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**Pandit Deendayal Petroleum University**  
Raisan, Gandhinagar

Date: 14/7/2017

Minutes of the Meeting of PDPU Advisory Committee held on 11 July 2017 at PDPU campus. The following were present:

1. Shri D. Rajagopalan – IAS (Retd.)
2. Shri Nitin Shukla
3. Shri S.B. Dangayach, M.D. – Sintex Industries Ltd.
4. Dr. T. Kishen Kumar Reddy
5. Prof. N.R. Dave
6. Shri V.C. Shah
7. Prof. Tarun Shah
8. Shri Palak Sheth
9. Shri Abhinav Kapadia
10. Shri Ankur Pandya

The purpose of the meeting was to discuss as to how excellence can be achieved in academics and research. The meeting was chaired by the Chairman – Standing Committee, Shri D. Rajagopalan. He welcomed the members and after briefing the objectives of the meeting he invited the members to present their views which are captured here:

**Chairman – SC**

- i. Paradigm shift is necessary to attain excellence in research and academics, by igniting minds of the students; we need to take a quantum jump to survive and stay ahead in the race of self-financed institutions.
- ii. We need to prepare our students as per requirements of Industry.
- iii. Faculty have to come out of their comfort zones and develop innovative teaching techniques to impart the subject knowledge.
- iv. Academic rigor and enhancement should be pursued through principles of *Management by Objectives*. Proper mapping of objectives should be done to realize academic excellence. While teaching the students, learning on the side by Teacher also should happen to improve their own competencies. For that, the student involvement in teaching-learning process has to increase.
- v. Academic processes should be steered towards industry requirements.
- vi. Need to identify discipline wise mentors and also identify industry experts to teach at least 10% of each course.
- vii. The Hon'ble CM may be invited to a workshop/open house session dedicated to improving industry-institute interaction.
- viii. In the first year of study itself, the students should be exposed to the broad career options in the streams of: (a) Research, (b) Entrepreneurship, (c) Further Study, and (d) Industry Employment. Accordingly, the students should be offered curricula from second/third year onwards.





- ix. Courses on Financial Management, Entrepreneurship & Language Proficiency should be offered to improve the exposure to Liberal Arts and enhance soft skills.
- x. Innovative practices in teaching should be infused in engineering programs; for this, lessons may be learnt from SLS.
- xi. We should review our Vision and Mission statements to make them more concise.

**Shri S. B. Dangayach**

- i. The students should be encouraged to put forth disruptive and innovative ideas.
- ii. Open course learning should also be put into practice.
- iii. Ways should be found out to adjust/find solutions to circumvent constraints posed by the UGC/AICTE and other such regulatory agencies.
- iv. Features of our vision and mission documents should be leveraged in meeting the concerns of society at large may be in terms of government policies on science and technology fronts. As PDPU's focus is on Energy Security, the clarion call given by our Prime Minister on Energy and Water security can serve as an actionable area.
- v. The concepts of i-Create should be imbibed at our end.
- vi. Faculty should develop solution oriented approach with reference to industry requirements.
- vii. Closed partnership between institution and industry should be developed and pursued.
- viii. Learning through other informal ways like Open Courses prepared and delivered by quality conscious agencies like Prabha Channel should be practiced.
- ix. Newer ways of knowledge and its delivery should be found out, while keeping in mind its economic viability.
- x. Best practices of foreign institutions should be blended with Indian knowledge base.
- xi. We should coordinate with institutions in our neighborhood/vicinity and leverage our mutual strengths for our institutional interests, e.g. ATIRA, EDI, CIPET etc. and thereby co-create/broaden knowledge base. Mr. Palak Sheth was directed to prepare a survey report in this regard.
- xii. Study IIT-Gandhinagar's model of Industry Institute partnership for customization and emulation at our end.
- xiii. Create an environment/ awareness regarding entrepreneurship/business plan among students when they enter in second year. The second year students should also be made aware about career avenues along with scope and limitations of every option; broadly in terms of Research, Entrepreneurship, Further Study, and Industry Employment; so that they may become conscious and particular in their career endeavors in single direction right from second year. And accordingly we should nurture their preference, may be through offering respective curricula matching to their chosen career path at least from the third year onwards.



