

**Program Name** : Diploma in Medical Electronics  
**Program Code** : MU  
**Semester** : Sixth  
**Course Title** : Industrial / Hospital Training and Project  
**Course Code** : 22063

### 1. RATIONALE

The rise in global competition as prompted organization to devise strategies to have talented and innovative work force to gain a competitive edge. Developing an industrial/ hospital training is an impactful strategy for creating a future talents pool for the industry. In plant training correlates theory and practice. The main aim of this course to enhance the employability skills of the students.

### 2. COMPETENCY

The aim of this course is to help the student to attain the following industry identified competency through various learning cum internship experiences:

- Follow standard practices used in maintenance of equipment in medical industry / hospitals.
- Implement solutions by integrating the various types of skills acquired during the programme to solve the identified problems/complete the identified task/shortcomings faced by hospitals/medical industry.

### 3. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following industry-oriented COs associated with the above-mentioned competency:

- Use the technical competencies and skills acquired in different courses.
- Use various materials, processes, products, technologies relevant to industry environment
- Solve broad based biomedical engineering problems in industry / hospital.
- Undertake project work.
- Follow discipline, culture, safety, ethics and the functioning of different departments in medical industry/ hospital.

### 4. TEACHING AND EXAMINATION SCHEME

| Teaching Scheme |   |    | Credit (L+T+P) | Examination Scheme |     |     |     |     |       |           |     |     |      |     |       |     |
|-----------------|---|----|----------------|--------------------|-----|-----|-----|-----|-------|-----------|-----|-----|------|-----|-------|-----|
| L               | T | P  |                | Theory             |     |     |     |     |       | Practical |     |     |      |     |       |     |
|                 |   |    |                | Paper Hrs.         | ESE |     | PA  |     | Total |           | ESE |     | PA   |     | Total |     |
|                 |   |    |                |                    | Max | Min | Max | Min | Max   | Min       | Max | Min | Max  | Min | Max   | Min |
| -               | - | 33 | 33             | --                 | --  | --  | --  | --  | --    | --        | 450 | 180 | 450~ | 180 | 900   | 360 |

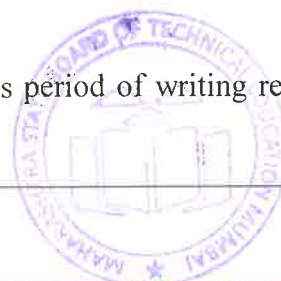
**Legends:** L-Lecture; T – Tutorial/Teacher Guided Theory Practice; P - Practical; C – Credit, ESE - End Semester Examination; PA - Progressive Assessment

### 5. INTERNSHIP SCHEMES AND DURATION

There are four different schemes of internship proposed. One of them is to be followed taking consideration of suitability of nearby industry / hospitals.

#### SCHEME A- Sixteen weeks in industry

16-week work allotted for internship in industry that includes period of writing report and project work.



OR

**SCHEME B- Sixteen weeks in hospital**

16-week work allotted for internship in hospital that includes period of writing report and project work.

OR

**SCHEME C- Twelve weeks in industry and four weeks in institute**

12-week work allotted for internship in industry and 4 weeks allotted for writing report and project work.

OR

**SCHEME D- Twelve weeks in hospital and four weeks in institute**

12-week work allotted for internship in hospital and 4 weeks allotted for writing report and project work.

**6. GERNERAL GUIDELINES FOR INTERNSHIP**

The department will arrange internship for students in industry / hospitals after fifth semester. The general procedure for arranging internship is given below:

**Step 1**

- a) Student request letter along with profile may be submitted to the Institute for their willingness and preference for providing internship training.
- b) Request letter from HOD / Principal of college should be sent to industry / hospital to allot slot for one of above scheme (12 weeks / 16 weeks) as internship period of student.

**Step 2**

- c) Industry / hospital will confirm training duration and number of seats allocated for internship via confirmation letter. In case a student arranges the training himself/herself, confirmation letter will be submitted by the student in department. Internship slot / duration may be conveyed to industry / hospital through email/letter by internship cell of department. (Internship cell may be constituted in the department with HOD as in-charge, one or two staff members as coordinators and student coordinator(s) depending on number of students).

**Step 3**

- d) Student on joining training at concerned industry / hospital submit joining report / letter.

