REVISED
IDP (INSTITUTIONAL DEVELOPMENT PROJECT) FOR 2016 WITH UPDATED TARGET INDICATORS

FOR

Sub-Component 1.1:
Strengthening Institutions to improve Learning Outcomes and employability of Graduates

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME (TEQIP)

PHASE-II

Submitted by

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1. INSTITUTIONAL DEVELOPMENT PROPOSAL (IDP)

1.1 Executive summary of the IDP :

The Madhav Institute of Technology & Science, Gwalior was established in the year 1957 by His Highness Late Sir Jiwaji Rao Scindia, Maharaja of Erstwhile State of Gwalior with a vision of **"To create world class quality Engineers and Technocrats capable of providing leadership in all spheres of life and society"**.

Since the inception of Madhav Institute of Technology & Science, we have constantly strived for excellence and quality. Today the institute is grant in aid institution of Government of Madhya Pradesh, enjoys a track record of extremely good results. Needless to say our commitment to further enrich the quality of education will be our constant feature and commitment. The demand from across the country for a vibrant Technical Human Resource has made as committed for the same.

The Institution is committed to achieve the excellence in the Technical Education by the funds received from Project TEQIP–II under subcomponent 1.1 "Strengthening Institution to improve learning outcomes and employability of graduates". The IDP for Rs. 10.00 Crores is submitted with bifurcation of funds in the various deliverables to achieve the targeted goal. The bifurcation of requirement of funds year-wise is as follows :

Financial Year	Requirement of Funds (Rs. In Crores)
2011-12	1.76
2012-13	3.16
2013-14	2.12
2014-15	2.11
2015-16	0.85
Total	**10.00**

The institute is running 08 (Eight) UG Courses and 09 (Nine) PG Courses in the various areas of Engineering. The most of the faculty in the various streams are having Post Graduate and a good number of Ph.D. degree. The institute is ranked among the most leading institution of North India with the commitment towards the quality education since last 53 years. The academic autonomy to the institute was granted by the affiliating university in 2002, since then, the institution is exercising its autonomy to attain high standards of examination and curriculum reforms.

The main objectives of the IDP are as follows :

(i) To get all the eligible programmes accredited by NBA within a span of one year.

(ii) To provide the opportunity to faculty members to attain Ph.D. and M.Tech. degree.

(iii) The more than 90% faculty is having M.Tech. degree and 40% of them having Ph.D. degree within a span of two years.

(iv) The modernization of existing UG and PG laboratories and development of new PG Laboratories.

(v) Starting of new PG programmes.

(vi) Improvement in the existing infrastructure of Labs and classrooms.

(vii) The finishing school concept will help to overcome the problem of regional language understanding and soft skills among the students which will result in the Increase in the campus placements and average salary of placement package.

(viii) The implementation of pedagogy will help in imparting quality education more effectively.

(ix) The remedial classes specially for weaker, SC/ST and OBC students throughout the semester will increase the transition rate.

(x) The availability of modern Laboratories and well qualified staffs will help in attracting good students in PG and other courses.

(xi) The consultancy and R & D projects from the industries will help in generation of IRG.

(xii) The opportunity to publish research papers in journals.

(xiii) The faculty and staff development for improved competence based on training need analysis will help in providing latest know-how.

(xiv) The upgradation of central and departmental computer centers with campus wide networking will help both the students and faculty.

(xv) Modernization of library and automation will help in maximum utilization of learning resources and access to the online journals.

(xvi) Implementation of academic and non academic reforms.

(xvii) Development of Four Funds for sustainability of the project after the completion.

(xviii) To fill up the vacancies on regular basis and to reduce the vacant positions to 10% or less of the sanctioned posts.

1.2 Detail of SWOT Analysis with Methodology used :

SWOT analysis was carried out with the involvement of various stake holders participation. All the important points related to SWOT were considered. Some of the important parameters taken into consideration for analysis were, teaching learning process, human resources, services, physical Resources, Finance and organization pattern along with its formalization procedures etc. The brain storming sessions in different groups were conducted to discuss the various parameters involving in the analysis of SWOT.

For the purpose of analysis, various comments received during discussions were analyzed and reported. In these various sessions, 72% students, 98% Faculty members and 80% supporting staff of various departments of the Institute participated. The outcome of the discussion during free flow of information is diagnosed and analyzed by "Weisbod's" Model using statistical parameters reported below :

Strength

(a) 53 years old State Government (MP) Grant in Aided premier Institution spreading over 44.6 Acre of Land.

(b) Due to congenial environment and good academic atmosphere the top most students of Madhya Pradesh opt this institute (amongst state level colleges) as their first choice for study.

(c) The various Alumni are at the top most leading positions in various government organizations, PSUs, private sectors and academic institutions of higher learning.

(d) Dynamic Management includes the eminent professionals.

(e) Exercising Academic Autonomy successfully since the year 2002.

(f) By exercising academic autonomy, course curriculums are regularly upgraded/revised, as per global needs.

(g) Having well qualified, experienced and energetic Human Resources.

(h) Having active interaction with the local industries.

(i) Having Entrepreneurship Development Cell.

(j) Having approved Ph.D. Research Centre of the University.

(k) Institute conducts Continuing Education Programme regularly.

(l) Institute conducts Faculty Development Programme regularly.

(m) Having Autonomy to Procure Goods and services.

(n) Having administrative and Managerial Autonomy.

(o) Having well defined vision, Mission and Goal.

(p) Having Effective and dynamic alumni.

(q) Well connected by Road, Rail and Air.

(r) More than 90% of UG & PG courses of Institute were accredited till year 2008.

(s) Having highest placement of students through T&P cell of the Institute in the region.

Weakness

(a) Financial constraints for removal of obsolescence & commencement of new demand based programmes / facilities.
(b) Extra built-up area required for new PG courses/ UG increase in intake.
(c) Lack of new Technical Resources & Learning Materials.
(d) Exposure of recent advances and trends in Engineering & Technology to the faculty and staff.
(e) Library up-gradation & office Automation needed.
(f) Auditorium, more Sport facilities, transportation & more accommodation for students/staff are required.
(g) Required Networking of Campus.
(h) Need of advanced software & hardware.
(i) Lack of modern and up to date research facilities.
(j) More collaborations with industries and institute of higher learning.
(k) More middle level faculty required.
(l) More faculty with Ph.D. degree required.
(m) Student's less exposure to soft skill, personality development programmes.
(n) Lack of modern teaching aids and facilities deprived faculty from learning pedagogy.

