the industry:

The MoUs with the organizations such as TCS, IBM has facilitated to establish sophisticated computer science laboratories in computer Science and System Engineering Department. The MoUs with RINL has facilitated to do research in trust areas of the departments such as Metallurgical Engineering, Mechanical Engineering, Botany and Statistics. The interaction with ISRO helped the departments such as Physics, System design, Metrology and oceanography to do advanced research. The interaction with NSTL helped the departments such as computer science, Instrumentation Engineering, Electronics and Communication Engineering, Mechanical Engineering, Electrical Engineering to have scientific equipment in their laboratories. The MoU's with ONGC helped the departments such as Geology, Geo physics, Delta Studies Institute, Centre for Studies on Bay of Bengal. A Centralized Laboratory Facility - a National facility for processing and analysis is established at Centre for Studies on Bay of Bengal. The MoU with APNA BOX has facilitated the University Faculty to utilize ICT methods of teaching and learning process. The MoU with Andhra bank has facilitated to establish a sophisticated building and infrastructure in the Department of commerce and Management. In addition to these the university

is interacting with several other industries to create facilities and sophisticated laboratories in the campus.

### **Expected Level**

It is expected that 100 % departments in the College of Science and Technology, College of engineering are to be well equipped with modern scientific laboratories during the next 15 years period.

### **Gap to become world class University:**

There is a gap in some of the Departments to have world class laboratory facilities. This will be filled by utilising support from other major infrastructural development programmes. The MoU's with CISCO and SIEMENS Technologies are resulting for establishment of major equipment useful for Science, Engineering, Technology and Pharmacy. University-Industry interaction will also facilitate establishment of centres of excellence in advanced areas of research.

## **• 7.10 Library facility**

### **Present Status**

Andhra University is regionally acclaimed to be one of the best libraries in South India with more than 5,15,000 titles and ancient palm leaf manuscripts that include very rare collections.

The total seating capacity is 700. E- Learning resources with subscription to leading journals in every discipline. The inter library loan facility and reprography facility are also available. The library is almost digital with 150 browsing corners. Special facilities are provided for differently abled persons. The library is connected on Inflibnet and OPAC and networked to have remote access from the all departments. Current working hours is 14.

### **Expected Level**

The library facility is already of world class nature and will be strengthened by adding latest volumes and titles. More e-journals will be subscribed and networking with national and international libraries will be improved.

### **Gap to become world class University:**

The University is having a world class library with its learning resources and e-learning. However, more number of discussion rooms will be added, automated biometric entry system will be initiated, Library working hours will be enhanced to 24x7, e-learning resources will be strengthened by getting access to internationally reputed libraries.

## • 7.11 Student amenities

### **Present Status**

The University is striving to provide best student amenities to become hassle free environment with the following student facilities: 24 Hostels with a capacity of 7000 are available for needy students for in campus accommodation. Transportation facility is available from hostel blocks.

Campus is 100% Wi-Fi enabled, three health centres with multi-speciality consultation, training and placement cell for each constituent college, Remedial classes are organized for weak students, Orientation programmes and bridge courses are organized for fresh students, add on courses are offered, foreign language courses are offered, Skill development programmes, Sports and games facilities with 4 sprawling play grounds and Gymnasias are available, Well placed National Service Scheme (NSS) that stood first in India for three successive years, NCC Platoons, Well-furnished canteens conveniently located on the campus.

Student group Insurance programme, Yoga village offering short term Yoga classes, Structured extra-curricular and co-curricular activities, mentoring and counselling centres in each department. Incubation and innovation centres in the campus.

### **Expected Level**

It is planned to increase International student exchange programmes, providing student internships, 100% placement support for needy students, providing entrepreneur support services, increasing innovation and incubation centres, support for research publications and patent filing, strengthening the social outreach programmes involving students

### **Gap to become world class University:**

There is a small gap in student amenities to provide world class facilities in the campus. This gap will be filled by modernizing the student hostels, providing e-learning resources in the hostels, increasing games and sports facilities in the campus, interacting with industries, corporates and companies for student placements.

## • 7.12 Adequate space for expansion

### **Present Status**

Andhra University is having a very sprawling campus of about 500 acres dotted with more than 100 administrative and academic buildings besides 300 teaching and non-teaching staff quarters.