**Step 4**

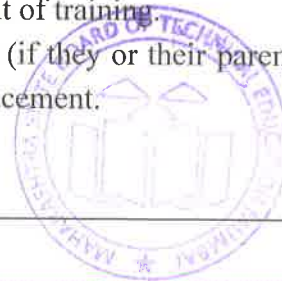
- e) Student undergo internship at concerned industry / hospital, in between faculty member(s) evaluate(s) performance of students visiting industry / hospital monthly and evaluation report of student is submitted to HOD with consent of industry / hospital person.

**Step 5**

- f) Student will submit training report as well as project report on completion of internship along with training certificate obtained from industry / hospital.

**7. GUIDELINES FOR DEPARTMENT OF THE INSTITUTE**

- a) The concerned departments have to send training request letter to various industries/hospitals (normally nearby), well in advance before commencement of training.
- b) Departments can take help of alumni or present students (if they or their parents or relatives have some contact in different industries) for securing placement.



- c) After getting sufficient number of seats from the industries/hospitals, students will be placed in different industries for their internship training.
- d) Students will have to fill up training form.(attached here with form-1)
- e) Department will issue an order letter to industry/hospital for the said training mentioning the name and registration number of students.
- f) All above activities have to be carried out in vacation / in advance of previous semester as plan out of placement in consultation with students. The students would normally be placed as per their choices, in case of more demand for a particular industry/hospital centre students would be allocated place based on their relative merit (based on the result of previous semester results). However, if some students have arranged training placement in some industry/hospital with the help of their parents/relatives etc. then naturally they will have first chance for placement in those companies.
- g) Before relieving students for training Principal/HOD/Faculty should address students about industrial/hospital safety norms, rules, safety precautions and discipline to be maintained in the industry/hospital during the training. The same will be reminded by the institute supervisor during his/her visit to industry.
- h) During the training period, the head of the department will maintain a schedule for follow – up of industrial/hospital training and according to it he/she will send the faculty members to various industries.
- i) Faculty member will be working as mentor / guide to the assigned group (s) and will be responsible for handling all the documents regarding industry / hospital training and project work and will be accountable to the HOD
- j) Faculty mentor should visit industry / hospital monthly and collect all the documents. In exceptional cases, where student join industry / hospital far away from institute then he / she may collect documents through email / post. TA/DA related to visits by faculty mentor to industry will be paid by the concerned institute.
- k) The faculty member during the visit to industry/hospital will check the progress of the student in the training, his/ her attendance, discipline and project report preparation.
- l) Faculty mentor should maintain good industry interaction by keeping contact with industry / hospital coordinator.
- m) After completion of training and project work, faculty mentor should make assessment of reports of industry / hospital training and project work.
- n) Project should be mini project. Should be carried out in a group of maximum three students.
- o) Any other relevant or required documentation regarding project / industrial training should be prepared by faculty mentor /coordinator along with HOD.

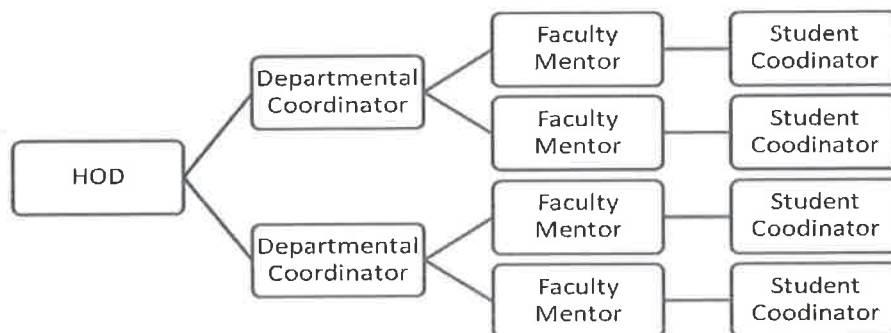


Figure: Departmental structure

## 8. ROLE OF INDUSTRY/HOSPITAL



Following should be requested in the letter to industry/hospital along with the list of students deputed to the industry:

- a) Industry/hospital will provide opportunity for effective learning by the students for improving their practical knowledge.
- b) Industry/hospital is requested to assign group of the students under training to some middle management level executive for supervision and guidance (This executive will work as Industrial/hospital Training Supervisor for assigned students).
- c) If number of students are large then there can be more than one industry/hospital training supervisor (Normally one industry/hospital training supervisor should be able to look after for 3 to 5 students)
- d) Industrial/hospital Training Supervisor is requested to instruct the students about the safety procedures and other rules of industry to be followed and discipline to be maintained
- e) Industrial/hospital Training Supervisor is requested to sign weekly diary (To certify the work done by students) with appropriate remarks and also give marks for their performance in that week.
- f) Industry/hospital may allot project to individual or group of students under training and in that case students has to prepare report on the same project.
- g) Industrial/hospital Training Supervisor is requested to provide desired information to students for preparing their industrial training report in the given format and also project report if students have taken up some project.
- h) Industrial/hospital Training Supervisor is requested to maintain attendance for the student under training and report any irregularity of the students to their parent college.
- i) Industry/hospital is also requested to issue a certificate of attending training on their letter head with comments if any for student's record and motivation.

## 9. RESPONSIBILITY OF STUDENTS

Following should be informed to students in the letter deputing them for the training; an undertaking for this should also be taken from them. Internship is student centric activity therefore students have to take an active role in all the activities, some of which are listed below:

- a) Students would interact with the identified faculty of the department to suggest his choices for suitable industry/hospital. Students if have any contact in any relevant industry/hospital (through their parents, relatives or friends) then also use those contacts for securing placement for themselves and their peers.
- b) Among the students, one student should be nominated as student coordinator for each industry / hospital who should be assigned major responsibilities and would be accountable to faculty coordinator.
- c) For allotment of duration / slot all student will be required to submit student internship program application before prescribed date.
- d) Every student is required to prepare a file containing documentary proof of the activities done by him. The evaluation of the activities will be done by faculty member / HOD.
- e) Various formats related to industry / hospital training / project are given in Annexure 1.
- f) Students have to fill the forms duly sealed and signed by authorities along with training order letter and submit it to training officer in the industry/hospital on the first day of training. (see format No .....)
- g) Student would carry with him/her the Identity card issued by institute during training period

- h) He/she will have to get all the necessary information from the Industrial/Hospital training officer regarding schedule of the training, rules and regulations of the industry/hospital and safety procedures to be followed. Student is expected to follow these rules, regulations, procedures etc obediently.
- i) Students should know that if they break any rule of industry/hospital or do not follow the discipline then industry/hospital can return back them even in middle of training. Institute will be not able to help in such cases.
- j) It is the responsibility of the student to collect information from industry/hospital persons i.e. managers/engineers/technicians about different procedures/testing and quality assurance methods/specifications of equipments and raw materials/maintenance procedures// production planning/organization structure etc.
- k) Students should understand that industry/hospital personals are very busy and hence they should observe the procedures etc. on their own. However, students should keep observing concerned industry/hospital persons and should approach them politely when they are relatively free or should take appointment with them for getting guidance and sorting out their queries.
- l) During the training period students have to keep record of all the useful information in Log book and maintain the weekly diary.(see format no.....)
- m) It is the responsibility of students to approach their training in-charge for getting signed their log book and show their weekly progress. They should themselves approach the training in-charge for this rather than waiting for call from training in-charge.
- n) In case they face any major problem in industry/hospital such as some accident or any disciplinary issue then they should immediately report to the institute.
- o) Prepare final report about the whole training for submitting to the department at the time of presentation and viva and get it signed from training in charge.
- p) Prepare a power point presentation about the industry/hospital and their learning in Industry for presentation in the institute after returning from training.

## 10. GUIDELINES FOR MICRO-PROJECT

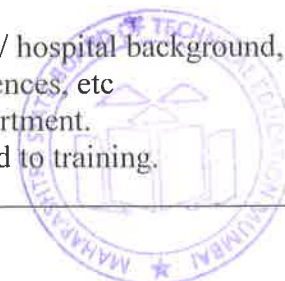
### 10.1 Project work

Following activities related to the project are required to be dealt with, during this semester.

- a) Form project batches and allot project guide to each batch. (Max. 3 students per group)
- b) Each project batch should select topic / problem / work by consulting the guide and / or industry/hospital. Topic / Problem / work should be approved by Head of department or industry / hospital.
- c) Each project batch should prepare action plan of project activities and submit the same to respective guide.
- d) At the end of semester, each project batch should submit final copy of project.
- e) Format of the Project report should be designed by the department.

