

PROFESSIONAL PRACTICES

DETAILED SYLLABUS

OBJECTIVES

Professional development of Diploma engineering students is to be done by exposing them to various simulative situations in the industries. This is achieved by involving students in activities such as inviting experts from various industries for sharing their experiences, arranging industrial visits, seminars etc.

I. Information Search and Data collection

Information search can be done through manufacturer's catalogue, websites, magazines; books etc. Following topics are suggested.

1. History of Aviation
2. Classification of Aircraft
3. Classification of Aircraft based on application
4. Different type of flight control systems
5. The student should search any relevant information of innovation principles should lead to selection of Project in Current semester.
6. Alternative materials for manufacturing
7. Composite materials
8. Nano materials
9. Special purpose machines
10. Aircraft maintenance
11. Flight and maintenance safety
12. Classification of cockpit instruments
13. Different type of navigation system
14. Different type of power plants used in aircraft
15. Different type of power plants used in Rockets
16. Different type of power plants used in Helicopter

Method for conducting Graded activities

1. The student should individually select the topic, and search the information related to topic.

2. The report is strictly hand written document to have knowledge of precise writing and report making based on data collection
3. Carry out class room presentation.

II. Guest Lecturers: To be organized from any two of the following areas

Experts / Professionals from different field/industries are invited to deliver lectures at least TWO sessions in a semester. The topics may be selected by the teacher /industry expert to develop required skills.

1. Aircraft Pollution control and effect on environment .
2. Non destructive testing.
3. Fire Fighting / Safety Precautions and First aids.
4. Career opportunities,
5. Yoga Meditation,
6. Nonferrous Metals and alloys for engineering applications
7. Computer aided drafting.
8. Composite Materials.
9. Safety Engineering and Waste elimination
10. Interview Techniques.
11. Environmental pollution & control.
12. Nanotechnology
13. TQM
14. Cockpit resource management

Method for conducting Guest lectures

1. The teacher/ISTE student chapter convener should fix up the date for guest lecture
2. The HOD of the department should chair the event
3. The students of class allowed to participate in the session
4. Watch the talk and make the brief hand written report on the guest lecture delivered by each student as a part of Term work.
5. Make Audio/visual record of the guest lecture by using any smart devices
6. Opportunity should be provided for students for live Interaction with experts and record it on any one smart device.

III. Group Discussion: (One topic)

The students shall discuss in group of six students .Some of the suggested topics are

1. Polythene bags must be banned!
2. Do we really need smart cities?
3. E – Books or Printed books – what's your choice?
4. Is Face book for the attention – seeking and lazy people?
5. Globalization and its impact on Indian Culture.
6. Analytically evaluate the solutions to traffic problems
7. Global warming is caused more by developed countries
8. Rain forests help in maintaining the earth's ecosystem
9. Reservation for women would help the society
10. How to deal with terrorism
11. Water resources should be nationalized
12. Daughters are more caring than sons
13. NGOs - Do they serve people's interests?
14. Managers are born, not trained
15. Managerial skills learnt in the classroom
16. Women are good managers
17. India's growth rate is bridging gap between rich and poor.
18. Nuclear power is a safe source of energy
19. Electronic media vs. print media
20. Corruption is the price we pay for democracy
21. Multinational corporations: Are they devils in disguise?
22. Advertising is a waste of resources.
23. Privatization will lead to less corruption.
24. China market - a threat to Indian market
25. Technology Creates Income Disparities
26. India should be reorganized into smaller states.
27. Rising petrol prices - Govt. can control?
28. Smaller businesses and start-ups have more scope
29. Developing countries need trade, not aid.
30. Business and Ethics do not go together
31. Performance based bonuses for government employees should be welcomed
32. Depreciation of Indian Rupee has only negative impact on the economy
33. Gold: Best investment or a bursting bubble?
34. Freedom of press should exist
35. India needs a strong dictator

36. Media is a mixed blessing/How ethical is media?
37. Computer viruses are good
38. India should practice "Swadeshi"
39. The government should stop funding IIT's and IIM's
40. Food Bill - Is it really something India needs?
41. Will India really be the superpower of 21st century?
42. Quality is a myth in India.
43. China - A threat to India?
44. Indian villages - our strength or our weakness?
45. Mobile phones - requirement of the day.
46. Cursing the weather is bad farming
47. If you want peace, prepare for war
48. Education is a progressive way of discovering your ignorance.
49. Beauty contests degrade womanhood
50. If you are not a part of the solution, you are part of the problem
51. Examinations - has it killed education?
52. The medium of teaching in schools should be English
53. A room without books is like a body without soul.
54. Educated Indians lack national commitment.
55. E-Learning is good for the education system and society

Methodology for conducting Group discussion/Seminar

1. The teacher will allot a topic for a group of six students
2. The teacher should give an introductory talk on Ways and rules to carry out group discussion
3. The students should ask to show interest with others and work effectively with them to meet common objective. The teacher should provide tips to accept feedback in a constructive and considerate way and how to handle frustrations in group, while discussion.
4. The placement officer and any other senior faculty of the institute/ HOD of other department should be invited and they should act as observing members, apart from teacher
5. The teacher should fix up the time duration for initiating and conducting the activity
6. Documentation to be produced for validation

- Hand written document on minutes of discussion, description of the topic discussed
- Record the few minutes of discussion by smart device

IV. Individual Assignments and Life skills

The students will perform ANY ONE of the following activities individually (other similar activities may be considered) in both the sections

A. Individual assignments

1. Collecting Failure data for aircraft / system / equipment.
2. Survey of oils used for hydraulic circuits – specifications, properties, costs, manufacturers names etc.
3. Study any one type of CNC machining centre and prepare report on tooling and tool holding devices
4. For a given job write a sequence of operations performed by automated manufacturing system. Draw a block diagram of control system to perform above operations
5. For a drilling or milling operations on a simple machine component,

B. Life skills

1. Conduct aptitude, general knowledge test, IQ test, Solve Puzzles.
2. Set the goal for personal development.
3. Develop good habits to overcome stress.

Methodology for conducting activity

1. The teacher will assign a topic for individual student; give sufficient time to complete the task. Ask the student to submit an hand written report
2. The teacher should conduct any one specified life skill activity with local NGO/ placement cell/ISTE student chapter/CCTEK/ NSS unit of the institute. The student should present his/her experiences in a class and make report.

V. Collecting market data and analysing for meaningful inferences

1. Collect data for any two products/chemicals/machines of two different producers used in construction industry which includes technical details, specifications, cost and customer satisfaction.
2. Use appropriate tools and collect data from authentic sources. Depending on the source decide the number of units for collecting the data.

3. Analyse the data with a view to compare these two products/chemicals/machines.
4. Interpret the analysis for meaningful conclusions.
5. Record the whole process for any other person to verify.

Standards to be met

1. Given two products/equipments/service, one must collect adequate information from an authentic source for each, like the company website or the printed brochure and record the specifications.
2. The maintenance of quality of the product/service needs to be studied from personnel working at different levels in the company (3 -5 in number) for each product/service. A set of questions needs to be prepared for collecting data. The same questionnaire has to be used for collecting data from the personnel mentioned above.
3. One must compare the two products for all the parameters based on the specifications. Also, a market survey has to be done preparing a printed questionnaire of around 5 questions and collecting responses from 20 customers. Then, analyse the data, compare them and interpret the analysis for meaningful conclusions.