REPORT OF THE EXPERT COMMITTEE CONSTITUTED BY THE UNIVERSITY GRANTS COMMISSION TO CONSIDER THE PROPOSAL OF ARULMIGU KALASALINGAM COLLEGE OF ENGINEERING, KRISHNANKOIL FOR GRANT OF DEEMED TO BE UNIVERSITY STATUS UNDER SECTION 3 OF THE UGC ACT.

The University Grants Commission received a proposal from Ministry of Human Resource Development for grant of Deemed to be University status to Arulmigu Kalasalingam College of Engineering, Anandnagar, Krishnankoil-629 190.

With a view to examine the proposal and to make an on the spot assessment and evaluation of the academic programmes, infrastructural facilities and other aspects of the institution, the Chairman, University Grants Commission constituted an Expert Committee comprising of the following members:

1. Dr. (Mrs.) Shashi Rai   ...   Convener
   Member, UGC

2. Prof. P.K. Sen
   Head, Department of Applied Mechanics
   Indian Institute of Technology, New Delhi

3. Prof. D. Roy Choudhary
   Professor of Department of Computer Engineering
   Delhi College of Engineering, Delhi

4. Prof. A.B. Pandit
   Institute of Chemical Technology
   University of Mumbai, Mumbai

5. Prof. P.R. Wilson
   HOD, School of Management
   Cochin University of Science & Technology, Kochi

6. Prof. Krishan Gopal
   Department of Electrical Engineering
   National Institute of Technology, Kurukshetra

Dr. (Mrs.) Renu Batra, Joint Secretary was nominated as the coordinator of this Expert Committee visit.

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The Committee visited the Institute on 2nd & 3rd April, 2006. Shri T.O Kalasalingam, Chairman of the Trust welcomed the Committee. At the outset, a brief presentation was given by Dr. C. Thangaraj, Principal of the College. He briefed the members of the growth achieved in spheres of academic activities by the Institute. He also mentioned how the conferment of Deemed to be University status would help the Institute in pursuing excellence.

The Committee went around the sprawling campus of the Institute and visited class rooms, various laboratories, central as well as departmental libraries, infrastructural facilities, hostels and students' amenities.

The Committee also had an exclusive interaction session with faculty members, a group of students and administrative staff of the Institute. The Committee also had an opportunity to meet with Alumni of the Institute and some members of Parents-Teachers' Association.

After thorough inspection of the infrastructural facilities, study of the documents furnished by the Institute and the discussions with the Management, the Committee makes the following observations and recommendations:

The Institute

Arulmigu Kalasalingam College of Engineering has been established by Kalasalingam and Anandham Ammal Charities at Krishnan Koil, a backward rural area, away at a distance of 65 Kms. from Madurai, with the objective of providing quality higher education to the rural youth at affordable cost. The Institute is located in Krishnan Koil village of Srivilliputtur Taluk in Virudhunagar district. The college is well connected by road.

For the purpose of applying for the Deemed to be University Status for Arulmigu Kalasalingam College of Engineering, a new trust has been created in the name of "Kalasalingam Academy of Research and Education" which is the name of the proposed Deemed to be University.

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Aims and Objectives

i) To be a recognized leader in the integration of learning and discovery both at the undergraduate and at higher levels and for its research and teaching excellence.

ii) To make academic offerings increasingly interdisciplinary and industry oriented.

iii) To make curriculum learner friendly, and to integrate soft skill requirements with regular credit offerings.

iv) To expand education services and research in association with leading industries and international universities.

v) To maintain currency in informational technologies that support student-centered learning (e-learning) and the rapidly evolving educational needs of all students, whether on or off campus.

vi) To have a strong sense of campus community and improve its competitive status as an employer.

vii) To create centres of excellence in critical areas that promote R&D activities of social relevance.

viii) To set up Technology Business Incubators that create spin-offs.
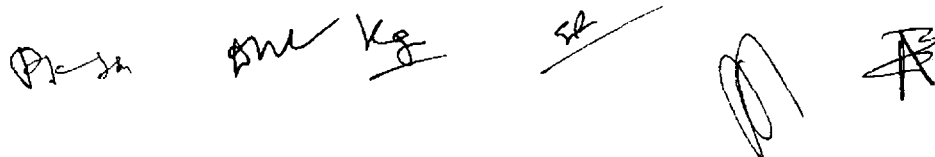
Infrastructure

The institute is situated in a serene, sprawling 95 acres of campus surrounded by moutaineous setting on Madurai – Courtrallam National Highway (NH 208) with a total built-up area of 41,000 sq.m.

