PRACTICE SCHOOL PROGRAM

LINKS

THEORY LEARNT IN CLASS ROOM

PRACTICE IN THE INDUSTRY

WITH

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Theme of Practice School (PS)

Practice School is an educational innovation seeking to link industry experience with university instruction. The objectives of PS are to (i) meet the rapidly changing needs and challenges of a professional workplace, (ii) enable students to acquire learning by applying the knowledge and skills they possess, in unfamiliar, open-ended real life situations, and (iii) bear an economic relevance to society. These objectives are achieved by bringing the reality of the world of work into the process of education. PS creates the required setting for experiential and cooperative learning and education, by providing students with an opportunity to work on relevant assignments, under the guidance of professional experts and under the supervision of faculty. Consequently, Practice School serves as a platform that facilitates and promotes partnership and intellectual exchange between academia and industry.

Beginning of PS

Birla Institute of Technology & Science, Pilani introduced the PS programme in 1973 for all disciplines across the Institute. Though PS programme began in 1973 with merely 12 students and 4 faculty members at HINDALCO, Renukoot, it has been growing at a steady rate since then.

Salient Features

- Institutionalized linkage between University and Industry
- Applicable to all degree programs
- Integral part of the curriculum
- Student involvement in real-life projects
- Continuous Internal Evaluation system
- Monitoring and evaluation by resident faculty member

Programme Structure

Single Degree

- It is notionally of four years duration, with the input being 10+2 pass students who have qualified for admission through BITSAT (the online admission test of BITS Pilani).
- The first year is devoted to establishing a strong foundation in Maths, Sciences and Basic Engineering (Electrical, Electronics Engg, Computer Programming, Workshop), Technical Arts such as Report Writing.
- The Disciplinary Core courses starts in the second year itself. Along with Discplinary Core courses, Maths Foundation and General Awarness courses (Principles of Management/ Economics) and some Humanities electives are done by a student.
- Practice School-I is conducted during the summer following the second year.
- The third year is spent studying Specialized Discipline Courses and various other Analysis and Application Oriented Courses. By the end of the third year, the student would have completed all the named (compulsory) courses of the degree program.
- In the final year, the student spends one semester doing elective courses and the other doing Practice School-II.
- As mentioned earlier, Practice School is optional. A student may even opt for Thesis. Such a student will carry out the Thesis work under the supervision of a faculty member at BITS/other prominent national/international research centres in place of Practice School-II.

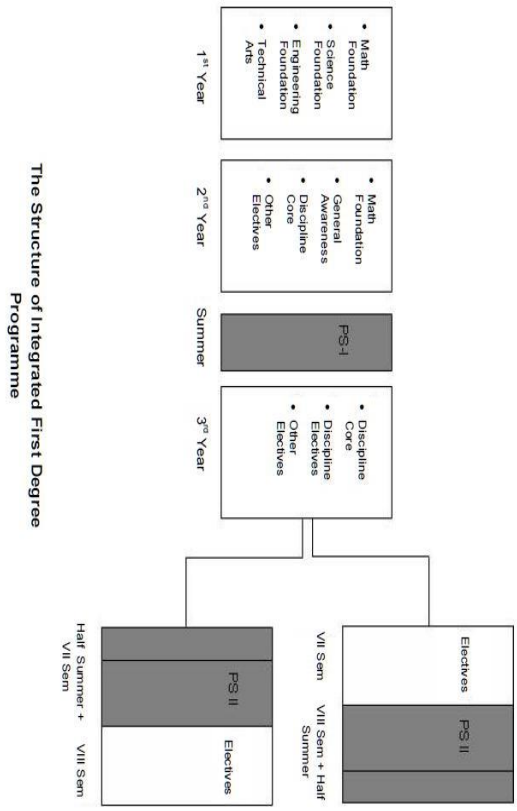
Dual Degree

- A student may be admitted to the Composite Dual Degree Program under which the student simultaneously pursues two degrees.
- Practice School-I appears in the chart at the end of two years in this program. Such a student may opt for PS-II to satisfy the requirements for both the degrees, which will be done in the last two semesters of the program.

Higher Degree

- The program is of two years duration.
- The first three semesters are spent on course work while the last semester is devoted either to Practice School or Dissertation.

The details of the structure of Integrated First Degree Program with Practice School option is shown in the flow chart below.