### **Expected Level**

It is planned to utilize the available vacant land for constructing more buildings, hostels and research centers. The required power generation can be planned by establishing solar energy plant.

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### **Gap to become world class University:**

Sufficient vacant land is available for expansion.

### **• 7.13 Applied research in achieving social impact**

#### **Present Status**

Andhra University is carrying out field studies and applied research of societal development. The current programmes of good social impact are: Geo-tagging for Greater Visakhapatnam Municipal Corporation, Survey on technology transfer for smart city of Visakhapatnam, Promoting social awareness on climate change, Local weather forecast, Geotechnical and Ground water investigations, Water harvesting and quality studies, Coastal erosion, Catch prediction for fishermen, Efforts towards Space weather forecast for enhancing reliability of operational systems like GPS based Navigation and satellite communications, Development of Script for 18 tribal languages. In addition to these the research centres such as agroecomic research centre, population research centre, Dr. Durgabhai Deshmukh centre for women studies, centre for inclusive and exclusive studies, centre for Delta studies, Centre for bay of Bengal, Dr. B.R. Ambedkar Studies centre are conducting applied research having impact on developing societies.

#### **Expected Level**

It is planned to give more stress for applied research and field studies that have relevance for societal benefit.

### **Gap to become world class University:**

There is very little gap in conducting applied research and field studies that are of having societal impact. However, many more applied research can be encouraged by giving focus on the thrust areas such as Research programmes on water quality and food security, App development on weather forecast, Health care for sustainable development, Molecular studies of rare and ultra-rare diseases with particular reference to North Coastal Andhra Pradesh.

Counselling on Marine and pond aqua-culture, Psychiatric counselling for Psycho symptomatic diseases.

### **• 7.14 Governance Structure**

The University is having a well defined organization structure in administration and academic decision making process. The Academic Senate and Executive Council, headed by the Vice-Chancellor, are the highest policy making bodies on the Academic and Administrative fronts of the University. The Vice-Chancellor is the Head of the Institution. The Rector, the Principals of the constituent colleges and the Registrar form the administrative officers of the University in that hierarchy. The PG campuses of the University have special officers as administrative heads. The various Deans, Directors or coordinators dealing with different wings like Academic Affairs, CDC, Examinations, Student Affairs, Press and Publications, Foreign Student Affairs, Internal Quality Assurance Cell, Andhra University Development Cell etc., work in union with the above officers. The Registrar is the Administrative head of the University. The Finance Officer and the Controller of Examinations in the cadre of Joint Registrars work under him. Various wings like Administration, Finance and Examinations will have Deputy Registrars and Assistant Registrars. Under them different sections function and each section is headed



by a Superintendent. The curricular aspects will be looked after by the Dean Academic Affairs, Deans of Faculty and Chairperson Boards of Studies. The offices of the Principals of the constituent colleges and special officers of the P.G. campuses will be assisted by officers of the cadre of Assistant Registrar and Superintendents. The Departmental office will be provided with the Senior Assistants, Junior Assistants and Typists. All the Laboratories will be provided with Laboratory Assistants and Technical Staff.

The Principals are asked to convene meetings with the Heads of the Departments every week. In addition to the existing practices, new committees and boards are constituted as per the requirement. At the top level, the Executive Council meets at-least once in three months, while the meetings of the Standing Committee of the Academic Senate are convened depending on the need. The Academic Senate meetings are held twice in a year.

This structure encourages participative decision making and transparent academic and administrative system which is needed for a world class University.

### ● **7.15 Financial status**

The University is having sound financial status by utilizing the funds from state government block grant, Central Government planned grant, public funding from various funding agencies, funds from self finance courses, Resource mobilization from consultancy services and alumni support.

### ● **7.16 Teaching research collaborations with global universities**

#### **Present Status**

Andhra University has 84 MOUs out of which 24 are international for academic and research programmes. In addition to this many faculty are members of international working groups.

#### **Expected Level**

It is planned to have another 45 MOUs will be signed with international organizations to have networking with high level world class Universities and intuitions for research and academic collaborations.