The institute is provided with the following well-laid out buildings:

- Administrative Block
- 8 Academic Blocks
- Buildings for Central Amenities

The institute has a total of 59 laboratories in its various academic departments, good number of class rooms,1 Central Library besides other departmental libraries.

The Institute is having 2 Hostels for Boys, 2 Hostels for Girls and 1 PG Hostel. Staff Quarters, Guest House with the capacity for 40 persons is under construction.

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The management has taken adequate care in providing central amenities to the Staff as well as to the students. The institute has a well maintained Indoor Stadium, Play Ground, Canteen, Auditorium, 24 hour Health Centre and a 20 bedded hospital for emergency with 3 doctors on duty, Water Treatment Plant, Mineral Water Plant, Conveniences, Well equipped fitness Centre, Canteen, Documentation Centre.

The Institute gets power supply through 9 transformers installed in the campus with 500 KV power back up through generators and 250 KVA through UPS. For water supply on the campus, there are 14 tube wells. For transportation the Institute has 10 buses to ferry the staff and the students.

It also houses Post Office and Bank with 24 hours ATM Centre.

ACADEMIC COMPONENT

The Institute is engaged in teaching, research and extension activities in the field of engineering, management studies and in other related areas. It offers nine U.G. Programmes and 15 PG Programmes.

Academic programs offered and year of commencement with the approved students' intake

S. No.	Courses	Year of Commencement	Approved Students intake (AICTE /Anna University)
I. UNDER GRADUATE PROGRAMS:			
01.	B.E. Civil Engg.	1984-85	60
02.	B.E. Mech. Engg.	1984-85	60
03.	B.E. Comp.Science & Engg.	1984-85	120
04	B.E. Instrumentation & Control Engg.	1988-89	60
05.	B.E. Electrical and Electronics Engg.	1992-93	60
06.	B.E. Electronics and Commn. Engg	1994-95	60

07.	B.Tech. Information Technology	1998-99	60
08.	B.Tech. Bio Tech.	2002-03	60
09.	B.E. Chemical Engg.	2005-06	60

II. POST GRADUATE PROGRAMS:

1.	M.E.Comp. Science & Engg.	1995-96	25
2.	M.E. Energy Engg.	1996-97	25
3..	M.E. CAD/CAM	2000-01	25
4..	M.E. Digital Commn. Network	2001-02	25
5.	M.E.Power System Engg.	2002-03	18
6.	M.E. Environmental Engg.	2002-03	18
7.	M.E. Network Engg.	2003-04	18
8.	M.E. Control & Instrumentation Engg	2003-04	18
9.	M.E. Embedded System Technologies	2004-05	18
10.	M.E. VLSI Design	2004-05	18
11.	M.B.A.	1994-95	30
12.	M.C.A.	1997-98	60
13.	M.Sc. Computer Science & Information Tech. (2 yrs)	2000	16
14.	M.Sc. Medical Physics	2004-05	20
15.	M.Sc. Applied Maths.	2004-05	30

Present Total Students' Enrolment

Pursuing UG Degree	:	2237
Pursuing PG Degree	:	487
Total	:	2724

Faculty

There are   255 faculty members as indicated in the following table:

List of Faculty Members (Department & Designation-wise)

S.No.	Department	Prof.	Asst. Prof.	Lecturer	Total
1.	Civil Engineering	04	05	07	16
2.	Mechanical Engineering	06	06	14	26
3.	Computer Science & Engg.	06	11	19	36

4.	Electronics & Commn. Engg.	06	14	21	41
5.	Electrical & Electronics Engg.	03	04	15	22
6.	Instrumentation & Control Engg.	03	06	9	18
7.	Bio-Technology and Chemical Engg	02	03	06	11
8.	Information Technology	02	02	13	17
9.	Basic Sciences	05	06	28	39
10.	M.B.A.	03	03	04	10
11.	M.C.A.	02	06	11	19
	Total	**42**	**66**	**147**	**255**

- All the faculty members have the required essential qualification for the posts they have been appointed for.

