

ACADEMIC AND ADMINISTRATIVE AUDIT OF RGUKT-ANDHRA PRADESH

1. **Constitution of the Committee:** Vide Proceedings of Hon.Chancellor, No.RGUKT-AP dated 1.5.2022, a committee with the following experts is constituted to conduct Academic and Administrative audit of RGUKT for the academic year 2021-22.

1. Prof.K.V.Rao, Former Vice Chancellor, AcharyaNagarjuna University
2. Prof.D.Harinarayana, Professor (Rtd.), Andhra University.
3. Prof.G.MohanRao, Professor (Rtd.), Indian Institute of Science, Bangalore

The committee is requested to submit its report in three months.

2. **Establishment of the University:** The Rajiv Gandhi University of Knowledge Technologies was established through Act.No.18 of 2008, by the combined state of Andhra Pradesh, with the following objectives.
 - a) To disseminate and advance knowledge in the fields of Information Technology, Nano-Technology, Solar Energy Technology, Biotechnology and other emerging Technologies;
 - b) to create institutes and /or centres of excellence for imparting state of the art education, training and research in the fields of Information technology, Nano Technology, solar energy Technology, Biotechnology and other emerging areas;
 - c) to develop innovative patterns of teaching, training, curriculum design and methods of testing at various levels of educational accomplishment to attain global education standards;
 - d) to make special provisions for integrated courses in humanities, social sciences and interdisciplinary areas, so as to promote use of technologies for larger benefit of mankind, particularly people living in developing countries;
 - e) To function as a resource centres for knowledge management and entrepreneurship development in the fields of Information Technology, Nano Technology, Solar Energy Technology, Biotechnology and other emerging areas;
 - f) To provide for inter-relationships for national and global participation in the fields of Information Technology, Nano Technology, Solar Energy Technology, Biotechnology and other emerging areas and its allied fields; and

g) To establish close linkage with industry to make teaching and research at the institute relevant to the needs of the economy at national and global level.

3. **Organization of the Report:** After detailed deliberations, the committee opined that the following criteria could be suitable for conducting the present Academic and Administrative audit of the University.

1. Admission process
2. Curricular aspects
3. Teaching – Learning process
4. Infrastructure and Learning Resources
5. Promotion of Research
6. Student Support
7. Governance issues
8. Environmental Consciousness
9. Societal engagement
10. Campus Life

4. **Admission Process:** Keeping in view the basic philosophy and objective with which RGUKT was started as a unique model to empower meritorious rural youth through quality professional education, by following the model of Mandal best based admissions, admitting students by adding appropriate deprivation score to the students who studied in Government schools. Scientific studies are carried out to identify deprivation in education in AP and compensate thereby, the underprivileged to achieve inclusivity.

At present, the University has been admitting about 4400 students in its four campuses per year, making a total student strength of about 25000 in the University. The uniqueness of the University is that it admits students after their class X and coaches them for Plus 2, to enable them to get admission in the Engineering program.

5. **Curricular Aspects:** The University has a well-defined structure for Curriculum design and development. At the ground level the Faculty of the Department discuss threadbare the need for changing the curriculum, keeping in view of the advancements in their subjects. If necessary, they also organize a brainstorming

session for identifying the need for revision and distribute the curriculum preparation work among themselves. It is done at three levels. One, minor changes in the courses by way of addition or deletion of units or Chapters. Two, replacement of existing courses, due to the earlier ones becoming obsolete or redundant. Three, introduction of New Courses/Programmes. After discussions at the faculty level, the matter is placed before the Board of Studies for further detailed discussion. The BoS will consist of not only faculty of the Department, but also Experts drawn from reputed organisations like IITs, NITs and other Institutes of National importance, besides persons from Industry and Alumni. Later, the Minutes of the BoS are placed for consideration of the Academic Council, which is the statutory body. It is only after the approval of the Academic Council that the curriculum comes into force. It is also the practice of the University to place all the Minutes of Academic Council for favour of information before the Governing Council, which is the highest policy making body of the University. It is the policy of the University to revise the curriculum once in three years. The same is labeled as the New Scheme effective from such and such Academic Year. Currently, Regulations effective from the Academic Year 2020-2021 are in force. From the Academic year 2022-23, New Regulations would come into effect. Minor modifications are permitted every year in the syllabi of the courses. While modifying the curriculum, the view points of the students, parents, industry representatives are valued. The University has introduced the system of Outcome Based Education (OBE) with effect from the Academic Year 2020-21. Accordingly, fixed the POs, PSOs, PEOs and Cos for all the Programmes offered. The same are also hosted on the Website of the University.