#### **Gap to become world class University:**

There is a gap in signing MoU's with world class Universities. The aim of being an Institution of eminence basically rests on the extent of international collaboration, incessant efforts will directed towards entering into at-least three MOUs per year with very advanced and highly technical institutions. In addition, more focus will be given for faculty exchange programmes.

It is envisaged to organise more number of international conferences and workshops so that an opportunity will be provided for faculty interaction that may eventually result mutual international collaboration. Special efforts will be made to attract foreign faculty during their sabbatical to have more number of collaborative research programmes.

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- **7.17 Research Publications**

**Present Status**

The University has developed an official code of ethics to check malpractices and plagiarism in research. Interdepartmental and interdisciplinary research projects are widely undertaken. Many faculty members have received awards for their research contributions from Government, professional bodies and associations at National and International level. The University got 21 patents so far and awards on an average 350 Ph.D. Degrees every year. The number of books published and research articles published in peer reviewed journals with impact factor is significant in all faculties. The present h-index is 3.2 per faculty with an average number of papers published per faculty per year as 1.51 The average number of books published in a year in the university is 12 and the average number of articles published in a year is 520.

**Expected Level**

Though the per capita number of publication is reasonably fair, it is targeted to increase the quality of publication by encouraging the faculty and researchers to publish highly rated and scopus indexed journals by providing technical and financial support. It is expected that the number of publications be enhanced to 3.0 per faculty during the 15 year period.

**Gap to become world class University:**

The research publication quality can be further enhanced with a financial support for publications to the faculty and research personnel. The networking with the international faculty will also improve publications of research papers in high quality journals.

- **7.18 Student enrolment**

**Present Status**

The total student strength in all disciplines and all years of study at a given time is 8564 during the academic year 2016-17.

**Expected Level**

With introduction of new courses and research programmes, the student enrolment is planned to become 14,000

**Gap to become world class University:**

The small Gap in student enrolment can be filled by introducing new courses in multi disciplinary and interdisciplinary areas and giving admission to research scholars for the vacant seats.

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## 7.19 NAAC Accreditation

### Present Status

Andhra University is re-accredited in the third cycle with 3.6 out of 4 scale with A grade by NAAC. The same grade is achieved for the first and second cycles.

### Expected Level

The University planned to achieve 3.70 out of 4 scale during next cycle of reaccreditation.

### Gap to become world class University:

The University has already achieved the A+ grade and accredited as one of the top multidisciplinary state run Universities. However, the expected targeted score can be reached by focusing on quality education.

## 7.20 World rankings

Andhra University is listed in 801-1000 band by Times Higher Education World Universities ranking 2018. The QS in BRICS ranking placed Andhra University at 150-200 band.

### Expected Level

It is planned to improve the Times Higher Education World Universities ranking below 500 within 10 years of time

### Gap to become world class University:

There is a gap in world ranking by Times Higher Education and QS. This gap can be filled by incessant efforts in impartment quality education by improving teaching learning processes, collaborative research, student support systems.

## 8.Action Plan to reach the targets of each parameter to become world class University

Andhra University proposes to strengthen its multidisciplinary and interdisciplinary teaching and research by starting another following 10 courses namely M.Sc. Food technology, M Tech Data Analytics and Cyber security, M Tech Green Manufacturing, MBA Public Policy and Governance, MA Tourism and Hospitality Management, B L Maritime Law, M Tech Genetic Engineering, M.Sc Human Molecular Genetics, B Tech Industrial systems engineering, M Tech Quality & Reliability engineering, M.Sc. Data sciences, M Tech Computer integrated manufacturing, MBA Business Analytics. Totaling of 35 interdisciplinary and multidisciplinary Courses.

- It is proposed to work on the following multidisciplinary research themes that are relevant to the future earth and sustainable Humanosphere besides continuing the already existing research themes with linkage to the following focus area: Drug synthesis and health care management,

Climate change vis-a-vis Indian monsoons, Innovative Yoga for chronic ailments, Green fuels, Bio energy production and waste management, Coastal disaster management, Sustainable manufacturing and eco-innovation. It is planned to establish research centers in advanced areas namely: Centre for Marine Bio-diversity studies, Centre for modelling and informatics, Centre for advanced research on drug discovery and management, Intelligent automation manufacturing and balanced economy, Digital manufacturing, Streaming data analysis, Smart city analytics. It is planned to establish the Centre for Quantum Technologies.