- xiv. Open house session should be organized for industry institute interaction, wherein the head/leading office bearers of industry associations like GCCI should be invited; their help in getting involved with industry participation can also be explored. Such interactive programme can definitely help in more industry inputs and involvement in augmenting academic standards, laboratories, competencies of faculty and students through taking up and realizing industry projects, and proper industry training and placements for students.
- xv. To appoint well-experienced industry professionals as adjunct faculty on full time basis in respective School/departments.

**Shri Nitin Shukla**

- i. A process itself is important with reference to its objective/direction to desired outcomes.
- ii. In view of this, a collaborative arrangement between Nirma Uni. and M/s Shell company was cited as a success story for its Post Diploma one year programme in Foundry Engineering which resulted in a very successful program in terms of Placements. Likewise PDPU should start 4+ (+ 1 or 1.5 years) years UG programme for preparing its students to be industry ready; for this tie ups with some specific industries can also be worked out.
- iii. Faculty members should come up in developing industry-required attributes in their teaching delivery processes for which faculty development plan should be evolved, as a part of which industry involvement of faculty during summer vacation can be worked out.
- iv. If students are lagging behind in performance and /or not getting adequate placement, it should become a concern for faculty in order to improve the situation.
- v. Individual performance parameters i.e. Tasks and Targets for faculty members should be prepared and announced to faculty.
- vi. Nature of Performance Appraisal should lead to better employability of incumbent faculty, like wise faculty should be intimated about the scope of our appraisal system.
- vii. Faculty should develop their knowledge competency and attributes out of industry projects, consultancy, so as to generate revenue, for this we should also provide proper eco system in terms of allied technical/ laboratory facilities and incentives.
- viii. Faculty should be given enough flexibility in implementation of directions given for advancement in academics and research.
- ix. We should understand the aspirations and thinking of students to provide more objectivity in our endeavors.
- x. Career wise well established Alumni are very important asset for an institution. They can be involved in selection process of faculty/devising course curricula. This will also help in improving placement scenario.
- xi. Students should be encouraged to undertake MOOC courses prepared by prestigious institutions of high caliber. Rather to modify available MOOC courses, better to float them as they are.





- xii. Cross selection of subjects across the Schools should be encouraged to broaden the knowledge base and understanding of the students.
- xiii. We should analyze the career path of our graduates sector wise viz. innovation/ further study /employment.
- xiv. For improvement in any area it is very important to know what we don't know.
- xv. We should identify the issues for admission of low caliber students, and thereby should find out remedial measures to ensure that high quality students join our programs.
- xvi. Our vision and mission statements should be of level of "larger than life", to strive for achieving them.
- xvii. Go fast to stay ahead is the requirement of the time.

**Prof. N.R. Dave**

- i. The faculty members are already directed for continuous improvement in their competency.
- ii. Faculty should plan out short term and long term objectives to elevate their competency.
- iii. Bottom Up approach should be encouraged.
- iv. We should pursue the concept of MBO – Management by Objectives. There should be periodic review and monitoring of quality enhancement mechanisms.
- v. Class room teaching should be given proper importance, as a part of which low/average caliber students should be focused more to improve their academic performance.
- vi. Director/HoD/faculty should interact and leverage at least with the engineers/technocrats/entrepreneurs who have been felicitated / honored by PDPU on Engineer's Day, for the sake of betterment in training and placement of students. This may also provide industry project work for students as well.
- vii. Whatever mechanisms we introduce to excel in research and academics, it should be sustainable in nature, so that the respective processes can be taken forward on continual basis.
- viii. It is necessary to review the desirability of International Exposure Program (IEP) for engineering students. As a part of this, last three years data regarding IEP for engineering students should be analyzed to understand how many students secured employment/ better salaries / pursued higher education in India/ abroad.
- ix. We should legitimize API scheme for performance evaluation of faculty.