Practice School-I (PS-I)

Concept

Practice School-I (PS-I) is of eight weeks duration. It is offered during the summer after the students have completed two years of course work. PS-I is primarily exposure-oriented program which is graded for five units as it is an integral part of the curriculum.

Aim

PS-I provides a comprehensive first exposure to professional workplace, to learn organization structure and function, to develop personality traits, and to enhance communication and presentation (oral and written) skills.

Methodology

Orientation (up to four weeks) comprises plant visits and interaction with executives to facilitate the process of learning by observation and discussion, duly aided by the Checklist (an exhaustive list of queries about different aspects of an organization). Projects (often study type, involving collecting data, organizing, analyzing, and presenting data/information) are assigned to promote learning by doing. Components of evaluation include Diary, Quiz, Group Discussion and Presentation to develop regularity, group learning, and communication skills.

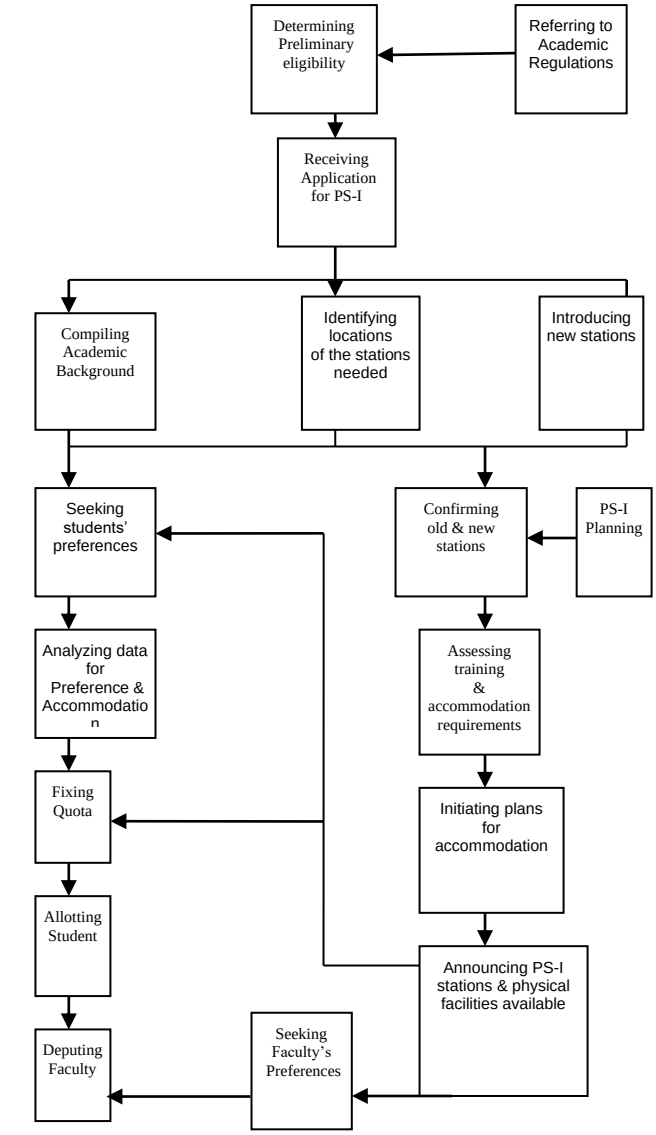
Planning Process

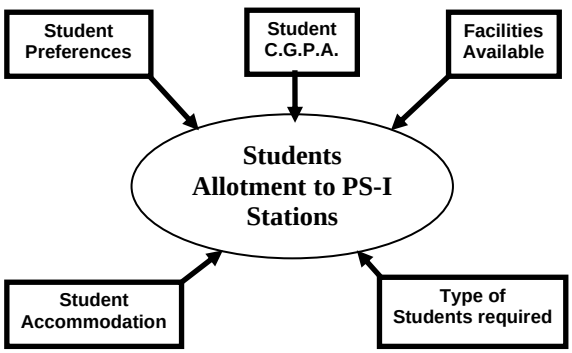
The process begins almost one year before the begining of PS-I. The various steps include (i) deciding the list of eligible students, (ii) carrying out a demographic analysis to establish regionwise targets for the number of stations and seats, (iii) confirming the continuation of existing stations and initiating new stations, (iv) arranging for living accommodation whereever necessary, and (v) deciding about the faculty and student co-instructor needs.