- This is planned to achieve by inviting the scientific collaborators of various faculty members either by supporting them from the programs available from different national and international funding agencies. In addition, efforts will be made to involve distinguished researchers by propagating the novel programs being conceived by the university fraternity. Efforts towards generation of corpus for this particular activity will be realized by seeking the support of Andhra University alumni and the corporate and industrial sector. The twinning programmed and the collaborative programs in place will attract the foreign faculty.
- It is planned to promote more under graduate and post graduate admissions by initiating inter disciplinary/multi-disciplinary programs in the global outlook. It is proposed to work with the embassies/consulates of different countries and plans to work out a methodology for supporting the international students with bi-lateral agreements. The university is contemplating to enhance the twinning programs and also to initiate student exchange programs so that a global visibility is created for the programs of Andhra University. The University will promote every opportunity to enhance the foreign mix to 30% by providing special privileges to Doctoral and Masters programs.
- Admission is merit based transparent fully computerized. Efforts will be made to incorporate the technology advancement in the admission process
- It is planned to create some merit cum means scholarships through endowments and alumni support. It is proposed to work with the embassies/consulates of different countries and plans to work out a methodology for supporting the international students with bi-lateral agreements. Special scholarship fund will be created to support the deserving meritorious students lest he is deprived of the academic progression due to financial problems targeting financial support to almost all needy students. The university will continue to pro-actively liaison with all nationalized banks for extending educational loans thereby ensuring ease of study loan facility.
- Efforts are in place to fill the gap by recruiting 285 faculty positions in the University for which the notification is already given. Another 110 faculty positions are to be filled in the second phase which will be completed within one year. In addition, part of the faculty will be supported by Visiting and adjunct faculty. It is also planned to encourage the NRI to work as visiting faculty during their sabbatical.
- It is planned to utilize the support from other major infrastructural development programs. The MoU's with CISCO and SIEMENS Technologies are resulting for establishment of major equipment useful for Science, Engineering, Technology and Pharmacy. University-Industry interaction will also facilitate establishment of centers of excellence in advanced areas of research.

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- It is planned to augment more number of discussion rooms in the library, automated biometric entry system will be initiated, Library working hours will be enhanced to 24x7, e-learning resources will be strengthened by getting access to internationally reputed libraries.
  - It is planned to modernize the student hostels, providing e-learning resources in the hostels, increasing games and sports facilities in the campus, interacting with industries, corporates and companies for student placements.
  - The vacant land is to be utilized for expansion program by construction new class room complex, hostels, laboratories and other building for academic and research activities.
  - It is planned to give more stress for applied research and field studies that have relevance for societal benefit. Focus on the thrust areas such as Research programs on water quality and food security, App development on weather forecast, Health care for sustainable development, Molecular studies of rare and ultra-rare diseases with particular reference to North Coastal Andhra Pradesh, Counselling on Marine and pond aqua-culture, Psychiatric counselling for Psycho symptomatic diseases is to be given. Academia society interaction is strengthened by organizing student participated societal development programs.
  - Incessant efforts will directed towards entering into at-least three MOUs per year with very advanced and highly technical institutions. In addition, more focus will be given for faculty exchange programs. It is envisaged to organize more number of international conferences and workshops so that an opportunity will be provided for faculty interaction that may eventually result mutual international collaboration. Special efforts will be made to attract foreign faculty during their sabbatical to have more number of collaborative research programs.
  - The research publication quality can be further enhanced with a financial support for publications to the faculty and research personnel. The networking with the international faculty is encouraged to improve research publications in high quality journals.
  - Student enrolment is to be increased by introducing new courses in multi disciplinary and interdisciplinary areas and giving admission to research scholars for the vacant seats. Efforts will taken to attract more foreign and NRI students by propagating the University facilities, academic programs, research facilities through alumni and peers. The University information containing its achievements accreditation, networking and other facilities is to be disseminated through e-brochures and improving brand Andhra University,
  - The University has already achieved the A+ grade and accredited as one of the top multidisciplinary state run Universities. However the expected targeted score can be reached by focusing on quality education. The periodic academic audits are conducted and corrective measures are adopted for improving quality standards in teaching learning, research and consultancy. The feedback mechanism with follow up strategies is adopted for enhancing University level.
  - Incessant efforts are made in imparting quality education by improving teaching learning processes, collaborative research, student support systems and good governance.