**Shri V.C. Shah**

- i. For any initiative, its intention should be understood fully, and to follow and carry forward them scrupulously.
- ii. Deliberations made in this meeting should be shared by the School Directors with faculty members to seek the action points from them.



**Prof. Reddy**

- i. The issue of herd mentality of students in opting for engineering branches should be addressed. Even after taking admission in a branch of engineering, they should be introduced to nature, avenues, and scope and applicability of respective branch; that will lead their study with clarity, objectivity and excitement in that branch.
- ii. Faculty may conduct PDPU awareness programs to 11/12<sup>th</sup> standard students of the neighboring schools, etc.
- iii. In Breeding of faculty needs to be avoided during faculty recruitment.
- iv. As faculty is getting compensation and benefits at par with IITs, we should desire required outcomes from them regarding academics and research.
- v. Tinkering laboratories have been planned to establish and encourage hands-on approach/ innovation / idea nurturing among the students.
- vi. Demand side research is being focused, through Ph. D. topics, PG & UG student projects.
- vii. A Chief Relationship Officer is being recruited to enhance visibility of PDPU in the ecosystem.
- viii. Continuous efforts are being made to make faculty aware of government funding for projects and research.
- ix. The grand research challenges put out by NITI Aayog, GoI is being mapped with PDPU faculty expertise and available facilities in order to write focused research proposals for possible funding.

**Shri Palak Sheth**

- i. The academic offerings for engineering students can be thought of in line with that of SLS pattern, i.e. practice oriented with a variety of pedagogies.
- ii. We should also explore from our experiences with IEP programs, in realizing our objectives.

**Summary**

At the end, the Chairman – Standing Committee summarized the discussion as follows:

- i. We have to shift our paradigm to take quantum jump for excellence in research and academics. The ideas relevant to this objective should be put into action as early as possible.
- ii. We should sensitize the students for broad areas of their career after graduation i.e. Industry Employment/ Innovation and Entrepreneurship/Research/Further study when they enter in the first year, so that they can start thinking and make up their mind to pursue their career in a particular direction. Accordingly, we should provide proper environment to let them nurture their career choice. We may offer relevant courses from 3<sup>rd</sup> year of the study, in this regard.
- iii. Faculty should interact with industry on a continual basis to develop both faculty and students to become industry relevant.
- iv. Capsule programs may be offered as electives, to raise employability of the students.





- v. Major industry organizations should be brought over PDPU to make aware with PDPU which may culminate in their active involvement with PDPU, in terms of projects/placement/research/testing/laboratory up-gradation & alike.
- vi. From the year 2018 batch, we may start 4+1 year program for preparing industry ready graduates at least as a pilot project.

It was decided to disseminate the suggestions made at this meeting, among the faculty members by the DG/School Directors within a month, and further hold the next meeting during October end/start of November 2017 at which we will invite Shri S. I. Patwari- GCCI President also.

The meeting ended with the vote of thanks to all.



Registrar



Minutes of the second meeting of PDPU Advisory Committee held on 11 January 2018.

The following were present:

1. Shri D. Rajagopalan – IAS (Retd.)
2. Shri Nitin Shukla
3. Shri S.B. Dangayach, M.D. – Sintex Industries Ltd.
4. Dr. T. Kishen Kumar Reddy
5. Prof. N.R. Dave
6. Shri V.C. Shah
7. Prof. Tarun Shah
8. Shri Palak Sheth
9. Shri Abhinav Kapadia
10. Shri Ankur Pandya

The meeting was chaired by the Chairman – Standing Committee, Shri D. Rajagopalan. He welcomed the members. The meeting started with the updates from the Director General regarding status of various initiatives taken based on the directions/discussion of the previous meeting. A copy of the same was presented to the members at the meeting. The Chairman then invited the members to present their views. The salient points of the same are as under:

**Shri Nitin Shukla**

- i. To explore the possibility of extending help to the graduates pass out who are not placed during the campus placement or to arrange for engaging them in industry internship. This should have an element of some allowance through CSR activities of the industry.
- ii. Responsibilities of faculty should be quantified.
- iii. Faculty should associate with industry so as to bring consultancy projects, students training modules in various ways. The School Directors and the Director General should guide and supervise.
- iv. The professionals, engaged as mentors should also spend time with the school faculties to understand the issues so that their interactions become more effective and meaningful.
- v. It should be ascertained what to do and how to do, to enhance students' quality.
- vi. An external review may be conducted for assessment of faculty efficacy and caliber.
- vii. To identify the need for futuristic models to improve the competency and employment quotient and to introduce the same as capsule program.
- viii. PDPU have system of students' feedback for the faculties. The format of feedback and its collection procedure may be reviewed for correct, free and frank feedback. The process should be capable to differentiate between the efficacy and popularity of the faculty.
- ix. The feedback process should differentiate between the effectiveness and popularity of the faculty.



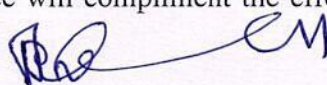


### **Chairman – Standing Committee**

- i. To prepare a scheme to provide semester long internship. (i. e. to plan to provide it for current semester-6 students when they enter in 7<sup>th</sup> semester next year. The students who are presently in 4<sup>th</sup> semester may be facilitated for industry internship in semester-6 itself. Likewise such internship may be structured in semester-6 for all successive batches.)
- ii. To prepare department-wise action plan for industry contact.
- iii. It is fact that due to various constraints the academic quality and preparedness of the present intake is not up to the mark. This should not be viewed as a problem but as a challenge and prepare ourselves to work to elevate to the expected level. This in turn will improve the quality of intake in future.
- iv. Placement is one of the core responsibilities of faculty, for which more concerted efforts should be exercised by the faculty.
- v. Though we have introduced facility for interschool/inter-branch selection of subjects, the data on number of students availing this provision is not available. This should be compiled and the School should work so that the interested students may take the benefit of the same.
- vi. The capsule programme is aimed to equip students for peripheral and futuristic skills and knowledge to enhance their employability and understanding of the subject. It can be scheduled on week end/vacation (depending on the availability of expert or time table constraint). Some of such courses could be General Accounts/Finance/Human Relations/Public Administration/Energy Value Chain/Environmental Management/ Business Communications and alike.
- vii. Beginning can be made by making one capsule course compulsory during their UG programme. This should be raised to three over a period of time and the basket of capsule courses should also be increased. At least one Capsule programme should have been taken up by every student during his entire study period at the University.
- viii. It is crucial to focus to improve the employability of the UG students.
- ix. PDPU students should turn out as energy professionals. For this Curriculum should be reviewed to make it Energy Focused, across all academic programmes at the University. This will also support greatly in leading the University as most sought often for energy related solutions and skills.
- x. The executive/governing body meetings of Associations/Federations may be hosted at PDPU. So that Industry become more familiar with PDPU and thereby PDPU may become a more preferred place for them to employ our students directly. Chief Relations Officer may take up this responsibility.
- xi. Separate School/Departmental meetings should be held by the Director General to devise and provide support action plan.

### **Shri S. B. Dangayach**

- i. To explore the possibility to harness the potential of experienced professionals in the industries for class room and for capsule courses. The resource will compliment the efforts of the faculty and





may to an extent ease the shortage of the experienced faculties. PDPU may have to ignore the lack of their formal PG/Ph. D. qualification.

- ii. The reference of 'Energy' in Vision statement should become focal point for all academic endeavors.
- iii. Considering the infrastructure and impetus of the University, the efforts should be that the pass out of the University should stand out clearly for their academic and professional preparedness.

**Prof. N.R. Dave**

- i. Professional body Chapters like ISTE should be made live.
- ii. HoDs should periodically visit ongoing faculty classes.
- iii. Selection and appointment of Mentors should be with care and caution.

**Prof. Reddy**

- i. Invite Shri Nitin Shukla and Shri Dangayach to interact with faculties to share industries expectations and perspective.
- ii. To involve School Directors in Advisory meetings.
- iii. To pursue for approval to the Research proposals submitted to Govt. of India agencies.
- iv. Approval to students' research and its fund release should be concluded at the start of the odd semester, instead in even semester.