Allotment Process

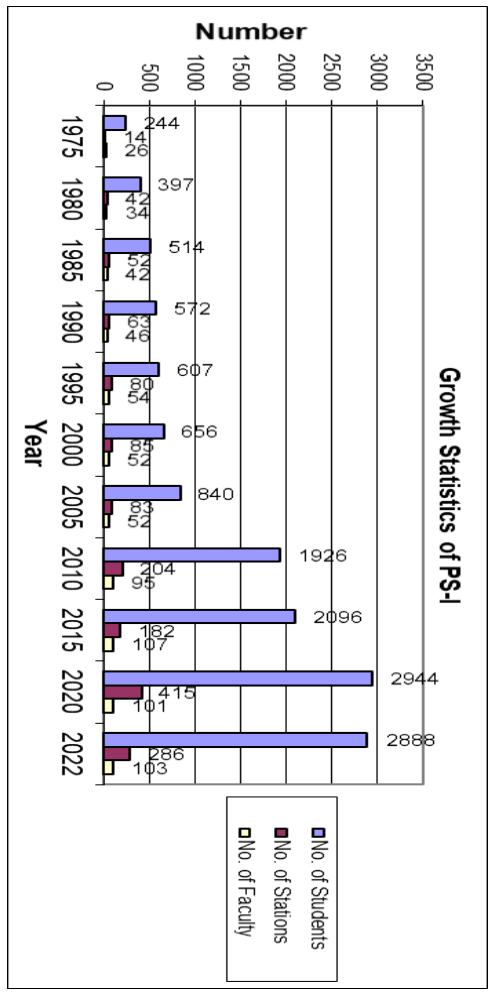
The list of stations, along with the facilities provided is announced to the students. The students then submit their preference order for the stations, along with information on their accommodation status at the various locations. The allotment is carried out on the basis of the CGPA of the students, keeping their preferences and the availability of accommodation in view, along with any particular requirements specified by the organizations.

The planning and allotment processes are shown in the flow chart below:

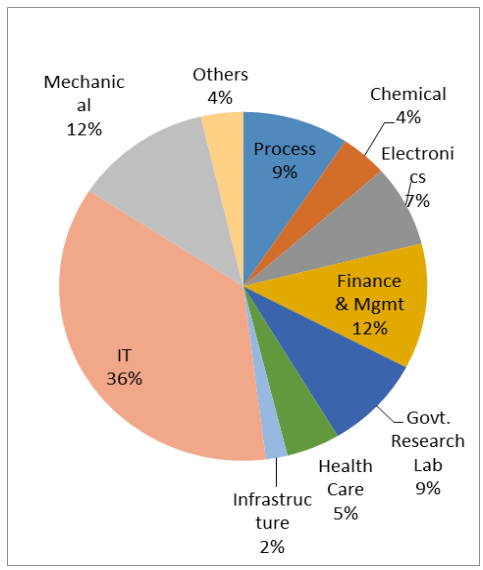




PS-I Allotment Process



Industrywise Student Allocation PS-I 2022



Practice School-II (PS-II)

Concept

Practice School-II, of five and a half months duration, carrying twenty units credit, is operated round the year, from July to December and January to June. This facilitates a continuous stream of well-prepared students to work on developmental projects in industry.

Since the students participate in and contribute to live projects, they are supported by a stipend and/or other facilities such as accommodation, travel reimbursement, etc.