- Out of 255 faculty members 49 are having Ph.D. degrees and 39 members are pursuing Ph.D. degrees and 10 are working for M.S. degrees.

- Twenty four faculty members have been recognized by the Anna University as research supervisors for guiding Ph.D. students ten more faculties have applied for the recognition.

Research Activities

The institute appears to be fairly active in the following broad areas of research:
- Network Embedded Technology and software development
- Routing Algorithms, Wireless and convergent networks, Cryptography, Network Security, Combinatorics.

The faculty has published about 240 research articles in referred journals in addition to nearly 300 articles in the national and international conferences of repute.

Library :

A centrally air-conditioned library building covering an area of more than 1,500 sq.mtrs. is operational. The library has more than 35,000/- volumes of books,

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210 periodicals including 103 international journals including online access. The library has a well-laid out plan for reading room, stacking, issuance of the library holdings. In addition to the above, library has a good collection of audio-video CDs and Cassettes and viewing facilities. The stock of the library has been computerized and the issuance is currently being computerized. The present value of books, journals, CDs, etc. are in excess of Rs.1,00,00,000/-

Electronification

The entire network of computers including the central computrational facilities has a fibre optic backbone with junction box and switches available to each of the buildings and departments of the institute. The same is being converted with a wire less connectivity to have the entire campus networked on a wire less basis. In addition to the Central Computing facilities, each department have local area network (LAN) which is also having connectivity to the central computing facility. The relevant commercial software required for under-graduate as well as post-graduate works are currently available in the individual departments which are currently being loaded on the central computing facility.

Internet access to all the 300 nodes connected in LAN through 2MBPS BSNL leased line and 128 KBPS V-SAT connection is available.

Institute – Industry Interaction

The Institute has reasonable level of interaction with the national and international agencies. Institute has executives from companies like ABB, Hexaware, HCL Technologies, TVS, Hyundai Motors as Advisors on their Advisory Council and have also given expert lectures to the faculty and students of the institute on various occasions. Industries such as Sun Microsystems have assisted the setting up of some of the networking laboratories of the Institute and these laboratories are recognized training centres for dissemination of education in networking security, software, etc.
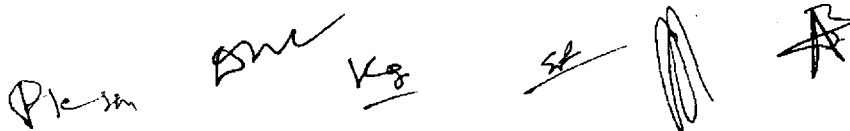
International Collaboration

Institute has also ISO:9001 certification by M/s. RWTUV, Germany and having academic collaboration with Aachen University of Technology, (RWTH) University, Germany and Carnegie Mellon University, USA. The areas identified for this academic collaborations involved in exchange of Master's students are automotive engineering, hi-performance computing, sensors and embedded systems and universal digital library project.

Innovative Programmes

TIFAC (CSIR) has identified the institute to provide training in the core areas of networking and research. A separate centre under this programme has been constructed and has become functional to serve as a nodal centre to provide technology development and adaptation criteria. To provide training in all the areas of network engineering and to promote and to monitor R&D activities and their application in the networking. The centre is also expected to be a national agency for Certification of Network Products.

It was heartening to note that the Institute is making special efforts to improve the communication skills (in English) of the students especially from rural background. This effort is supplemented by a well developed audio-visual language lab, a very innovative way of improving the communication skills.