### 10.2 Industry / Hospital Training:

- a) Report should be submitted in three copies, one for industry/ hospital, one for department, one for student.
- b) Training report should contain index, introduction, company/ hospital background, training area, Training activities, outcome from training, list of references, etc
- c) Format of the training report should be designed by the department.
- d) Faculty mentors are responsible for all documentation related to training.



**11. ASSESSMENT****11.1 PA (Progressive assessment)**

| S.No. | Aspect (in brackets assessor)                                                    | Marks Allotted |
|-------|----------------------------------------------------------------------------------|----------------|
| 1     | Attendance (By Industrial Coordinator)                                           | 50             |
| 2     | Monthly progress report (By Industrial Coordinator)                              | 50             |
| 3     | Project log book (planning and execution) (By Industrial Coordinator)            | 50             |
| 4     | Training Report (By Internal Faculty)                                            | 100            |
| 5     | Project Report (By Internal Faculty)                                             | 50             |
| 6     | Seminar on Training (By Internal Faculty)                                        | 75             |
| 7     | Seminar on project (By Internal Faculty)                                         | 25             |
| 8     | Stream and work based written exam on training and project (By Internal Faculty) | 50             |

*Note: There will be gap of more than one week between exam by internal faculty and examination by external faculty. In this period students will improve their seminar ppts and reports based on feedback from internal examiner.*

**11.2 ESE (End semester exam)**

| S.No. | Aspect (in brackets assessor)                                       | Marks Allotted |
|-------|---------------------------------------------------------------------|----------------|
| 1     | Training report (By external)                                       | 100            |
| 2     | Project report (By external)                                        | 50             |
| 3     | Seminar on training and Project (By External)                       | 150 (100 + 50) |
| 4     | Viva-voce by external examiner on training and project presentation | 150 (100 +50)  |

**DETAILS OF ATTACHED FORMATS**

| S.No. | Format   | Use                                                                                                                                                                                                                                         |
|-------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Format 1 | Student internship program application to be filled by student for registration internship program.                                                                                                                                         |
| 2     | Format 2 | Request letter from institute to internship provider industry / hospital.                                                                                                                                                                   |
| 3     | Format3  | This format useful for detailed information related to student internship program and will be prepared by faculty mentor. One copy of document should be kept in the department and another with Industrial/Hospital Training Coordinator.  |
| 4     | Format 4 | Relieving letter to relieve student to Industry / Hospital from institute.                                                                                                                                                                  |
| 5     | Format 5 | Student has to fill daily diary during Industry / Hospital training.                                                                                                                                                                        |
| 6     | Format 6 | Industry / Hospital training coordinator has to fill student monthly progress and faculty mentor will collect format from Industry / Hospital training coordinator and help Industry / Hospital training coordinator regarding this matter. |
| 7     | Format 7 | Student attendance sheet reported by Industry / Hospital training coordinator                                                                                                                                                               |
| 8     | Format 8 | Proforma for evaluation of six months Industrial Internship by Institute and Industry / Hospital training coordinator<br>OR<br>Institute and Industry / Hospital may use their own formats                                                  |

| S.No. | Format    | Use                                                                            |
|-------|-----------|--------------------------------------------------------------------------------|
| 9     | Format 9  | Project progress log-book prepared and maintained by guide.                    |
| 10    | Format 10 | Undertaking by the students before commencement of industry/ hospital training |
| 11    | Format 11 | Certificate- Industry/ Hospital Training                                       |
| 12    | Format 12 | Certificate- Project                                                           |
| 13    | Format 13 | Probable Questions for Stream and work based oral or written exam              |
| 14    | Format 14 | Format of Industrial Training Report                                           |
| 15    | Format 15 | Format of Hospital Training Report                                             |

### Format 1

### STUDENT INTERNSHIP PROGRAM APPLICATION

|                                        |          |           |                                    |
|----------------------------------------|----------|-----------|------------------------------------|
| 1. Student Name:                       |          |           |                                    |
| 2. Campus Address with Phone           |          |           |                                    |
| 3. Home Address with phone:            |          |           |                                    |
| 4. Student email address:              |          |           |                                    |
| 5. Internship period:                  |          |           |                                    |
| 6. Percentage of marks in second year: |          |           |                                    |
| 7. Internship Preferences              |          |           |                                    |
|                                        | Location | Core Area | Name of Medical Industry/ Hospital |
| Preference-1                           |          |           |                                    |
| Preference-2                           |          |           |                                    |
| Preference-3                           |          |           |                                    |

**Student name and signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_

Signature confirms that the student agrees to the terms, conditions, and requirements of the Internship Program

**Faculty mentor name and signature:** \_\_\_\_\_

**Date:** \_\_\_\_\_



**Format 2****REQUEST LETTER FROM INSTITUTE TO INTERNSHIP PROVIDER**

To

The General Manager (HR)

.....