Aim

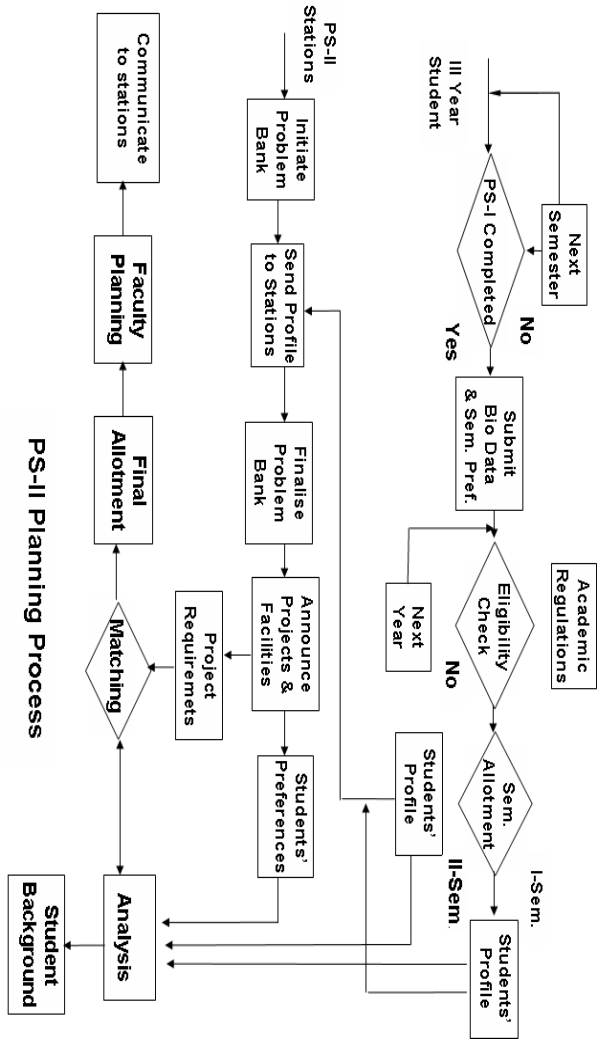
PS-II is directed towards providing an opportunity to students to experience the world of work, by participating in live projects in industry, even before they graduate. Apart from the academic benefits, this also serves to hone their problem solving skills, and build team spirit, initiative, and leadership skills, which makes the eventual transition to the professional world smoother and better.

Methodology

After a brief orientation, the students are involved directly in addressing the predefined problems (generally of multidisciplinary nature) of the host organization. The students are encouraged to work independently, under the technical guidance of a professional expert and the general guidance of the faculty. They are periodically required to defend the technical aspects of their work through written and oral presentations. Emphasis is laid on the importance of teamwork, development of leadership qualities, and the need for effective time management.

Planning Process

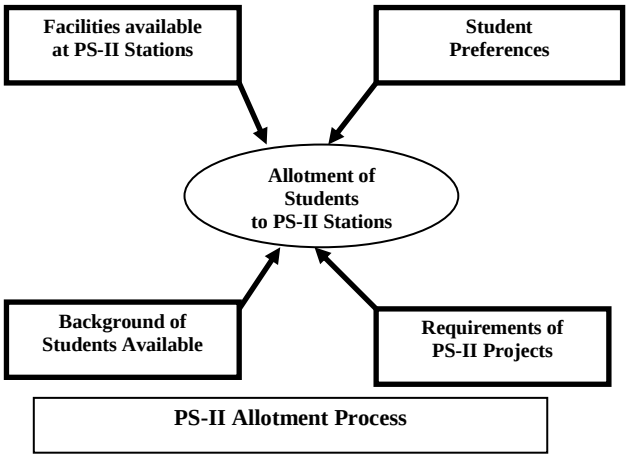
The first step in the planning process is to prepare the list of students who are to register in PS-II in each of the two sessions of the subsequent academic year. Interested dual degree students are likely to be permitted to pursue two semesters of PS-II. Higher Degree student may pursue PS in place of Dissertaion. The next step is to ensure that an adequate number of suitable projects are available from the various organizations (existing and new) to comfortably accommodate all the students. The off-campus faculty member's role is crucial in this part of the process. Another task is to prepare a profile of each student, containing personal data, academic credentials, skills, extra-curricular interests, etc. The flow chart below outlines the planning process.