Opportunities

(a) To start demand base innovative courses.
(b) To improve the quality of education by adopting modern tools methodologies & learning Materials.
(c) To produce trained man power to face the global challenges.
(d) To develop world class Technical Resource Center.
(e) To strengthen skills of weaker section of society by imparting training for enhancing self employment to the nearby area.
(f) To be a part of global Economy by providing excellent Technical Human Resources.
(g) To establish world class research facility & to get involve in solving existing industrial problems at local/regional/National level.

(h) To participate actively in community development programme for regional upliftment.

(i) Professionally managed and well established 53 years old government aided institution provide good opportunity to attract more qualified and experienced faculties / staff.

(j) The City is well connected by road, rail and air to all parts of the country.

(k) The various research projects by the different funding agencies provides good opportunity for consultancy work.

(l) A large Alumni group, to support the institution.

(m) With good faculty strength, institute can organize National / International level seminars, conferences, workshops and continuous education programmes.

Threats

(a) The lack of exposure to new technology will become a hurdle for imparting high quality education to the students.

(b) Lucrative financial packages as well as facilities / resources provided by the private / foreign competitors will cause migration of good faculty members.

(c) Lagging in fulfill the vision, mission and goal of the Institute.

(d) Unable to face the challenges of fast changing scenario of global environment.

(e) Due to fast changes in government policies (in education sector), new foreign universities, private universities are coming up, which will cause great challenges and competition.

(f) As a grants in aid institution of Government of Madhya Pradesh, with the constraints of limited funds to cope up the changing global scenario.

Strategic Plan for Institutional Development as per SWOT:

The strategy based on SWOT analysis is formulated to strengthen the UG and PG courses of Institute and to improve the employability of students. Following are the basic fundamental strategies options to be adopted for the improvement and making

Institute as a knowledge centre and center of excellence for imparting education and training in the area of Engineering & Technology, so that the human resource generated is effectively useful for the society in general and industries in particular:

S.No.	Strategic Plan	Target Group	Main Challenges
1.	The scholarships / assistance-ship to be provided to the eligible students for enrollment in PG Programmes.	Students	National Level Institutions
2.	The scholarships / assistance-ship to be provided to the eligible students for enrollment in Ph.D. programmes.	Students	Various Universities, NITs and IITs.
3.	Improvement in imparting quality education.	Students	
4.	To sustain high ranking of the institution.	Students	Setting up of the Regional Universities.
5.	Faculty to be promoted for obtaining M. Tech degree.	Faculty	Choice for admission in IITs.
6.	Faculty to be promoted for obtaining Ph.D. degree.	Faculty	Choice for admission in IITs.
7.	Modernisation of existing UG, PG and development of new PG Laboratories.	Students	Financial constraints
8.	Starting of new PG programmes and Ph.D. programmes	Students	
9.	Updation of teaching learning process.	Students	Financial constraints
10.	Increase in Library books and International Journals which will help in providing good knowledge and new know-how to the students and staff.	Students and Staff	Financial constraints
11.	Training of non teaching and technical staff in specialized areas.	Staff	To be motivated for adaptation of new technologies
12.	Training of Faculty members in emerging areas in Industries, International Research Centres and Institute of National repute.	Faculty members	Financial constraint.

13.	Pedagogy training to faculty members inhouse and other national institutions.	Faculty members	
14.	Furnishing and renovation of existing class rooms and to be equipped with modern teaching aids.	Students and staff	To be motivated for the use of new teaching aids
15.	Development of new laboratories and procurement of new equipments to increase the consultancy.	Institute and staff	Other institutions
16.	Development laboratories for new PG and Research programmes.		
17.	Promotion of research and increase in publication / patents	Institute and staff	
18.	Increase the Campus Placement by providing quality education.	Students	
19.	Re-accreditation of various courses.	Institute	New Labs and more qualified staff
20.	To increase transit rate of the students of all category by providing special attention in form of remedial classes so that the transit rate will increased.	Students	
21.	Reduction in vacancy position to 10% or less by recruiting more qualified faculty.	Institute	New upcoming Universities and Colleges
21.	Development of new technologies for weaker section of the community.	Weaker section of the society	Adaptability of new technology
22.	Finishing school concepts in the emerging areas to make the students industry ready.	Students	Financial constraints
23.	Automation and Networking of various departments and hostels.	Institute	Financial constraints
24.	Change in curriculum as per the global needs.	Students	

Linkage of key activities proposed in the IDP with the SWOT Analysis:

S. No.	Activities	Outcome via implementation of IDP	Link to SWOT Analysis
1.	Improvement in teaching, training and learning facilities	Institute will be able to provide exposure among the faculty and students for new technology to impart advanced technical education.	Threat
2.	Providing Teaching and Research Assistantships to increase enrolment in existing and new PG programmes in Engineering disciplines	To produce trained manpower to face the global challenges and to cope up with the shortage of faculty.	Opportunity / Weakness
3.	Enhancement of R&D and institutional consultancy activities	Increase in modern and up to date research activities to produce good consultancy, and generation of IRG.	Weakness
4.	Faculty and Staff development for improved competence based on Training Needs Analysis (TNA)	The faculty and staff will be exposed to World class facilities and will be trained with advanced technology.	Weakness
5.	Enhanced interaction with Industry	This will help to bridge the gap between academia and industry.	Strength
6.	Institutional Management Capacity enhancement	The administration will have more exposure to various aspects of administration by training in various management organization.	Strength
7.	Implementation of Institutional reforms	The CEP will be organized which will help in providing exposure to the various faculties of geographically nearby technical institutions.	Opportunity
8.	Academic support for weak Students	The remedial classes, personality development classes and soft skills will be provided by the experts.	Weakness

9.	Modernization and Strengthening of Libraries	The new books, journals, and e-learning facility will be provided in library	Weakness
10.	In-house Basic Pedagogical Training of faculty from engineering disciplines and supporting departments	The facility of the advanced teaching learning process will help in the pedagogical training.	Weakness