The Vision of the University is stated to be nurturing rural youth of the country towards advanced technical knowledge and skills to empower them to be leaders in their profession across the world. Keeping the same in view, the curriculum is tailored to meet the local, national, and global requirements. The University offers not only basic disciplines of Engineering such as Civil, Mechanical and Electrical, but has the courses relevant to the contemporary needs of the society such as Computer Science and Engineering, Chemical Engineering, Metallurgical and Materials Engineering and Electronics and Communication Engineering. Modifications are introduced in the Curriculum from time to time, based on the advancements in the disciplines. Measures such as Multi-disciplinary and Inter-disciplinary courses, Open Electives

enshrined in the National Education Policy-2020 were introduced by the University much earlier. As a matter of fact, the University offers a 6-year Integrated Programme, with Plus2 as the base for Engineering Education. Similarly, another interesting practice, unique to the University is that it offers Minors in select disciplines, making them interdisciplinary. In order to strengthen the Academic Programmes further, the University has been offering Value Added Programmes and thus the skill requirement of the students is well taken care of. The curricula of the University is further strengthened by the in built practices like the Long Term One year Internship at the Industry, Summer Training camps, Field works and Project based learning.

The following are the specific observations of the committee with respect to curricular aspects:

- Following the implementation of Outcome Based Education, the Boards have identified the Course Objectives. However, the attainment mapping needs to be done on a regular basis, to reap the benefits of OBE.
- Keeping in view the market demand, innovative branches of study have not been introduced, like Data Science, ML and AI etc, although they are offered as electives.
- The admission process of the University is robust. Nevertheless, the University has to give wide publicity through media and publication of prospectus.

The following are the recommendations of the committee with respect to curricular aspects:

- The BoS of the respective disciplines need to meet every year at fixed time schedule.
- Keeping in view the National Educational Policy 2020, the curricula may be suitably modified to make it more inter-disciplinary and multi-disciplinary.
- In order to help the rural based students, appropriate bridge courses may be designed and organized.

6. **Teaching – Learning Process:** The University has a unique policy of early induction of students after completion of class 10, into an integrated program which combines Intermediate (plus 2) and a four year engineering. It is thus a novel experiment

contemplated by the Government of Andhra Pradesh. It is also unique in terms of the teaching pedagogy and the adoption of 'Learning by Doing'. The program is fully residential requiring stay of faculty and students in the campus, thereby enabling better interaction. Accordingly, the University has recruited a huge contingent of teaching personnel in the name of Home Room Tutors. To commensurate with the number of students, the physical infrastructure has been suitably developed. Apart from class room teaching, the students are encouraged to register for online programs like NPTEL etc., and other relevant courses useful for their curriculum and also for additional information on the subject as suggested by the faculty and clarifications are provided if needed. An additional and unique feature of the University is its Long Term Internship Program. The students are encouraged to undertake this program and help is rendered to identify the prospective industries for the purpose. This is open to all the students of Final year of engineering program. Every year about 25 to 30 percent of students opt for this. In addition, all the students have to undergo a mandatory Summer Internship for SIX weeks during their third year of program.

In the beginning of the program, the slow learners are identified and are given extra attention in order to get them into the stream. In addition, for the students who do not perform well in the examination, remedial classes are held before conducting supplementary examinations.

The following are the specific observations of the committee with respect to Teaching – Learning Process:

- a. The heart of the Teaching – Learning process is a better coordination between the teacher and the student. There seems to be a lacuna in this regard.
- b. The class rooms have to be better equipped to impart ICT based education to the students, which is the core of the University.
- c. The final project undertaken by the students lacks proper documentation to ensure publication and as guidance to the junior students.

The following are the recommendations of the committee with respect to curricular aspects:

- a. The teaching should be made more oriented towards working on projects rather than class room teaching
- b. The students and faculty should be encouraged to stay in the class rooms and laboratories for more time interacting on real time practical project work
- c. There must be provision in the curriculum for student seminar presentations, and included in the academic calendar.
- d. Advanced Learners may be supported to publish their Project Reports for wider dissemination.