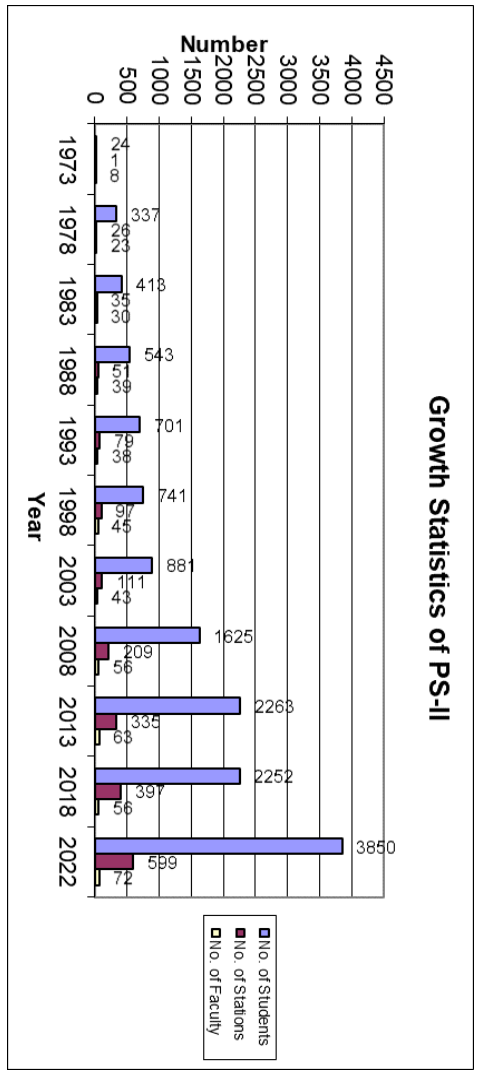


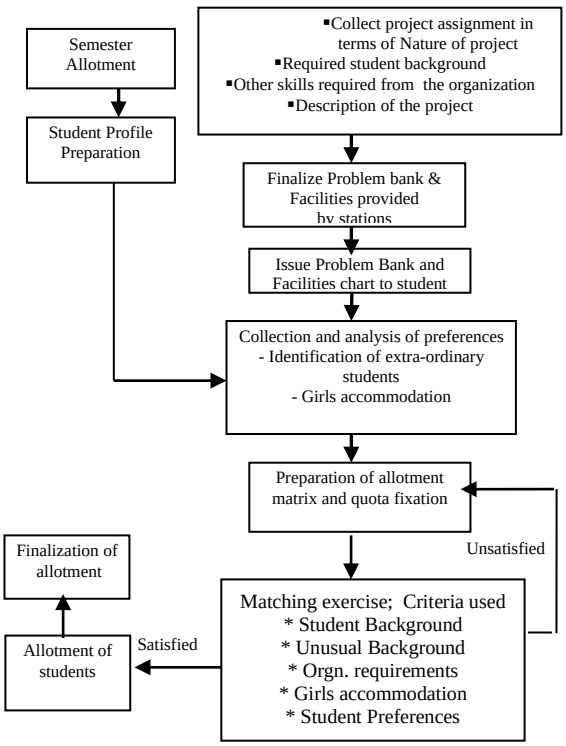
Allotment Process

The Problem Bank is a list of assignments from the various organizations, with details of skills and knowledge required. Facilty Chart contains the details of stipend and other support provided by the organizations.

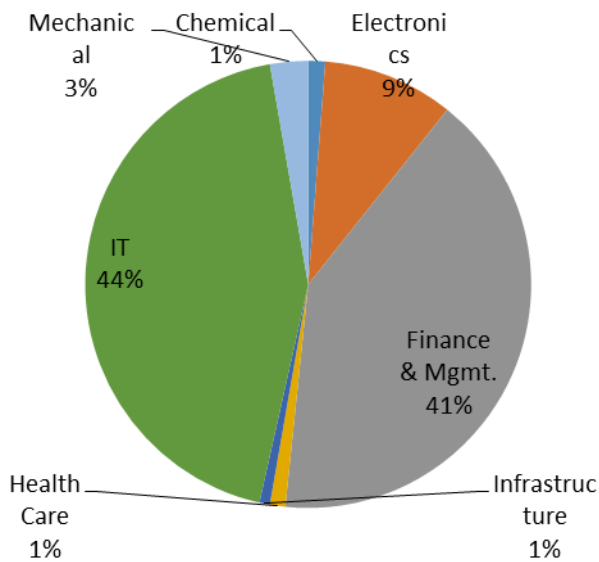
These details are made available to the students. Based on this information, the students submit their preferences for the various projects and organizations. The allotment of students is done by matching the project requirements with students' profiles, keeping the preferences and the merit of the students in view. The details of the allotment process are given below (chart).







Industrywise Student Allocation PS II 2022



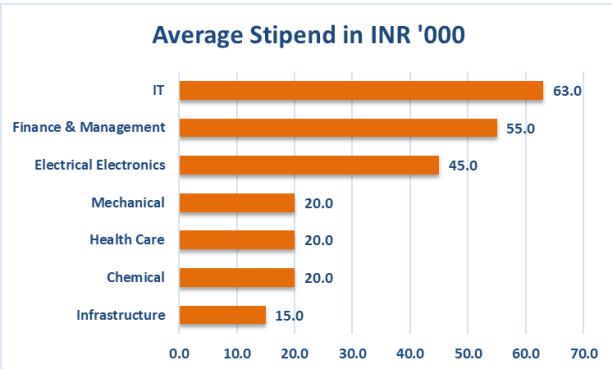
Foreign Stations

Over the years, PS-II has been operated at several locations outside India. These have the added dimension of providing international exposure (both at the professional and the personal levels) to the students. Typically, these organizations provide financial support, adequate to take care of their travel, living expenses, and medical insurance.