1.3 The Project Objectives and Expected Results:

The project objective and expected results due to the implementation of IDP are as under:

S. No.	Objectives	Expected results
1.	Modernisation of facilities in the existing UG, PG labs, Workshops, Computer Centre and other facilities to strengthen existing UG and PG courses.	The updated Labs will help in imparting good quality education which will result in the enhancement of the knowledge of the students. This will result in more campus placements.
2.	To create support facilities for new PG courses.	It will help in overcoming of acute shortage of qualified faculty in the technical institutes.
3.	To create support facilities for new research labs to carry out Ph.D. programmes.	This will help in overcoming of acute shortage of Ph.D. qualified faculty.
4.	Enhancement in Campus wide networking of academic, administrative and hostel buildings.	The campus networking will help in providing knowledge sharing and resource utilization. The online courses will be available on the net, which can be accessed by the students any time.
5.	Increase in the modernization and strengthening of Libraries.	The latest books with new editions will be introduced and online journals will be available, which will help in the research work and providing quality education.

6.	Advanced pedagogical training of faculty in engineering and supporting departments.	The trained faculty will help in providing good teaching with new teaching methodology.
7.	Training of senior non teaching and administrative staff.	The training will help in effective utilization of the staff with the use of modern technology.
8.	Curriculum reforms in the form of restructuring or revision.	The institute is having autonomy. The academic council every year restructure and revise the syllabus as per global needs.
9.	Conduction of continuing education programme.	The nearby geographical area to this institute is having about 40 engineering colleges. The CEP organized will help in imparting latest know-how to these teachers and IRG can also be generated.
10.	Organisation of training programmes, workshops, seminars and conferences.	This will provide a common platform to the different researchers, faculty members and other staff to share their views with respect to latest technologies.
11.	To increase the campus placement.	With the increase in the transit rate and an impartment of new technologies, specialized trainings will help the students to get good campus placements with higher salary packages.
12.	To support academic weak students of SC/ST/ and OBC category by various means	The bridge courses, the remedial classes, expert lectures in soft skill development will help the students to make them industry ready.
13.	To develop linkage with other education institutes, industries and other user agencies through multiplicity of programme including consultancy.	This will help in generation of IRG by the consultancy provided by the institute. This will also help in enhancement of Industry Institute interaction. The outcome can be in the form of research publications and patenting of research products.
14.	Interaction with industries in the area of new technology, consultancy and innovative product development.	To provide consultancy to solve the industrial problems of geographically nearby industries.

15.	To generate facilities and support for R & D activities in the frontier areas on national basis so that technology gap with respect to the advanced countries is eventually bridged.	Promotion of research activities by means of Ph.D.s, other research projects from various bodies.
16.	Dissemination of information in the areas of expertise developed to other organizations.	Support to other institution and consultancy.
17.	To promote informatics at district, state and national level by collecting regional data & information.	Use of informatics in all the domains.
18.	Support to the local community for improvement of its living quality.	Contribution of the small technological developments for increase in the standard of living quality.
19.	Contribution in improved rural development.	Contribution in the improvement of conditions by technological development in rural areas.

1.4 Action plan for:

A. Improving employability of graduates:

Activity	**Activity Detail**
A.1	The knowledge of the students will be enhanced by providing the exposure to the recent trends and advancements in technology. This will help in increasing more chance of employability with better salary packages.
A.2	The students will be trained on new software platforms and they will be provided an opportunity to obtain the certifications at very discounted examination fees.
A.3	They will be given exposure of various languages like English, French, German and other international languages for enhancing employability at national and international level.
A.4	The finishing school concept will be implemented which will provide the exposure to soft skills, spoken English and another aspects of personality development.
A.5	The value education course will be implemented in the course curriculum which will help in over all development of the students.
A.6	The tailor made programmes for specific industries will be incorporated after the interaction with potential employer.

A.7	The establishment of learning and teaching support network (LTSN) will help in enhancing student employability.
A.8	The classes for bridge over programme for weaker students will be conducted.
A.9	Emphasis on personal development planning which include academic & work related learning, time management, team work, project management, presentation skill, discipline based support.
A.10	More emphasis on practical training and practical work experiences to the students.
A.11	The project work for UG and PG programmes should solve some industry related problems so that students can understand the requirement of industries.

S.No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1.	A.1																
2.	A.2																
3.	A.3																
4.	A.4																
5.	A.5																
6.	A.6																
7.	A.7																
8.	A.8																
9.	A.9																
10.	A.10																
11.	A.11																

B. Increased learning outcome of the students:

Activity	Activity Detail
B.1	The modernization of the existing and development of the new labs will help in providing the students better quality education which exposure to recent trends and developments.
B.2	The online availability of the courses 24 hours on the internet server will provide the opportunity to the students to cope up the subject in more effective way. The use of the software like MOODLE in teaching learning process has provided high impact in quality education.
B.3	The remedial classes for the weaker students and the students admitted with Regional language background have shown a radical change in the results of these students.

B.4	The revision in the course curriculum and flexibility of choosing the electives helps the students to train themselves in the area of their interests.
B.5	The formative and summative evaluations is conducted periodically so that the students can be evaluated well in time.
B.6	Incorporating problem based learning.
B.7	By encouraging teachers to assume multiple roles, such as mentor, coach, facilitator, evaluator which includes demonstrating/modeling the generic skill to learners.
B.8	BY promoting graduate attribute support in both the planning curriculum (the goal, learning outcomes, assessment programme and learning activities planned by students) and enacted curriculum (the process & control of learning experienced by students).
B.9	By adopting innovative teaching strategy which includes team or group projects development of learning sets, group discussion and seminar etc.
B.10	Incorporating problem solving session in the academic curriculum which includes case study, simulation investing projects, decision making activities, development designing models.
B.11	Planning and organizing skills like development management skill, time management activities, goal setting activities will be included in teaching strategy.
B.12	Learning will be improved by use of reflective journals and books, mentoring and Expert lectures etc.