7. **Infrastructure and Learning Resources:**RGUKT in all its campuses has provided adequate physical facilities and continues updating of these facilities as per the requirements of curriculum, student needs and norms of statutory/ regulatory bodies matching its vision and mission. All the four campuses of the university are located in such a way that they provide pollution free natural environs. Each classroom accommodates 60 students with facilities for technology driven teaching learning process. Being a technological university, each classroom is equipped with LCD projectors and individual plug in for each student for laptop operations. Since each student is given a laptop free of cost as soon as they enter the university, he or she is trained in the nuances of “learning by doing”. The university keeps updating hardware and software requirements as per the technological change taking place suitable for the needs of the students. Peer interaction and learning is encouraged in RGUKT. Discussion rooms are provided inside the library and also in academic blocks. Teachers are available most of the time to support students in their learning.

Each campus in RGUKT has a central library and also departmental libraries. The central library has a large collection of books catering to engineering, technology, science, humanities, and related fields. The library is open from 9 AM to 8PM in all the days. The library is equipped with sufficient number of books, journals, references, periodicals, and magazines covering all areas of knowledge and applications. It is centrally located spread over two floors. Its ambience and surroundings provide excellent space for learning and scholarship. The building has provision for individual and group studies with scope for interaction and discussion. Discussion rooms are provided in the library. The library in each campus is equipped with adequate sign boards for guidance of the users. Physical facilities in the library include fire detection alarm and firefighting systems and ramp for easy access of

users. OPAC is the main tool to provide access to use the library. The library in each campus is automated using open-source software KOHA.

For an educational institution where the teaching is in a Learning by doing mode, ICT based environment is essential. The class rooms have been originally planned for that. However, the method seems to be getting diluted due to various reasons. The accessibility to the lecture videos from other eminent resource persons is to be achieved fully. An educational institution which is oriented towards high end technology, needs proper infrastructure. In this regard, the University seems to be well equipped. The sophisticated material characterization equipment like Field Emission Electron Microscope, X-ray diffractometer with its high temperature and Grazing angle incidence attachment, Fatigue analysis equipment upto a temperature as high as 1200C, etc., are worth mentioning. Many institutions of national importance do not have such equipment. However, what is lacking is better research environment conducive to use these instruments more productively. The laboratories in Srikakulam and Ongole campuses need to be equipped fully once the construction of the laboratory buildings is completed. Currently they are utilizing the laboratories of a local engineering college on rental basis and fulfilling the requirements of the curriculum.

Along with academics, for the development of personality, RGUKT has separate departments for games and sports and yoga. Each of the RGUKT institutes located in 150-to-250-acre campuses has a large playground with provision for indoor and outdoor games. The indoor games include badminton, volleyball, and basketball. Outdoor games facilities available are badminton, Koko, volleyball, cricket, softballs, throw ball, kabaddi, hockey, football, etc. Provision is made for multiple sports such as athletics- running, long jump, shotput etc. The institutes have a multipurpose indoor stadium which facilitates playing of table tennis, indoor badminton, tennikoit, caroms and chess. Gymnasium provided in each campus are equipped with fitness equipment accessible to both students and faculty.

Each campus has a yoga centre located in a separate building supported by yoga instructor/assistant professor. Yoga classes are held both in the morning and evening without disturbing academics. Students participate in competitions at different levels and won awards for the university.

RGUKT has facilities for cultural activities. The activities are held in the auditorium with facilities of audio systems with capacity of one thousand. Besides each campus has an open-air auditorium accommodating huge number of students. The uniqueness of the university is in blending the tech savvy students with fine arts like music, painting, and dance. The infrastructure for fine arts supported by instructors is made fully available in each institute. Each institute conducts cultural festivals more than once in a year encouraging student participation. The cultural activities are organised through student clubs.

RGUKT has general facilities available in all its campuses lending excellent ambience with lush green environment dotted with architecturally designed buildings giving excellent ambience as each campus has large area, buildings constructed are separated by requirements of academic, residential, administrative, residence and games and sports needs. The campus has wide roads with plantation on either side making it a green campus. The general campus facilities available are State Bank of India branch, SBI ATM, general canteen, primary hospital/dispensary, post office, Children Park, police station, etc. In the two campuses of RK Valley and Nuzvid, the primary health care is taken care by the hospital/dispensary wherein doctors and nurses are available on 24x7 basis. Dispensary has 10 bedded facilities attended to by the doctor. After first aid and preliminary test and screening, students are sent to speciality hospitals as needed. The dispensary has an ambulance available on 24x7 basis for sending patients to better hospitals. The nurse/doctor accompanies the patient whenever the patient is sent to a speciality hospital. The dispensary is also stocked with required medicines. Consultation, medical tests and dispensing are totally free to both students, faculty and Supporting staff. In case of new campuses of Srikakulam and Ongole, a basic first aid facility is available, with one doctor (on duty during working hours) and 24x7 service of a pharmacist and a nursing assistant. They provide first aid to the patient, in case of emergency and take to nearby hospital.