The following foreign station have been operated this year.

- Ascendo. AI, California
- Zluri, Singapore
- ODE Holdings, USA
- Spiralyze LLC Atlanta, USA
- AppBroda Tech. FZCO, USA
- Resolvity Inc. Texas, USA

The statistics of industry support to PS-II students during I Semester 2022-23 is shown below.



Role of PS-II Faculty

- Act as interface between the Institute and PS Station.
- Generate problem bank for subsequent semester in consultation with organization coordinator.
- Ensure smooth operation by being in constant touch with the students, project mentors, and coordinator.
- Monitor, evaluate, and grade the performance of students.
- Initiate PS activity in new organizations.

Role of Professional Experts

- Identify suitable assignments for the students.
- Provide necessary technical guidance in the execution of the projects.
- Participate in the evaluation of components such as seminar, project reports, and provide inputs to the PS faculty.

Demands of PS

- Enthusiastic, sincere, motivated, and industrious students, with eagerness to learn.
- Cooperation from Industry.
- Additional infrastructure outside the campuses.
- Efficient communication network and information processing systems.
- Committed and dedicated faculty.

Benefits of PS

The success of the PS system is due to the cooperation from industry, the excellence of the students, and the commitment of the Institute and its faculty, with each of the stakeholders also deriving benefits, in addition to the shared expertise, and the participation of industry in the process of university education.

Benefits to Students

- Learning by doing.
- All round development.
- Aid in career planning.
- Experience of professional working conditions.
- Smooth transition from campus to company.

Benefits to Industry

- Steady stream of skilled manpower provides value addition and increased productivity.
- Human Resource Development benefits.
- Conduit for Industrial Partnership.
- Employer Branding.
- Access to expertise from academia.

Benefits to the University

- Inputs to quickly adapt curriculum to match the needs of industry.
- Faculty development.
- Opportunities for research and consultancy.
- Access to industrial expertise and infrastructure.

Success Indicators

- Sustained and increasing demand from industry.
- Increasing stipends to students.
- Length of survival of stations.
- Interest of other Institutions in initiating similar programs.

PS Operational Statistics

Today Practice School programme has established massive linkages across the country, as borne out by the following statistics:

PS-I (Summer 2022)

- No. of Stations : 286
- No. of Students: 2888 (1018 from Pilani Campus, 841 from Goa Campus, 1029 from Hyderabad Campus)
- No. of Faculty : 103

PS-II (II Semester 2021-22)

- No. of Stations : 257
- No. of Students: 2156 (765 from Pilani Campus, 544 from Goa Campus & 847 from Hyderabad Campus)
- No. of Faculty : 72

PS-II (I Semester 2022-23)

- No. of Stations : 348
- No. of Students: 1694 (573 from Pilani Campus, 533 from Goa Campus & 588 from Hyderabad Campus)
- No. of Faculty: 71

MILESTONES:

- Beginning – 1973
- Opened to all disciplines – 1975
- COPSIMS (Computer Operated Practice School Instruction Monitoring System) – 1985
- First PS station abroad – 1991
- PS for Higher Degree – 1992
- Double semester PS for Dual Degree students – 1992
- Combined PS-I operation for Pilani and Goa campuses – 2006
- Combined PS-II operation for Pilani and Goa campuses – 2007
- WEPSIMS (Web Enabled Practice School Instruction Monitoring System) – 2008
- Combined PS-I operation for Pilani, Goa and Hyderabad campuses – 2010
- Combined PS-II operation for Pilani, Goa and Hyderabad campuses – 2011
- BITS Pilani was offering scholarship of Rs. 44,000/- (for the entire duration of PS-II) to selected PS-II students with CGPA 7.00 and above at various research organizations from first semester 2012-2013. Scholarship was increased to Rs. 66,000/- from second semester 2015-2016.
- PSMS (Practice School Monitoring System) – 2014
- Digital Content for Skill Set Gap - 2016
- Introduction of Subject Matter Expert (SME) for PS-I Projects - 2017
- Successful implementation of PS-I course in remote mode for 2940 + students during summer 2020 with detailed project identification prior to start of the course. Apart from project assignments, students were also exposed to well-structured domain specific corporate lectures as a part of PS-I. The Learning Management System was implemented for the seamless evaluation and monitoring of the programme.