S.No.	Acvivity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1.	B.1																
2.	B.2																
3.	B.3																
4.	B.4																
5.	B.5																
6.	B.6																
7.	B.7																
8.	B.8																
9.	B.9																
10.	B.10																
11.	B.11																
12.	B.12																

C. Obtaining autonomous institution status within 2 years

The institute has been declared autonomous institution by Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, MP. from September 2002.

S.No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1.	Autonomy	The institute has been declared autonomous institution by Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal, MP. from September 2002. Institute has also applied for UGC autonomy, the visit of UGC experts is awaited															

D. Achieving the targets of 60% of the eligible UG and PG Programmes accredited within Two Years of joining the project and 100% accreditation obtained and applied for by the end of the project of the eligible UG and PG Programmes

Activity	Activity Detail
D.1	The institute was the first institution to attain accreditation of various courses UG & PG courses from NBA till year 2008 in Madhya Pradesh, which shows that the institute has all necessary infrastructure, resources etc. for accreditation. Presently five UG courses are NBA accredited and for three UG & two PG programmes, NBA team visit is scheduled in the month of July 2015.

S.No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1.	Accreditation of all courses																

E. Implementation of academic and non academic reforms:

Activity	Activity Detail
E.1	**ACADEMIC REFORMS**
E.1.1	**Curriculum reforms:** Curricula is the back bone of learning process, and for the smooth functioning we required to reduce the gap between the knowledge and information transfer. Due to the new technological life span and knowledge explosion in the recent years the gap between knowledge and its transfer is increasing day by day. These changes necessitate rapid and dynamic changes in technical curriculum, since the institute has autonomous stature therefore it is easy to implement the dynamic changes. The curricula reforms will be performed as: • Using recent techniques in teaching and student evaluation methodology. • Inclusion of communication skills, entrepreneurial skills, information processing, creative and innovative thinking etc. in the curricula. • Inclusion of more elective courses. • Interaction with the industry and their projects. • E-source materials like internet, e-journals etc. • Inviting expert lectures from renowned faculties, industry and field. • Visit and training in industry.
E.1.2	**Improved students performance evaluation:** The institute has offered student performance evaluation program on a continuous basis in order to provide opportunities for improvement. The focused approach is as: • Formative evaluation: Organizing quizzes, class room seminars, group discussion and group assignments in each semester of UG & PG courses. • Organizing regular workshops for the faculty to improve their quality and to impart to the students. • The evaluation process will be consistent transparent and accountable. • Evaluation of students performance will be disclosed to the students. • The evaluated performance of the students will be improved if desired. • In case of weak students, their performance improvement will be closely monitored by the faculty and counseling sessions will be also performed.
E.1.3	**Performance appraisal of faculty by students:** The institute always conduct performance appraisal of faculty by students. The Performa of appraisal contains teaching ability, teacher's voice, hand writing on board, ability to answer question, ability to control class, practical knowledge and punctuality & regularity etc. The following steps will be incorporated for further strengthening of Performance appraisal of faculty:

	• A comprehensive students feed-back for faculty evaluation will be adopted which contents macro - level feed-back on the basis of knowledge, skills and attitude. • Detailed feed-back will be prepared. • The students feed-back and self assessment will be shared by HOD only. • As per the recommendations a counselor if needed will be appointed to help the faculty. • Improvements in teaching will monitored.
E.1.4	**Faculty incentives for continuing education:** The institute encouraged the faculty for continuing education, consultancy and R&D through proper incentive. The following steps will be taken: • A faculty engagement chart will be prepared. • Identification of academic and career progression of the faculty. • Motivation to faculty for attending conferences, workshops, seminars, etc. outside India. • Motivation to faculty for R&D by providing books and journal allowance. • Encouragement and support to faculty for obtaining higher qualifications such as PhD, publishing quality papers in journals of high repute. • Systematic assessment of faculty including involvement in administration also. • Faculty will be asked to submit a self assessment chart in every semester. A plan for various activities, goals, objectives during each year may also be encouraged.
E.1.5	**Accreditation of UG & PG programmes:** Various UG & PG courses were accredited by NBA till year 2008, which shows that the institute has all necessary infrastructure, resources etc. for accreditation. No specific preparation is required for further getting accredited for which the submission of application for accreditation to National Board of Accreditation is under progress.
E.2	**NON ACADEMIC REFORMS**
E.2.1	**Exercise of autonomy:** The institute is autonomous institute under RGPV, Bhopal. It has facility to exercise full academic autonomy. The institute has Board of Governors, the BOG will exercise powers as per the MoA/Government Orders/Government Regulations. The BOG suitably delegates functional powers to various institutional functionaries and committees. The details of four types of autonomies: **Managerial Autonomy:** To have the better output of Managerial Autonomy, the existing system is decentralized as per the sections and departments for the

	purpose of day to day functioning and for decision making. The objectives are: • Better governance of the institute. • Improved efficiency. • Institutional responsiveness towards students. • Institutional responsiveness towards community. • Forward planning. • Enhanced utilization of resources. • Approach towards achieving excellence. **Administrative Autonomy:** Delegation of power will be passed on to various sectional & departmental heads for immediate decisions and efficient actions. The facility of communication towards faculties is planned through telephone and well connected network of computers. **Financial Autonomy:** The TEQIP programme finances will be maintained separately and for this purpose an Institutional cell will be formed. To start with experienced personnel will be there to monitor the successful implementation of the project. This cell will maintain all accounts books as par the requirements and will be made available for inspection and audit to any authorized agency by Director/ Government. **Academic Autonomy:** Academic functions will be carried out as an Autonomous Institution. The following steps will be considered: • Admission of students based on merit as per State/GOI Admission Policy (As applicable) on common entrance examination, counseling , and reservation • Implement own curricula, course content, curricula implementation and methods of training. • Introduction of flexibility in the curriculum with choice of electives. • Develop new methods of formative an internal evaluation as per advice from Experts. • Add value addition courses as per market demand. • Development of an effective system for faculty evaluation by students. • Start new courses, new programmes and re-orient and restructure the existing programmes. • Introduction of innovations in teaching/learning processes through controlled experimentation. • Conduct Continuing Education, Distance Learning and e-learning and skill enhancement programmes as per market needs. • Collaborative arrangement with outside bodies/experts for curricula development, employment oriented value addition to courses, new teaching learning methodologies and innovations. • Deputation of faculty for academic advancement.