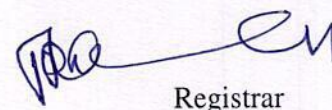
**Shri Palak Sheth**

- i. Summer/Winter short term programmes may also be kept open to neighboring institutes like GNLU/DA-IICT/UIAR, may be at the concessional cost.
- ii. The calendar of such short term/capsule programme should be determined well in advance, may be at the start of academic year.
- iii. The annual institutional/School calendar should contain all other events besides academic matters.

**Summary of major action points:**

- 1) Identification and introduction of Capsule Programmes.
- 2) Planning of semester long internships for next year batches.
- 3) Re-structuring of curriculum of programmes to make energy focused.
- 4) Hosting of on campus meetings of professional bodies/associations/federations.
- 5) Release of students' research funding at the start of academic year.
- 6) Nomination of Mentors.
- 7) Bringing in consultancy/testing projects by Faculty.
- 8) Increase in getting sponsored R & D projects by Faculty.
- 9) To devise matrix of performance appraisal of faculty.
- 10) Active involvement of faculty in campus placement activity.

The meeting ended with the vote of thanks to all.

  
Registrar



Minutes of the third meeting of PDPU Advisory Committee held on 19 November 2018.

The following were present:

1. Shri D. Rajagopalan – IAS (Retd.), Chairman, Standing Committee
2. Dr. R. A. Mashelkar, FRS ( through video conference)
3. Shri S. B. Dangayach, Ex M. D. – Sintex Industries Ltd.
4. Dr. C. Gopalkrishnan
5. Shri V. C. Shah
6. Dr. Chaitanyamoy Ganguly
7. Dr. Subhash Shah
8. Dr. Anurag A. Gupta
9. Prof. Tarun Shah
10. Shri Palak Sheth
11. Dr. T. P. Singh
12. Dr. Anirbid Sircar
13. Dr. Nigam Dave
14. Dr. Pramod Paliwal
15. Shri Abhinav Kapadia
16. Shri Ankur Pandya

Shri D. Rajagopalan, Chairman- Standing Committee greeted Dr. R. A. Mashelkar and welcomed the members and invitees. On behalf of PDPU, Dr Ganguly made presentation, highlighting the academic and research activities of PDPU, during the last three years and summarized the action points on the recommendations made in the last two meetings of the Advisory Committee.

Dr. Mashelkar made several valuable suggestions during the course of the presentation so that PDPU can emerge as a centre of excellence in energy education and research.

The summary of the meeting is as under:

**Item-1 To consider the action points with reference to the Summary – Recommendations of PDPU Advisory.**

Observations and comments of Dr. R. A. Mashelkar :

- i) Dr Mashelkar complimented the academic and research activities of PDPU and mentioned that the Institution is in the right direction. He mentioned that PDPU should keep in mind excellence with relevance and affordability and set quality norms of research. Accelerated approach and continuous monitoring are necessary to evaluate the research quality.
- ii) He mentioned that the jobs for the future will be totally different from what it is today. Till date 55 such jobs have already been identified. The nature of the academic curriculum, training and research activities should address the requirements of such jobs suitably. Engineers should come out of Own Specialization Only approach and follow solution oriented approaches based on critical thinking and application of knowledge and skills.
- iii) It is also necessary to ensure sustainability and economy of all research endeavors. The outcome should be sustainable and socially acceptable. He mentioned that sustainability is based on 4 parameters, namely, user and environmental friendliness, economic viability, and



societal acceptance. The local realities and ecosystem should be kept in mind in formulating research programs.

- iv) During the selection of projects, emphasis should be on Assured Matrix Approach (AMA), comprising all parameters e.g. affordable excellence, sustainability, social acceptance, and relevance to focus areas of the institution. He shared his experience on AMA for monitoring the effectiveness of the Swacch Bharat campaign. PDPU should evolve a similar result oriented AMA for all its activities.
- v) Competencies for students should include:
  - a) Capability to deal with the VUCA (Volatile, Uncertain, Complex and Ambiguous) world;
  - b) Creativity
  - c) Learning not just by creation but by co-creation also

The faculty should communicate with the students regarding technology integration and innovation. The rural Internship program of PDPU should be augmented. The students should not only identify the problem but find its solution also.