## 9. Expected Level of Andhra University after 2022

- At present 30% of the departments are having interdisciplinary/multidisciplinary teaching and research courses. We plan to make 65% of the departments should have interdisciplinary/multidisciplinary courses during 5 years
- It is expected 40% of the departments and 60% of faculty are to be engaged in multidisciplinary and interdisciplinary research
- Andhra University proposes to increase the foreign/ foreign trained faculty to at least 20 % in the coming 5 years
- The strategy proposed for the enhancement of this mix to 13% in the coming 5 years period
- The percentage of students getting financial aid for studies is raised to 75% and for research students it is to be raised to 85%
- It is expected that the faculty student ratio is to be below 1:11 during the next 5 year period
- It is expected that 85 % departments in the College of Science and Technology, College of engineering are to be well equipped with modern scientific laboratories during the next 5 years period
- The library facility is already of world class nature and will be strengthened by adding latest volumes and titles. More e-journals will be subscribed and networking with national and international libraries will be improved
- It is planned to increase International student exchange programs, providing student internships, 100% placement support for needy students, providing entrepreneur support services, increasing innovation and incubation centers, support for research publications and patent filing, strengthening the social outreach programs involving students
- It is planned to utilize the available vacant land for constructing more buildings, hostels and research centers. The required power generation can be planned by establishing solar energy plant
- It is planned to give more stress for applied research and field studies that have relevance for societal benefit
- It is planned to have another 30 MOUs will be signed with international organizations to have networking with high level world class Universities and intuitions for research and academic collaborations
- Though the per capita number of publication is reasonably fair, it is targeted to increase the quality of publication by encouraging the faculty and researchers to publish highly rated and scopus indexed journals by providing technical and financial support. It is expected that the number of publications be enhanced to 1.8 per faculty during the 5 year period
- With introduction of new courses and research programs, the student enrolment is planned to become 12,500
- The University planned to achieve 3.75 out of 4 scale during next 5 years
- It is planned to improve the Times Higher Education World Universities ranking below 400 within 5 years of time

## 10. Expected Level of Andhra University after 2027

- At present 30% of the departments are offering multidisciplinary or interdisciplinary courses in Andhra University. It is expected to increase a minimum of 75% of departments should have multidisciplinary / interdisciplinary programs
- It is expected 50% of the departments and 70% of faculty are to be engaged in multidisciplinary and interdisciplinary research.
- Andhra University proposes to increase the foreign/ foreign trained faculty to at least 25% in the coming 10 years.
- The strategy proposed for the enhancement of this mix to 30% in the coming 10 years period
- The percentage of students getting financial aid for studies is raised to 80% and for research students it is to be raised to 100%.
- It is expected that the faculty student ratio is to be below 1:9 during the next 10 year period
- It is expected that 100 % departments in the College of Science and Technology, College of engineering are to be well equipped with modern scientific laboratories during the next 10 years period.
- The library facility is already of world class nature and will be strengthened by adding latest volumes and titles. More e-journals will be subscribed and networking with national and international libraries will be improved.
- It is planned to utilize the available vacant land for constructing more buildings, hostels and research centers. The required power generation can be planned by establishing solar energy plant.
- It is planned to give more stress for applied research and field studies that have relevance for societal benefit.
- It is planned to have another 45 MOUs will be signed with international organizations to have networking with high-level world-class Universities and intuitions for research and academic collaborations.
- Though the per capita number of publication is reasonably fair, it is targeted to increase the quality of publication by encouraging the faculty and researchers to publish highly rated and scopus indexed journals by providing technical and financial support. It is expected that the number of publications be enhanced to 3.0 per faculty during the 10 years period.
- With introduction of new courses and research programs, the student enrolment is planned to become 14,000
- The University planned to achieve 3.85 out of 4 scale during next 10 years
- It is planned to improve the Times Higher Education World Universities ranking below 100 within 10 years of time.

If this strategic plan is implemented then Andhra University will become reputed World Class University.