The Institute has also started Entrepreneur Development Cell funded by Department of Science and Technology, Government of India, which would be extremely useful to the students as well as the nearby rural community.

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Brief Profiles of the Departments

A. Basic Sciences

- Established to teach the all the first year students of undergraduate engineering courses in the subject of Basic Sciences. This department also conducts the M.Sc. course in Medical Physics.
- Total faculty strength is 39.
- Of the above, 8 members are pursuing their Ph.D. degrees.
- During the last 3 years the department also undertaken 1 research project and organized one national level conference.
- For the benefit of teachers of the department one faculty development programme was also organized.
- During the last 3 years the total no. of papers published by the faculty stands at 31.
- The departmental library has 5302 books worth Rs.10,70,000/-
- It has the following two laboratories with equipments worth Rs.9,45,000/-
    - i)   Chemistry Lab
    - ii)   Physics Lab

B. Biotechnology and Chemical Engineering

- Established in the year 2002 it offers B.Tech. programme. B.Tech. in Chemical Engineering was started from the year 2005
- Faculty has published 8 papers in the last three years and organized 1 national level conference.
- Departmental Library has some 670 books and subscribes to 12 journals of which the total value stands at Rs.6,75,657/-
- The department has the following 5 laboratories with the value of its equipments stands at Rs.60,20,000/-
    - i)   Microbiology and Cell Biology Lab
    - ii)   Chemical Engineering Lab
    - iii)   Bioprocess Lab and Down stream

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    iv)   Genetic Engineering & Molecular Biology Lab

    v)   Biochemistry & Immunology Lab

C. Civil Engineering

- Established in 1984. Currently it is conducting B.E. (Civil Engg.) and M.E. (Environmental Engg.) programmes.
- 4 of its faculty members are currently pursuing their Ph.D. degrees.
- During the last three years 3 research projects have been undertaken and 7 papers have been published.
- The faculty have attended 20 national and international conferences .
- The departmental library has books & other materials worth of Rs.4,00,000/-

It has following laboratories with the total investment of Rs.29,00,000/-

    ii)   Strength of Materials Lab

    iii)   Fluid Mechanics and Machinery Lab

    iv)   Geo-Technical Engineering Lab

    v)   Concrete and Highways Lab

    vi)   Environmental Engineering Lab

    vii)   Survey Lab

    viii)   Computer & GIS Lab

D. Computer Science & Engineering

Established in 1984, the department currently offers 1 B.E. and 2 M.E. programmes.

- 5 of its faculty members are currently pursuing their Ph.D. degrees.
- 14 students are also registered for Ph.D. with this department
- During the last 3 years the faculty has organized 3 national conferences. 3 Faculty Development Programme were also conducted.
- Publication work of the faculty during the last three years stands at 3 and around 6 papers were presented in various conferences

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- The departmental library has books, CDs & other materials worth of Rs.4,25,000/-

It has following laboratories with the total equipments worth Rs.70,80,000/-

- ii) Systems Software & DBMS Lab
- iii) Internet & Web Technologies Lab
- iv) Graphics and Multimedia Lab
- v) Programming Lab
- vi) Operating Systems Lab
- vii) Entry Level Lab
- viii) Middle Level Lab

E. Electronics & Communication Engineering

Established in 1993, the department offers 1 NBA accredited UG programme and 2 PG programmes.

- 5 of its faculty members are currently pursuing their Ph.D. degrees.
- The department has 6 part-time research scholars.
- During the last 3 years the faculty has organized 1 national conference and undertaken 1 research project. 2 Faculty Development Programme were also conducted.
- Publication work of the faculty stands at 122 in the national & international journals and 123 papers were presented in various conferences
- The departmental library has books & other materials worth of Rs.5,00,000/-

It has following laboratories with the total equipments worth Rs.70,80,000/-

- i) Digital Signal Processing Lab
- ii) Communication Lab
- iii) Linear & Digital Circuit Lab

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iv) Microwave Lab

v) Embedded and Advance Design Center Lab

F. Electrical & Electronics Engineering

Established in 1992, the department offers 1 UG programme and 2 PG programmes.