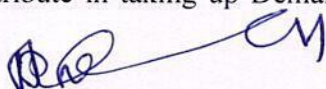
- vi) We should think and act in terms of “pole-vaulting” rather than “leap-frog” in order to make us distinctive apart.
- vii) Dr. Mashelkar kindly consented to review the Vision Statement of PDPU when DG- PDPU and Dr. Ganguly would meet him.

#### Observation and comments of Chairman-Standing Committee

- i) The Chairman shared that the University is keen to develop students of tomorrow and accordingly, curriculum and research program are being framed. Capsule courses are a step in that direction.
- ii) The Chairman informed that in order to evolve solution oriented approach, PDPU is on the way to adopt project based course pedagogy. He requested Dr. Mashelkar to share his ideas on impact of emerging technologies on societal issues.
- iii) The Chairman advised formation of multidisciplinary students who should be given different problems of graded difficulties. We may start with 30 such groups. This will facilitate collective solutions approach to a problem. Faculty members should also actively participate in such activities. IIC of PDPU also may assist to this.
- iv) The Chairman directed Directors of School to come out with action plan to move forward on Dr. Mashelkar's advices.
- v) The School Directors should prepare action plan to implement the suggestions and submit for discussion in the ensuing meeting.

#### Observation and comments of Shri S. B. Dangayach

- i) He advised to make Vision Statement towards Solution Centric statement.
- ii) He also advised PDPU to become pioneer in taking up and publishing on energy economics. He expressed his readiness to contribute in taking up Demand Side Energy Management program.





### Observation and comments of Dr. Palak Sheth

He advised to go for Digital Learning Programs in the light of provisions made in the Graded Autonomy conferred on PDPU by UGC. This will in some way also help to reduce teaching load of faculty, paving way to focus more on research activities and consultancy.

#### **Item-2 To note the initiatives to improve academics: NIRF Ranking, Capsule Courses, Distinguished Guest Lectures & such other matters.**

- i) While advising on NIRF ranking improvement, Dr. Mashelkar suggested for accelerated approach to work on NIRF parameters.
- ii) The Chairman apprised about the introduction of Distinguished Lecture Series for raising visibility of the University. Dr. Mashelkar advised such lectures should be followed by a competition among students to find out their learning and analyzing ability.
- iii) Dr. Mashelkar also agreed to provide some possible framework on Distinguished Lecture Series in response to the request from the Chairman; whether such lectures should be held on diverse topics or focused on some typical issues only, or a mix of it. He also agreed to exercise his influence in inviting luminaries to deliver such lectures at PDPU.
- iv) Dr. Mashelkar suggested that Distinguished Guest Lecture also should be in the direction of integrated solution approach, which may also lead to developing business model. He also suggested that the faculties and students should further work on the observations/suggestions of the Guest Lectures so that the institutions and stake holders gain out of it. The Chairman- Standing Committee advised to prepare framework including students' participation for this purpose.

#### **Item-3 To review the present composition of Research Advisory Board.**

- i) The Chairman – Standing Committee requested Dr Mashelkar to be the Chair Person of RAB of the University. Dr. Mashelkar readily agreed to it.
- ii) DG and Dr. Ganguly will meet Dr. Mashelkar soon to review and confirm the composition of Research Advisory Board of the University.
- iii) Dr. Mashelkar advised that eminent visionaries with strong technical background and one who can provide unique research challenges should be invited to be on Research Advisory Board.
- iv) The Chairman requested for kind intervention of Dr. Mashelkar to bring one noble laureate on RAB of the University.

#### **Item-4 To review the functions of Research Advisory Board.**

The Committee considered and approved the functions of RAB placed before it.

The meeting ended with the vote of thanks to all.



Registrar