

COLLEGE OF ENGINEERING, KARUNAGAPPALLY

# GOVERNANCE PLAN

TEQIP TEAM, CEK

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## 1 Overview

College of Engineering, Karunagappally was founded in the year 2000 under the Institute of Human Resources Development (IHRD), a Govt. of Kerala undertaking. The college is situated at Thodiyur village, 3 km from Karunagappally. The institution is situated in a pristine 22 acre plot owned by Director, IHRD. The college started with 3 BTech branches viz. Electronics and Communication, Computer Engineering and Information Technology. All the courses are affiliated to Cochin University of Science and Technology. The location of the institution was so chosen that it imparts quality technical education to rural students especially women students.

In the year 2011, two new courses viz. *BTech in Electrical and Electronics and M Tech in Image Processing (under the Department of Computer Engg.)* were started. The BTech course has a strength of 60 and the MTech course has a strength 24. In the year 2012, Department of Electronics and Communication started MTech programme in *signal processing*.

The courses offered are designed to cater to the industry's urgent demand for skilled professionals and with a vision to create engineers having the drive, skill, and confidence to become the pioneers of tomorrow. Unique in its structure, methods and goals, the college is strongly rooted in a philosophy of training and research that emphasizes the intimate relationships between knowledge and its application and seeks to promote the creation of an ideal society. The institution is maintaining a healthy pass percentage in the previous years, which is comparable with the other self-financing institutions of Kerala.

College of Engineering Karunagappally is located in the coastal area of Kollam District. The presence of college helps the people to conceive the need of technical education in the modern era and helps them to improve the standard of living. The college has implemented various skill development programs for women in the village, as part of the women empowerment scheme of the Government of Kerala. Through this program, the women were trained for starting new job preparedness in the field of electronics and computer maintenance and servicing. The college has conducted training programmes for school children in familiarization of electronic equipments, for PWD staff and health department staff in different software skills. Under

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MODROBS scheme of AICTE the institution had received a grant of Rs.14.5 lakhs in 2011 for modernizing Electronics project lab and Computer lab. The college has highly competent faculty, comprising of many members with more than 15 years of teaching experience especially in the fields of Electronics and Computer Engineering. Faculty members show keen and sustained interest in enriching their technical and academic capabilities. Students are encouraged to present their research oriented works in various national and international conferences and journals. There are many instances of our students securing top positions in the University. After periodic analysis of the student performances, a team of faculty members provide necessary counselling to the needy students to overcome their difficulties in the areas of study skills, attitudes and emotional intelligence.

The institution is having a built-up area of 6300 m<sup>2</sup> which includes fully equipped state- of-the-art laboratories, for catering to the student's requirements to gain practical knowledge apart from the theoretical knowledge. Construction of another academic block with an area of 3000 m<sup>2</sup> with the financial assistance of NABARD under RIDF scheme will be started soon. There is a vast collection of books for technical reference and knowledge enhancement spanning from the core fields of technology to other miscellaneous areas like management which are constantly updated. Student Chapters of IEEE, ISTE, CSI and technical associations of various departments are effectively functioning through regular activities like technical seminars, symposiums, workshops etc. The Placement Cell is consistently striving to enhance the quality education and placements at the institution. Various seminars are being organized at regular basis for the students to improve their communication skills and personality. The college has a strong and active PTA.

The key objectives of the foundation of institution and its mission are summarized in the next chapter.

## 2 *Mission and Vision*

### 2.1 *Mission*

To fulfill the expectation of our society by equipping our students to stride forth as resourceful citizens, aware of their immense responsibility and to make the world a better place to live. To achieve, academic excellence in engineering and technology through innovation in teaching and faith in human values.

#### 2.1.1 *Analysis of Mission*

- To achieve excellence in technology.
- To promote innovation in teaching and learning.
- To promote entrepreneurship skills.

### 2.2 *Vision*

To provide education in a scholarly environment to produce World class Engineers for converting global challenges into Opportunities through Value based Quality Technical Education.