	• Development of faculty training needs assessment scheme in line with academic requirements and institutional objectives. • Inviting experts including Industry experts for special lectures.
E.2.2	**Establishment of Four Funds:** With the consent of the BOG of the Institution, separate bank account will be opened for four funds namely: • Corpus fund • Faculty development fund • Equipment replacement fund • Maintenance fund These funds will have contribution of at least of 0.5% of annual total recurring expenditure of the Institution.
E.2.3	**Generation, retention and utilization of revenue generated through a variety of activities:** The following methods will be adopted for generating revenue and its utilization. • Incentives will be proposed to faculty involved in revenue raising activities over and above their routine academic duties. • Recognizing performance of faculty and staff through awards, rewards or promotions. • Developing office and lab facilities. • Improving facilities for academic research. • Supporting travel for attending conferences • Revenue generation activities would, among others, include: 100% of tuition fee and charges from students. • Consultancy projects sponsored by private or public sector • Sponsored research projects. • Industry–Institute interactive programmes ensuring mutual benefits including revenue generation for the institution. • Use of facilities, earning from Incubation Centers and Scientific and Technology Entrepreneurship development Programmes (STEP) • Testing and Certification. • Self financing, training and teaching programmes.
E.2.4	**Filling up all teaching and staff vacancies:** The Institute followed the norms of AICTE for UG and PG courses in appointment of faculty and staff. The qualified and experienced faculty will be appointed on contract basis till regular appointments are made if required.
E.2.5	**Delegation of decision making powers to all senior institutional functionaries with accountability:** The senior functionaries like Deans and HODs will be delegated with adequate powers to help better implementation of project. The decentralized administrative environment will be adopted, where all functionaries inclusive of

	junior faculty and staff will be the participant.
E.2.6	**Academic support for weak students:** Under this reform, the academically weak performance of students will be improved through innovative methods such as remedial teaching in professional subjects and soft skills development for increasing transition rate, pass rate and employability. The following activities will be performed for the improvement of weak students: • The bridge courses / remedial teaching will be organized to bring all students to the required level of proficiency to cope with main subjects. • Inclusion of communication and presentation skills in their curricula. Conducting specialized soft skills and professional skills development training during semester break and vacation.

S.No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1.	E.1																
2.	E.1.1																
3.	E.1.2																
4.	E.1.3																
5.	E.1.4																
6.	E.1.5																
7.	E.2																
8.	E.2.1																
9.	E.2.2																
10.	E.2.3																
11.	E.2.4																
12.	E.2.5																
13.	E.2.6																

F. Improving Interaction with Industry:

Activity	Activity Detail
F.1	It is proposed that an Industry Institute interaction cell. The Cell will have members from Industries and senior faculty of the Institute.

F.2	For the benefits of the students and curriculum designing, senior technocrats from Industries will be invited to be part of the Academic bodies of the Institute.
F.3	Regular Workshops will be conducted for the evaluation of the project and for feedback of Education quality imparted by the Institute.
F.4	Special programmes for the continuing education on the need basis of the Industries will be designed and arranged.

S.No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1.	F.1																
2.	F.2																
3.	F.3																
4.	F.4																

G. Enhancement of Research and Consultancy Activities:

Activity	Activity Detail
G.1	Modern laboratories will be established.
G.2	New PG courses will be introduced.
G.3	The focus on R&D will be on improving present technologies, developing indigenous equipments for enhancing production and productivity.
G.4	Encouragement to the patent oriented works and PhD works.
G.5	Provision of incentives to faculties and students

S.No.	Activity	Project Months															
		1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
1.	G.1																
2.	G.2																
3.	G.3																
4.	G.4																
5.	G.5																

1.5 An Action Plan for organizing a finishing School and for improving the academic. Performance of SC/ST/OBC / academically weak students:

S. No	Activities	Project Life Allocation	Financial Year				
			2011 - 12	2012 – 13	2013 – 14	2014 – 15	2015 - 16
1.	Conducting remedial classes throughout academic sessions	18 to 60 Months	-	02	02	02	04
2.	Providing specialized soft skills and professional skills development training by the experts in these fields.	18 to 60 Months	-	02	02	02	04
3.	Conduction of specialized training to the graduates in specific fields as per the requirement of the industry to increase employability.	18 to 60 Months	-	01	02	02	04
4.	Conduction of Mock campus and group discussions to provide better chance for placement through campus.	18 to 60 Months	-	01	01	01	02
5.	For the weaker sections, the students will be called for counseling and special coaching classes for SC/ST and OBC students will be conducted. This will enhance the transition rate and pass rate of these students.	18 to 60 Months	-	01	01	01	02
6.	Special communication skill and vocational English speaking classes for the regional language speaking students.	18 to 60 Months	-	01	02	02	04

1.6 Action plan for strengthening of PG programmes and starting of new PG programmes.

The various PG programmes run by the institution were sanctioned by AICTE. With the changing phase of globalization there is lot of obsolescence in the labs and course curriculum. Hence, there is urgent need for the modernization and strengthening of the existing facilities to cope up the phase of globalization.

Some of the areas of engineering in which we are having highly qualified faculties and staff, there is urgent need to open to start new PG programme. The supporting staff will be provided training to have the exposure on new technology.