Based on the above observations, the committee recommend the following action.

- To appoint an estate officer to care for the proper use of the physical facilities created at each campus.
- To conduct annual/periodical verification to find out the working condition of the infrastructure and take suitable measures immediately.

- AMC procedures may be strengthened.
- Rate of Utilisation of the facilities needs to be monitored regularly to ensure optimum deployment.

8. Promotion of Research: The University has a large number of doctorates in all the departments and are actively participating in the research work. Currently, the faculty depend on the under graduate and post graduate students for research. However, from the academic year 2021-22, doctoral program is introduced and thereby the research is expected to take off. In the year 2022, the University created a provision to grant seed money to a limited extent to the faculty to undertake primary research in areas of current interest. Initially it has earmarked an amount of Rs 20 Lakhs. The scheme is expected to lead to more projects at higher level with higher funding. This would definitely help the University to become an active center of research. The university has provided seed grant to 13 faculty members to the tune of INR 1.8 Lakhs each. This is unique scheme generally not implemented in any other state run university and is in vogue in institutes of eminence like IISc, IIT, etc. The research guidelines have been formulated with clear rules on the incentives to the faculty who undertake research projects with external funding.

Another aspect of interest is the Consultancy work undertaken by the faculty of some of the departments. The availability of sophisticated equipment in the departments of Material Science and Metallurgy and Civil Engineering, is a boon to the faculty. The University generates reasonable funding due to consultancy work. There is a scope for further improvement in this regard.

As a measure of strengthening the research culture, the university may take action on the following:

- Design an incentive mechanism to encourage faculty to carry out high order research and publications.
- Direct faculty to help students in the publication of their project reports as research papers.
- To take steps to set up few more incubation centres to promote start up culture among students.

9. Student Support: Apart from regular course program, the students are encouraged to take competitive examinations like GATE, GRE etc., For this purpose special classes

are held and they are trained with mock tests. Special lectures by experts are arranged on special topics like communication skills, personality building, current affairs, etc. However, a planned program could be done on a long term basis to the interested small group of motivated students. Also an interactive session with the alumni of the University should be arranged at least once in a year for proper guidance and motivation.

IETE technical association functions at the campus institute level. The committee is headed by the faculty coordinator and two students are nominated from each section on the committee. Under the technical associations various technical events and co-curricular activities such as paper presentations, technical quizzes, seminars, training programs, hackathons are conducted every year. One prototype of motor car won a prize at all India level in 2020. The student coordinators take active part in organizing these events under the technical associations.

: Students are represented in cultural, literary, and sports committees. The campus institutes conduct various cultural events in which student coordinators play an active role in organizing. Similarly, students organize literary activities effectively every year. Intra campus and inter campus sports and games competitions are held every year. Students also participate in inter university competitions and also won prizes. Similarly students practice Yoga every day and also participate in competitions at various levels. They won many prizes in the last five years.

10. Governance Issues: The University is administered by a Chancellor with assistance from Vice Chancellor. It also has a Finance Officer and a few supporting staff. The policy making body is the Governing Council which is constituted with eminent people in academic and professional life. With a centralized examination system being implemented from the A.Y:2021-22, a special cell conducts and monitors examination related issues and this involves a separate division with a Controller of examinations and support staff. There is a well formulated purchase policy based on the guidelines given by the State Government from time to time. However, since the fee reimbursement scheme of the Government is not effectively reaching the University, because it is credited to the beneficiary students' mothers accounts and is not paid back to the institute regularly, a proper mechanism needs to be put in place so

that it is credited to the institution account immediately after the Government pays to the student's family. Same is the case with the reimbursement for the hostel charges. Since all the students are staying in the campus, this is a huge expenditure and the institutes do not have any other resources for funding the program.

Although student elections are banned by Government of Andhra Pradesh students are nominated on various committees based on their academic merit. Class representatives are nominated for each section and the year, and they represent on the committees headed by the head of the department and also dean of student welfare. They represent academic issues and solutions are provided by the concerned. The dean student welfare also obtains feedback and involves the concerned for taking appropriate action.