- 4 of its faculty members are currently pursuing their Ph.D. degrees.

- During the last 3 years the faculty has organized 2 national conference and undertaken 4 research projects. 3 Faculty Development Programme were also conducted.

- Publication work of the faculty during the last three years stands at 15 in the national & international journals and 30 papers were presented in various conferences

- The departmental library has books & other materials worth of Rs.2,00,000/-

It has following laboratories with the total equipments worth Rs.97,00,000/-

i) Electrical Machines Lab

ii) Applied Electronics Lab

iii) Measurements & Control Lab

iv) Power system Simulation Lab

v) Power System Automation Lab

vi) Embedded System Lab

G. Instrumentation & Control Engineering

Established in 1987, the department offers 1 UG & 1 PG programmes.

- 6 of its faculty members are currently pursuing their Ph.D. degrees.

- During the last 3 years the faculty has organized 1 national conference and undertaken 1 research project. 5 Faculty Development Programme were also conducted.

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- Publication work of the faculty during the last three years stands at 5 in the national & international journals and 31 papers were presented in various conferences

- The departmental library has books & other materials worth of Rs.4,00,000/-

  It has following laboratories with the total equipments worth Rs.30,50,000/-

  i)   Process Control Lab
  ii)   Instrumentation Lab
  iii) Virtual Instrumentation Lab

H. Information Technology

Established in 1998, the department currently offers 1 UG programme.

- 11 of its faculty members are currently pursuing their Ph.D. degrees.

- During the last 3 years the faculty has undertaken 1 research project and organized 1 Faculty Development Programme were also conducted.

- Publication work of the faculty during the last three years stands at 4 in the national & international journals and 19 papers were presented in various conferences

- The departmental library has books & other materials worth of Rs.4,00,000/-

  It has following laboratories with the total equipments worth Rs.97,00,000/-

  i)   Computer Graphics and Multimedia Lab
  ii)   Internet and Web Technology Lab
  iii) Operating System Lab
  iv)   System Software and DBMS Lab
  v)   Advanced Design Center Lab

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I. Mechanical Engineering

Established in 1984, the department currently offers 1 UG programme and 2 PG programmes.

- 7 of its faculty members are currently pursuing their Ph.D. degrees.
- The faculty has 3 ongoing research project.
- Publication work of the faculty during the last three years stands at 8 in the national & international journals and 37 papers were presented in various conferences
- The departmental library has books & other materials worth of Rs.6,00,000/-

It has following laboratories with the total equipments worth Rs.1,11,00000/-

i) CAD Lab
ii) CAM Lab
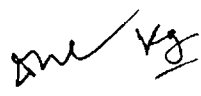iii) Dynamics Lab
iv) IC Engines Lab
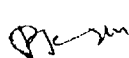
J. Business Administration

Established in 1994 the department currently offers 1 MBA programme.

- 3 of its faculty members are currently pursuing their Ph.D. degrees.
- Publication work of the faculty during the last three years stands at 14 in the national & international journals and 51 papers were presented in various conferences
- The departmental library has books & other materials worth of Rs.2,75,000/-
- It has a Business Application Laboratory with the investment stands at Rs.13,00,000/-

K. Computer Applications

Established in 1997, it currently offers 1 MCA and 1 M.Sc. programme.

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- 2 of its faculty members are currently pursuing their Ph.D. degrees.
- Publication work of the faculty during the last three years stands at 1 in the national & international journals and 7 papers were presented in various conferences.
- It has advance level labs with the total equipments worth Rs.20,25,000/-

Training & Placement

Currently, the Training and Placement Cell works in collaboration with the Cell of the Anna University with some initiatives of the institute catering to the specific needs of its students. Special training programmes teaching interview techniques, group discussion activities are conducted by the institute's own initiative.