#### 2.2.1 *Analysis of Vision*

- Providing quality technical education with value addition.
- Moulding citizens of strong character.
- Orientation to meet global challenges.
- Initiating original thinking.

Based on the stated vision and missions, key objectives of the institution and its programmes are formulated as discussed in the next chapter.

## 3 Objectives

The institution is founded with the key objective of imparting high quality technical education to students from rural sector, especially women students. To upgrade the institution to a frontline institute and a centre of excellence in order to impart the best knowledge and expertise in the fields of engineering and to produce World class Engineers for converting global challenges through “Value Embedded Quality Technical Education ”and also to develop this institution as an academy of higher learning in the field of Engineering and Technology. The various avenues in which developments are sought for are

### 3.1 Academic Excellence

Academic excellence in the field of engineering education is the primary concern. This is intended to achieve by uplifting the present infrastructure and making available highly qualified and competent teaching faculty. The concerned university will be entreated to upgrade the syllabi to meet the new challenges and hence to enhance the academic standard in engineering education.

### 3.2 Interaction with Fellow Institutions

One of aims of the IDP is to share expertise and infrastructure with fellow engineering educational institution in order to achieve excellence. This is a give and take policy of high standard education which will be implemented by mutually exchanging teachers and students and by making use of the best infrastructure on both ends.

### 3.3 Social Commitment

The ultimate is to inculcate professional ethics into the minds of the engineering in order to make them aware of their social commitment. The building engineering students should come out with an enthusiasm to serve the public while serving themselves. Various projects will be initiated to improve the quality of living of the people surrounding the college.

### 3.4 *Research and Development*

Research in core engineering areas are to be enhanced. The trend in research in the institution are in the field of medical image processing, nonlinear signal processing etc. Interaction with research institutions are to be enhanced and more funding for research will have to be generated.

The features of the development plan of the institution designed to meet the above objectives are

- Promoting improvement in teaching, training and learning facilities.
- Improving employability of graduates and Post graduates.
- Enhancing Post Graduate education
- Faculty development in subject domain and pedagogy.
- Modernization and strengthening of Laboratories.
- Increased learning outcomes of students.
- Developing the facilities in library.
- Aiming at eventful Training and Placement Cell.
- Implementing academic and non-academic reforms.
- Starting of new PG programmes.
- Obtaining Autonomous institutional status.
- Accreditation of existing programmes.
- Plans for higher academic achievements of students.
- Special support for weak students and Finishing school.
- Interaction with the fellow institutions of IHRD where TEQIP-I had already been implemented promoting improvement in teaching, training and learning facilities.
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The strategic plan to strengthen the institution to achieve the objectives is developed after performing the SWOT analysis. The results of SWOT analysis are detailed in the next chapter.

## 4 SWOT Analysis

The analysis was performed to identify the strengths, weakness, opportunities of and threats to the institution. Prof. Jagathy Raj V P of School of Management studies, Cochin University of Science and Technology was entrusted with conducting SWOT analysis. The methodology adopted by Prof. Jagathy Raj V P involved in conducting brainstorming sessions with students, members of faculty and staff. Students, faculty and staff participation in the SWOT analysis are 100, 25 and 5 respectively. Questionnaires were distributed to assess the strengths, weaknesses, opportunities and threats. Key findings were formulated based on the responses.

- Even though the institution possesses a better land area having eco friendly surroundings there is a lack in infrastructure facilities which is mainly due to paucity of fund.
- Inability to implement academic and non academic reforms which is due to shortage of facilities.
- Inability to impart High Quality Engineering Education which is now given by premier institutions.
- Non availability of advance labs such as Robotics, Embedded systems, DSP labs etc. and a well furnished library for demand driven Research and Development and innovations.
- Industry- Institute collaboration is not effective.

The key results of SWOT analysis are taulated below.