.....

Subject: Request for Industrial Training of Diploma in Medical Electronics Programme 6<sup>th</sup> Semester Students from.....to.....

Dear Sir,

Our students have undergone internship training in your esteemed Organization in the previous years. I acknowledge the help and the support extended to our students during training in previous years.

In view of the above, I request you to allow our \_\_\_\_\_ (Total No.) students, details of whom are given below, for practical training in your esteemed organization. Kindly accord your permission and give at least one-week time for students to join training after confirmation.

A line of confirmation will be highly appreciated.

| S. No. | Name | Roll No. | Year | Discipline |
|--------|------|----------|------|------------|
|        |      |          |      |            |
|        |      |          |      |            |
|        |      |          |      |            |

With warm regards,

Yours sincerely,

HOD / Principal





**Format 3****DETAILED INFORMATION RELATED TO STUDENT  
INTERNSHIP PROGRAM**

(This will be prepared by faculty mentor.)

An internship is a unique learning experience that integrates studies with practical work. This agreement is written by the student in consultation with the faculty Mentor and Industrial/Hospital Training Coordinator. It shall serve to clarify the educational purpose of the internship and to ensure an understanding of the total learning experience among the principal parties involved.

**Contact Information****Student**

Name: \_\_\_\_\_ Roll. No \_\_\_\_\_ Enrollment. No \_\_\_\_\_

Campus Address: \_\_\_\_\_

City, State: \_\_\_\_\_

Mobile No: \_\_\_\_\_ Email: \_\_\_\_\_

**Industrial/Hospital Training Coordinator**

Name: \_\_\_\_\_ Designation: \_\_\_\_\_

Company/Organization: \_\_\_\_\_

Internship Address: \_\_\_\_\_

City, State: \_\_\_\_\_

Mobile No: \_\_\_\_\_ Email: \_\_\_\_\_

**Faculty Mentor**

Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Campus Address: \_\_\_\_\_

Name and signature of student

Date \_\_\_\_\_

Name and signature of Faculty Mentor

\_\_\_\_\_

Name and signature of Industrial/Hospital  
Training Coordinator

\_\_\_\_\_

Date \_\_\_\_\_



**Format 4****RELIEVING LETTER.**

To \_\_\_\_\_

.....  
 .....  
 .....

**Subject: Relieving letter of Third Year Medical Electronics student to Industry / Hospital.**

Dear Sir,

Kindly refer your letter/e-mail dated..... on the above cited subject. As permitted by your good self, the following students will undergo Industrial Internship in your esteemed organization under your guidance and directions from.....to.....

| S.No. | Name of student | Roll. No. | Branch |
|-------|-----------------|-----------|--------|
|       |                 |           |        |
|       |                 |           |        |
|       |                 |           |        |

This training being an essential part of the curriculum, the following guidelines have been prescribed in the curriculum for the training. You are therefore, requested to please issue following guidelines to the concerned manager/Industrial/Hospital Training Coordinator.

1. Each student is required to prepare Internship diary and report.
2. Kindly check the Internship diary of the student daily.
3. Issue instruction regarding working hours during training and maintenance of the attendance record.

Your efforts in this regard will positively enhance knowledge and practical skills of the students, your cooperation will be highly appreciated, and we shall feel obliged.

The students will abide by the rules and regulation of the organization and will maintain a proper discipline with keen interest during their Internship. The students will report to you on..... (date) along with a copy of this letter.