Students are represented on each hostel mess to check and certify the quality of food. In RGUKT catering is outsourced and mess committees are crucial in certifying the quality of food based on which the mess bills are paid by the university. Penalties are imposed for quality deficiencies.

In addition, students are also represented on other important committees like anti-ragging, grievance redressal, internal complaints, anti-ragging squad etc and they play active role in finding solutions to the issues represented to these committees. Students also help in updating and updating the university/institute website from time to time.

11. Environmental Consciousness: Three campuses of RGUKT, at RK Valley, Nuzvid and Srikakulam are located in a green environment of trees and water bodies. The students are taught about the environmental issues through a mandatory course on Environmental science, in their engineering curriculum. Other than this, the campuses at Nuzvid and RK valley have solar power panels interfaced with the public grid supply and this caters partially to the needs of the institutes. The Rain water harvesting and Sewage water treatment are undertaken in all the campuses to mitigate the issue due to water shortage. The students are encouraged to address environmental issues through NCC and NSS programs.

12. Societal Engagement: Students of the university are continuously engaged in the extension activities in and around the campuses. The University has four campuses

located at different places across the state of Andhra Pradesh. Further the student strength is also significant numbering about 25000 put together. Therefore, the university has a large contingent of social workers that can be pressed into service anytime. The university has 15 NSS Units looked after by the duly appointed program officers. The university has adopted more than 25 villages for undertaking community service.

The students are involved in various activities which include tree plantation, swatchabharat, awareness on sanitation, voters day, basic life support, plastic free campaign, relief measure for flood victims, blood donation program, Environmental cleanings and awareness, Girl education, Women empowerment, and pulse polio program. The involvement of the students during the Covid time is remarkable.

As an evidence of their exemplary work both students and faculty have got the following awards.

1. Best young teacher award for extension activities.
2. Best Volunteer award
3. Mention in Telugu Book of Records for Swatchabharat drawing with using 8 lakh pen dots.
4. State level 3rd place in International Yoga day competition.
5. Appreciation from Governor of AP for LAYA Yoga
6. Appreciation from Vice President of India for Yoga performance.

However, it was observed that the activities are undertaken randomly and there is no coherent and coordinated effort in setting up tasks and reaching the goals. Also, proper documentation of the activities in the form of reports is desired. Since the student strength is very large, the volume of extension activities undertaken need to be increased,

13. Campus Life: RGUKT is a residential campus and the students and faculty are provided with residential facilities. The students are located in different hostel blocks separately for Boys and Girls. At each campus there are four blocks of Boys hostels and 4 blocks of girl's hostels. Due to the large number of students, each room accommodates six students and the room size is reasonably big. They have dining facilities with four dining halls. Hygienic food is served to students three times a day. There is a canteen wherein snacks, cool drinks, etc., are available for students on

payment basis. There are sporting and other recreational facilities for students to exhibit their talent in sports and games, both vocal and instrumental music, dance, etc. The Student Activity Centres are Nuzvid and RK Valley are well equipped with modern facilities like auditorium, wooden floored badminton courts, Basket ball court and a well equipped Gymnasium. Play ground for outdoor games is available in Nuzvid, RK Valley and Ongole campuses where students can practice Cricket, Soft Ball, etc. Play ground is under preparation at srikakulam campus. A cultural festival is organized by each campus every year, where the students from all campuses exhibit their multi dimensional talents.

The faculty is provided with rent free accommodation and there are about 240 residential houses available for the purpose. For the recreation of the children of the faculty there are parks with appropriate equipment. The faculty has shuttle badminton courts and volley ball courts for their recreation.

14. Concluding Remarks:

RGUKT is a unique model in the entire country. It is started with the objective of transforming rural based students into global players by imparting state of the art engineering education. It was the brainchild of the then visionary chief minister, Dr.Y.S.Rajasekhara Reddy. It is the only university in this part of the country admitted the students after all the infrastructure facilities put in one place. Faculty are drawn from premier institutions like IITs and NITs. True to its objective, it has adopted the model of learning by doing with the exclusive appointment of home room tutors. The model is still continued. RGUKT is also the lone institution, which admits about 4400 students every year into a 6-year integrated Engineering course with plus 2 combined.

In the opinion of the committee, the University is making rapid strides, breaking the new ground. With the financial support of the Government of Andhra Pradesh, there is no doubt that it can become an institution of excellence in the years to come.

The committee thanks the directors of all the four campuses for extending courtesies and making the visit purposeful.


Prof.K.Viyyanna Rao


Prof.D.Harinarayana


Prof.G.Mohan Rao