Extra-curricular and Extension Activities:

The institute has excellent sports facility including indoor stadium, athletic track, foot ball stadium, etc. The institute also proposes to construct a swimming pool. The institute's students regularly participate in various sports meets and have also organized such meets in the past.
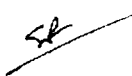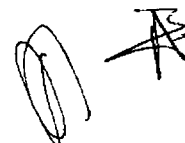
Finances :

The Institute is of self-financing and has a sound financial basis with an annual budget of Rs.9,09,55,589/-- and a surplus balance of Rs.68,106,188/- over the income & expenditure statement for the year ended 31.03.2005.

Compliance of other conditions laid down under UGC guidelines

1. The Institution is registered as a Irrevocable Educational Charitable Trust and is registered vide No.682/04 dated 27/09/2004.

2. The relevant column indicating the ownership of movable and immovable assets in the name of the new trust is reproduced from the deed document submitted by the institute:

   "to remain vested the movable and the immovable assets with the Institute". (Page-6).

3. The institution has also submitted Fixed Deposit Receipts issued in the name of Kalasalingam Academy Education and Research for a sum of Rs.5,00,00,000/- towards Corpus Fund.

4. The Institute has submitted a copy of the revised MoA as per the UGC model MoA.

Observations / Suggestions of the Committee

General:

- The Committee was appreciative of the initiative of the institute addressing the requirements of the rural communities by providing such an opportunity of excellent education in engineering & technology to them. It is also heartening to note that a large number, in excess of 30% are girl students, which indicates the acceptability of the College.

- The vision and the facilities currently existing in the institute are indeed laudatory and is an indication of the commitment of the management for providing quality education in the rural area.

- The Committee feels that the necessary infrastructure required for the expected growth in teaching and research is in place.

- The existing infrastructure is capable of taking care of the overall development of the undergraduate students, i.e. in academics and personality development.

- Financial standing of the management is sound to meet the requirements of the institute's future growth.

- The faith shown by the parents, students, and the alumni in the management will go a long way in ensuring that the standards of the education are maintained or improved.

- The management's efforts in bringing reputed industries to such rural parts and involving them in the academic activities speaks volumes of their commitment towards the well-being of the students.

Specific:

1. There is a need to improve upon the efforts and resources required to start the research and development activities of the institute.

2. The faculty is motivated and should be encouraged to participate in research related activities / methodologies by having some institutional promotional schemes based on their research output rather than based on their teaching abilities. The Committee feels that some endowments specifically to provide seed money for the research activities to the new faculties needs to be created.

3. More efforts are required on the placement front incorporating the alumni of the institute and using their good offices for such an activity.

4. Personalized attention to the students needs to be enhanced as majority of them are from rural background to make them competitive in the open job market.

5. The library budget needs a quantum jump in line with the research efforts.

6. Additional laboratory facilities dedicated to research need to be created to push the research and developmental activities.

7. The institute is requested to explore the possibility to employ their excellent computer and networking facilities to offer web based learning projects.

8. The institute is required to attract students for their post-graduate programmes by having more collaborative projects.

9. Special efforts are required to retain and motivate young faculty by incentive schemes to improve the current academic standing of the institute.
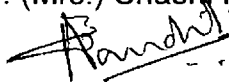
10. The impressive growth shown by the institute in terms of their ranking among the private engineering colleges needs a special mention and it is expected that they will continue their upward trend in future.
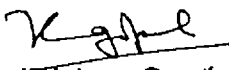
Recommendations

In summary the committee is thoroughly satisfied with the existing facilities, infrastructure available for the academic and overall development of the student community. The Committee feels that the current efforts of tne institute are extremely beneficial to the nearby rural community including the students. The sense of achievement and the sense of pride which the surrounding rural community shows in the institute's effort indicates the correctness of the management's vision towards the upliftment of the rural youth.

Keeping in view the commitment of the management, the motivation and potential of the young faculty, availability of the infrastructure and the growth achieved in the past particularly in the rural settings **the Committee recommends to the UGC that the Kalasalingam Academy of Research and Education (currently existing under the name and style of 'Arulmigu Kalasalingam College of Engineering")may be conferred the Deemed to be University Status.**
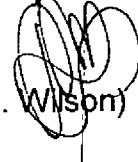
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