The existing PG courses are :

S. No.	Department	PG Course	Modernization of existing Laboratory	Required Software	Duration
1	Civil Engineering	Construction Technology and Management Structural Engineering Public Health Engineering	Geo Technical Lab Material Lab Environmental Lab Structural & Construction Lab	Prima Viera Water and Sewer Network Highway & Survey	1.5 Years
2	Mechanical Engineering	Production Engineering Material Handling	CAD/CAM Lab. Advanced Production Technology Lab	CAD/CAM Software, CNC Machine	1.5 Years
3	Electrical Engineering	Industrial Systems and Drives Measurement and Control	Power Electronics and Drives Lab Measurement & Instrumentation Lab. Micro Processor Lab. Control System Lab.	MAT LAB	1.5 Years
4	Electronics Engineering	Communication Control and Networking Microwave Engineering	Analog Electronics Devices Lab Communication Lab. Microwave, Antenna & Wave Propagation Lab. Departmental Computing Facility	Net Link	1.5 Years
5	Biotechnology	Biotechnology	Proteomics & Genomic Lab. Biotransformation & Biocatalyst Lab Immunotechnology Lab	Blast Fasta	1.5 Years

Proposed PG courses:

S.No.	Department	PG Course
1	Civil Engineering	1. Environment Engineering 2. Geo Informatics
2	Computer Science & Engineering	1. Computer Science & Engineering 2. Cyber Technology
3	Information Technology	Information Technology
4	Chemical Engineering	Chemical Engineering

1.7 Summary of Training Needs Analysis carried out for Faculty Development Plan for the first 18 months for improving their teaching, subject area and research competence based on training needs Analysis (TNA)

AS per TNA of Institute faculty members are regularly attending various faculty development programmes

1.8 Action plan for training technical and other staff in functional areas:

AS per TNA of Institute staff members are attending various faculty development programmes

1.9 Relevance and coherence of Institutional Development proposal with state's / National (in case of CFIs) Industrial/ Economic Development plan.

Technical Education Improvement Program being a life time opportunity for the Institutes to improve the standard of education and be part of the overall education improvement scheme of the nation. The Network Institute Programme Management Unit of M.I.T.S., Gwalior has already been established and requires to be improved upon, for which proposal is being made. The proposal from all the departments has relevance and coherence with the state/national industrial/economic development plan. For improving quality among students, faculty and staff and increasing employability of the students, all the proposals have its own relevance. Courses wise relevance and coherence sited below:

Civil Engineering:	The Civil Engineering plays an important roll for new constructed India. The requirement of well trained engineers with specializations is urgently required. To implement river basin connection for water, more specialized engineers in this field is required. Introduction of water resource management will increase employability of students.
Mechanical Engineering:	For increasing infrastructure development and industrial development specialized

	engineers are pre requisite. With the proposed modernization and development the following achievements will be obtained i.e. removal of obsceneness of existing lab, narrowing the gap of recent technological development, enhancing the scale of students, jod opportunity, testing and consultancy.
Electrical Engineering:	Energy entrapment, now a day is utmost important for human being. Strengthening and more emphasizement in the field of electrical engineering with specialization in measurement and instrumentation are required which will increase the employability of the students.
Electronics Engineering:	To meet the requirement of the students and society, the use of electronics devices and its knowledge is urgently needed. To strengthen the existing PG program and new PG program is also unavoidable. With this background and non availability of sufficient funds in adequate quantum from any of the Government agencies, it is imperative to consider this proposal for the benefit of the students community for knowledge dissemination and the Institute itself. The proposal for PG program in VLSI is very relevant in our state.
Computer Science & Engineering:	There are very few Institutions in the state offering the PG program in the area of Computer Science & Engineering and Information Technology. There is continuous pressure from the society as well as passing out graduates and serving technocrats to start a PG program. Therefore it is proposed

to start the M.tech. in Computer Science & Technology. Also computer programming is made compulsory for all the students of engineering in the new scheme of curriculum in B.E.

Chemical Engineering: The research in the field of chemical and beverage is necessary in Madhya Pradesh. Industrialization in chemical engineering required more knowledge among the students.

Bio Technology: The programme aims to produce graduates who have breadth of knowledge in Bio-informatics, an interface of informatics, genomics and mathematics. This is the fastest developing science today with immense potential of application in solving various problems in the areas of human health, environment, agriculture and so on.

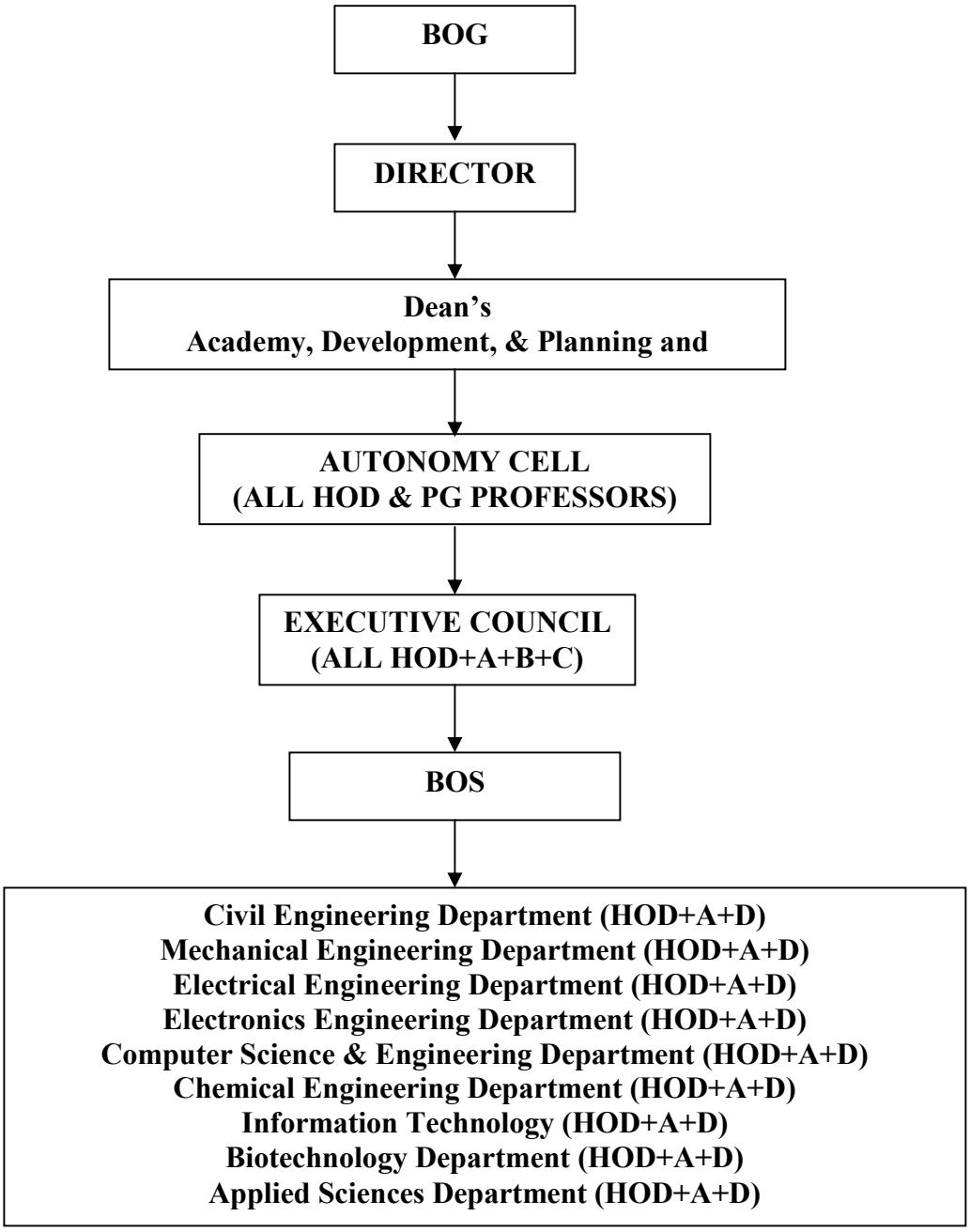
1.10 Describe briefly the participation of department /faculty in the IDP preparation.