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Sufficient land for development</li> <li>• Committed and motivated staff</li> <li>• Periodically update curriculum</li> <li>• harmonious relationship with all stakeholders</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• Low placement.</li> <li>• Senior faculty positions are vacant</li> <li>• Conventional mode of teaching.</li> <li>• Poor alumni interaction.</li> <li>• Scarcity of built up space.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Greater scope for research and funding.</li> <li>• Collaboration with premier research organizations and industry.</li> <li>• Assistance from NABARD for the construction of an academic block.</li> <li>• High demand for skill development programme.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Greater competition from private sector.</li> <li>• Increasing establishment expenses.</li> <li>• Decreased demand for IT oriented courses.</li> </ul>

Depending on the strengths of the institution, strategies are developed to exploit the opportunities as explained in the next chapter.

## 5 Strategy Plan

Based on the strengths and the opporunities that can be exploited, the strategy plan is developed as summarized in the table below. The goals are defined and the key objectives under each goal are tabulated. The strategy to achieve each objective is tabulated in the third column.

The indicators as to the performance of each plan need be formulated. Some key performance indicators are defined in Sec. 5.1.

Goals	Objectives	Strategies
Congenial academic environment to attract meritorious students	<ul style="list-style-type: none"> <li>• Conducting 100 % classes</li> <li>• Enhance external funding to 50 lakh</li> </ul>	<ul style="list-style-type: none"> <li>• Compensatory classes.</li> <li>• New teaching methodologies</li> <li>• Prepare proposals, using the seed money, and apply for funding to various agencies</li> </ul>
Faculty Improvement	<ul style="list-style-type: none"> <li>• Enhance the strength of regular faculty to 80 % classes</li> <li>• Enhance the faculty qualification improvement to PhD by 20 %</li> </ul>	<ul style="list-style-type: none"> <li>• Regular appointment.</li> <li>• Deputation to PhD</li> </ul>

Goals	Objectives	Strategies
Achieving employability of graduates	<ul style="list-style-type: none"> <li>• Employing 60 % of passed UG students</li> <li>• Employing 80 % of passed PG students</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthening placement and training cell</li> <li>• Setting up language laboratory</li> <li>• Soft skill training</li> </ul>
Social commitment	<ul style="list-style-type: none"> <li>• Achieving 100 % equity among students</li> <li>• Interaction with students from nearby schools</li> </ul>	<ul style="list-style-type: none"> <li>• Remedial classes</li> <li>• Visits to nearby schools by senior students</li> </ul>
Promoting extra curricular activities	<ul style="list-style-type: none"> <li>• Enhancement in participation in technical and nontechnical programmes</li> <li>• National and international level symposiums and conferences</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen the various committees</li> <li>• Strengthen physical education</li> <li>• Motivate students to participate in various events</li> </ul>
Promoting entrepreneurship skills	start up companies by 5 % of students	Training students to start up companies

## 5.1 Key Performance Indicators

The key performance indicators set for various strategies are

### 5.1.1 Equity

The transition rate of students increase every semester as they get familiarized with the curriculum, The observations in the 1st three years indicate that the percentage pass in the first year varies from 30 % to 40 % which elevates to 55 % to 65 % as the student reaches the fourth year. The transition rate at the first year should be elevated to 50 % to 60 % in three year's time.

### 5.1.2 *Faculty Development*

In three year's time all the faculty should have master's degree. The number of PhD holders should be doubled within this period.

### 5.1.3 *Faculty Positions*

80 % of the senior faculty positions should be filled and at least 90 % of the entry level positions are to be filled in three year's time.

### 5.1.4 *Research Funding*

Eight projects are given seed money this year. The proposals should attract 1.5 crore worth funding in three year's span.

### 5.1.5 *Continuing Education*

30% to 40 % of the passed students in UG should pursue higher studies such as MTech or MBA.

### 5.1.6 *Institute Interactions*

Five MoUs for research in various areas with premier research institutions is envisaged as performance indicator.

### 5.1.7 *Research Outputs*

At least 5 publications with impact factor not less than 1.5 in three years is envisaged as another indicator.