The project at the Institutional level will be managed by two bodies.

(1) Board of Governors (BOG)

(2) An Institutional TEQIP unit:

The governing flow chart of Institution



A = 1 Reader/Associate Professor + 1 Lecturer of concerned department.
B = 2 External members from other educational institutes.
C = Educationalist of repute from public.
D = Two members from industry.

The Institutional TEQIP unit will operate through following committee:

(i) Procurement of goods work and services

(ii) Financial Management

(iii) Implementation of faculty and staff development activities and programmes.

(iv) Monitoring project implementation.

(i) Procurement of goods work and services:

Procurement arrangements:

(a) Procurement of Civil Works
Rate Contract
(b) Procurement of Equipment
International Shopping, National shopping
(c) Procurement of Furniture
National Contracting
(d) Books and Learning Resources
Direct Contracting
(e) Consultancy Services

National advertising/ bidding Preparedness:

S.No.	Description of activity	Brief description of preparations made for implementation.
1.	Civil Works	The Institute has well established repair & maintenance section along with construction wing headed by Asst. Engineer, Civil works.
2.	Procurement of equipment	The basic data, specification & manufacturers/suppliers for various items to be procured are available with Institute.
3.	Procurement of furniture	The list of furniture supplier is approved with the Institute.

4.	Books & learning resources	Library has list of suppliers for books & other learning materials at National & International level.
5.	Consultancy	The consultancy will be met by Institutional experts & faculty, who will be deputed for the specified jobs.

(ii) Financial Management:

- Overall financial requirement of the project by category
- Overall financial requirement of the project by Component
- System of fund flow
- Staffing
- Accounting policies and procedures
- Audit and monitoring

(iii) Implementation of faculty and staff development activities and programmes:

- Pedagogical training of faculty from engineering discipline and supporting departments
- Faculty qualification upgradation as planned through TNA
- In-house Basic pedagogical training of faculty from engineering discipline and supporting departments
- Training of senior non-teaching staff, administrative and finance officers, etc.
- Training of technical support staff
- Training of administrative and general support staff in functional areas

(iv) Monitoring project implementation:

The monitoring of the implementation of reform will be done by Institute NIPMU Cell through its various Expert committees having members within and outside Institute.

1.11 Describe the Institutional project implementation arrangements with participation of faculty and staff.

S. No.	Parameters / Functions	Implementation Committee
1.	Admission of students based on merit as per State/GoI Admission Policy (as applicable) on common entrance examination, counseling, and reservation	Academic Committee
2.	Determine own curricula, course content, curricula implementation and methods of training	Academic Committee
3.	Develop credit based curriculum	Academic Committee
4.	Permit credit exemption for previous attainments	Academic Committee
5.	Introduce flexibility in the curriculum with choice of electives	Academic Committee
6.	Evolve new methods of summative evaluation and their frequency, conducting examinations and declaring results	Academic Committee
7.	Develop new methods of formative and internal evaluation as per advice from Experts	Academic Committee
8.	Add value addition courses as per market demand	Academic Committee
9.	Develop an effective system for faculty evaluation by students.	Academic Committee
10.	Start new courses, new programmes and re-orient and restructure or delete existing programmes (these actions, if undertaken under the Project, will need to observe project directives as given in the main text of PIP)	Academic Committee
11.	Introduce innovations in teaching/learning processes through controlled experimentation	Academic Committee
12.	Conduct Continuing Education, Distance Learning and e-Learning and skill enhancement programmes as per market needs Enter into collaborative arrangements with outside bodies /experts for curricula development, employment oriented value addition to courses, new teaching learning methodologies and innovations	Academic Committee
13.	Depute faculty for academic advancement	Academic Committee
14.	Develop faculty training needs assessment scheme in line with academic requirements and institutional objectives	Academic Committee
15.	Inviting experts including Industry experts for special lectures	Academic Committee

1.12 Institutional project Budget for Sub – Component 1.1

Table – 29
Institutional project Budget for Sub – Component 1.1

S. No	Activities	Project Life Allocation	Financial Year				
			2011 - 12	2012 – 13	2013 – 14	2014 – 15	2015 – 16
1.	Infrastructure improvements for teaching training and learning through:						
	(i) Modernization and strengthening of laboratories	24 Months	--	70	53	50	--
	(ii) Establishment of new laboratories for existing UG and PG programmes and for new PG programmes	24 Months	--	60	68	50	--
	(iii)) Modernization of classrooms	18 Months	35	25	--	--	--
	(iv) Up-dation of Learning Resources	36 Months	10	05	--	--	--
	(v) procurement of furniture	24 Months	10	14	--	--	--
	(vi) Establishment / Up-gradation of Central and Department Computer Centers*	18 Months	10	05	--	--	--
	(vii) Modernization /improvements of supporting departments*	6 to36 Months	10	15	--	--	--
	(viii)) Modernization and strengthening of libraries and increasing access to knowledge resources	6 to 30 Months	15	15	--	--	--
	(ix) Refurbishment (Minor Civil Works)*	18 Months	15	15	--	--	--
2.	Providing Teaching and Research Assistantships to increase enrolment in existing and new PG Programmes in Engineering disciplines	24 to60 Months	--	18	24	24	24
3.	Enhancement of R&D and institutional consultancy activities *	18 to60 Months	--	06	06	06	06

4.	Faculty and staff Development (including faculty qualification up-gradation, pedagogical training , and organizing /participation of faculty in workshop , seminars and conferences) for improved competence based on TNA	6 to 42 Months	30	35	20	20	15
5.	Enhanced Interaction with Industry	0 to48 Months	10	07	05	06	--
6.	Institutional management capacity enhancement	6 to48 Months	06	08	06	06	--
7.	Implementation of institutional reforms	12 to48 Months	--	10	10	04	--
8.	Academic support for weak students under the aegis of Finishing School	18 to60 Months	--	08	10	10	10
9.	Incremental Operating cost	0 to 54 Months	15	10	10	35	30
	TOTAL		**176**	**316**	**212**	**211**	**85**
	GRAND TOTAL	**10.00 Crores**					

* Not applicable for private unaided institutions.

1.13 Provide the targets against the deliverables listed in Table – 30

Table – 30
Project Targets for institutions under Sub – Component 1.1

S. No.	Deliverables	Baseline	Targets to be achieved	
			At the end of 2 years of Joining the project	By project closing
1.	Number of students registered for (a) Masters in Engineering programme (for 2 Years) (b) Doctoral programme in Engineering	 239 15	 383 25	 527 40
2.	Revenue from externally funded R&D project and consultancies in total revenues (Rs. In lakh)	61.35	80.00	100
2	Numbers of publications in refereed journals (a) National (b) International	(Yr.2009-2010) 12 25	 40 75	 180 440
3	IRG as % of total annual recurring expenditure	7.5%	10%	12.5%
4	Number of co- authored publications in	(Yr.2009-2010)		

	refereed journals (a) National (b) International	 8 34	 50 75	 80 100
5	Student credentials (a) campus placement rate of ○ UG students ○ PG students (b) Average salary of placement package for (Rs. In lakh) ○ UG students ○ PG students	 66.26 21.73 3.10 3.26	 85% 50% 4.00 4.50	 95% to 100% 80% to 90% 5.00 5.50
6	Number of collaborative programmes with Industry	1	3	6
7	Accreditation status (obtained and applied for)	Nil	All eligible PG & UG courses will be accredited or applied for	All eligible PG & UG courses will be accredited
8	Vacancy position for faculty and staff	45% Shortage of Regular Faculty	Vacancy reduced to 20% or less	Zero
9	Percentage of regular faculty having a Masters Degree or a Doctorate Degree in Engineering disciplines	100%	N/A Under Process	Increase in Doctorate Degree in Engineering by 20%
10	Transit rate from 1st to 2nd year for the following ○ All Students ○ SC and ST students ○ OBC Students ○ Women Students	 88.9% 69.6% 85.48% 89.08%	 92% 75% 90% 95%	 98 to 100% 85 to 90% 95 to 98% 98 to 100%
11	Autonomy status	Already Attained	N/A	N/A
12	Enrolments of faculty with only Bachelor Degree for qualification upgradation		At least 50% at the parent institution or 25% at other institution	
13	Any other academic deliverables (maximum 3)			
(i)	Finishing School	Exist	N.A.	

(ii)	Institute R & D Cell	Exist	N.A.
(iii)	Institute Industry Interaction Cell	Exist	N.A.

Note: the accreditation targets for Undergraduate and postgraduate programme are for **NBA Accreditation of programmes.**

1.14 Give an action plan for ensuring that the project activities would be sustained after the end of the Project

The institution will establish four distinct funds named as Corpus Funds, Faculty Development Funds, Equipment Replacement Fund and Maintenance Fund. These funds will be used to ensure sustainability of reform process beyond the project period. Separate bank accounts will be maintained for these funds. These funds will not be utilized during the project period for various activities. These funds will be opened with the permission of BOG. The contribution to these funds will be total at least 2% of total recurring expenditure of the institute.

S. No.	Name of the Fund	Minimum Contribution (Annually)
1.	Corpus Fund	4.00 Lakhs
2.	Faculty Development Fund	4.00 Lakhs
3.	Equipment Replacement Fund	4.00 Lakhs
4.	Maintenance Fund	4.00 Lakhs

The revenue will also be generated by consultancy sponsored projects by public sector industries, sponsored research projects, by offering specialized tailor continuing programme.

Offering specially designed Degree programmes for candidates from public sector undertakings, Industry-Institute interactive programmes ensuring mutual benefits including revenue generation for the institution, and Commercial activities

[commercial use of facilities, earning from Incubation Centres and Scientific and Technology Entrepreneurship Programme (STEP)].

1.15 provide a procurement plan for the first 18 months for Goods and civil works in Table – 31 and Consultant Services in Table – 32 with budget and timeframe.

Please refer action plan till Dec. 2016 and plan submitted on PMSS.

1.16 Provide any other information related to special academic achievements as given in Eligibility proposal of the Institution.

- Institution is an Autonomous Institute under RGPV, Bhopal and has facility for the transaction of syllabus and innovation of new courses within the ordinance of University and also conduction of Examination and other academic related activities.
- Due to priority institute of state, academically inclined students are available.
- The institute has complete 52 years of excellence in technical education and a commemorative stamp was released by Indian Post & telegraph Department on the occasion of its Golden Jubilee.
- Experienced and qualified Faculty (more than 50% at reader and higher level with PG and Higher qualification.
- Research environment (more than 20 Ph.D. are under progress).
- A highest Placement record of students in the state.
- Good number of sponsored industrial projects.
- well established working laboratories,
- Good academic discipline, more than 90% targets of academic calendar is achieved.
- Qualified technical staff.
- Well functioning computational facility and a well placement record.
- Projects (MODROB, RPS, FIST etc.) funded by various Govt. agencies like DST, AICTE, UGC worth Rs. 1.5 Cr. Are in Progress.