Yours sincerely,

Name and signature of  
HOD / Principal

Date \_\_\_\_\_



**Format 5****STUDENTS DAILY DIARY/DAILY LOG FOR TRAINING**

|                                                                 |                   |                  |
|-----------------------------------------------------------------|-------------------|------------------|
| Day-1                                                           | Date:             | Roll No:         |
| Student name:                                                   |                   | Enroll. No:      |
| Time of arrival                                                 | Time of departure | Remarks (if any) |
| Main points of the day: -                                       |                   |                  |
| Name and signature of Industrial/Hospital Training Coordinator: |                   |                  |



**Format 6****MONTHLY PROGRESS / EVALUATION REPORT FOR TRAINING****Student Name:** ----- **Date:** -----**Industry/ hospital address:** -----**Duration of training from** ----- **to**-----

Please evaluate your intern by indicating the frequency with which you observed the following behaviors:

4-Excellent 3-Very Good 2 - Good 1-Satisfactory

| S.No. | Behavior                                 | 4 | 3 | 2 | 1 |
|-------|------------------------------------------|---|---|---|---|
| 1.    | Performance in dependable manner         |   |   |   |   |
| 2.    | Cooperates with co-worker and supervisor |   |   |   |   |
| 3.    | Shows interest in work                   |   |   |   |   |
| 4.    | Learns quickly                           |   |   |   |   |
| 5.    | Shows initiative                         |   |   |   |   |
| 6.    | Produces high quality work               |   |   |   |   |
| 7.    | Accepts responsibility                   |   |   |   |   |
| 8.    | Demonstrates organizational skills       |   |   |   |   |
| 9.    | Uses technical knowledge and expertise   |   |   |   |   |
| 10.   | Shows good judgment                      |   |   |   |   |
| 11.   | Demonstrates creativity/originality      |   |   |   |   |
| 12.   | Analyzes problems effectively            |   |   |   |   |
| 13.   | Communicates well                        |   |   |   |   |
| 14.   | Writes effectively                       |   |   |   |   |
| 15.   | Has a professional attitude              |   |   |   |   |
| 16.   | Gives a professional appearance          |   |   |   |   |
| 17.   | Is punctual                              |   |   |   |   |
| 18.   | Uses time effectively                    |   |   |   |   |
| 19.   | Is self-reliant                          |   |   |   |   |
| 20.   | Accepts criticism                        |   |   |   |   |
| 21.   | Accepts responsibility                   |   |   |   |   |

Overall performance of student intern (circle one):

Additional comments, if any:

Name and Signature of Industrial/Hospital Training Coordinator



**Format 7****ATTENDANCE SHEET**

|                                          |  |
|------------------------------------------|--|
| <b>Name of Student</b>                   |  |
| <b>Roll. No</b>                          |  |
| <b>Name of Course</b>                    |  |
| <b>Date of Commencement of Training:</b> |  |
| <b>Date of Completion of Training:</b>   |  |

| S. No. | Month and year | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |  |
|--------|----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--|
|        |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|        |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|        |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |
|        |                |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |  |

**Note:**

1. Attendance Sheet should remain affixed in Daily Training Diary. **Do not remove or tear it off.**
2. Student should sign/initial in the attendance column. Do not mark 'P'
3. Holidays should be marked in **Red Ink** in attendance column. Absent should be marked as 'A' in **Red Ink**.

(Name and Signature of Industrial/Hospital Training Coordinator  
with organization stamp/ seal)

.....  
Contact No.....



**Format 8****PROFORMA FOR EVALUATION OF SIX MONTHS INDUSTRIAL INTERNSHIP  
BY INSTITUTE**

Name and Code of Institute: \_\_\_\_\_

**DEPARTMENT OF TRAINING AND PLACEMENT**

Ph. \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_

**Evaluation**

1. Name of Student \_\_\_\_\_ Mobile No. \_\_\_\_\_
2. Roll No. \_\_\_\_\_ MSBTE Enroll. No. \_\_\_\_\_
3. Discipline: \_\_\_\_\_ Semester \_\_\_\_\_
4. Duration of Training: \_\_\_\_\_ to \_\_\_\_\_
5. Home Address with contact No. \_\_\_\_\_
6. Address of Training Site: \_\_\_\_\_
7. Address of Training Providing Agency: \_\_\_\_\_
8. Name/Designation of Industrial/Hospital Training Coordinator: \_\_\_\_\_
9. Type of Work \_\_\_\_\_
10. Date of Evaluation \_\_\_\_\_
  - a) Attendance: (Satisfactory/ Good/ Excellent)
  - b) Practical Work by Industry: (Satisfactory/ Good/ Excellent)
  - c) Faculty's Evaluation: (Satisfactory/ Good/ Excellent)
  - d) Overall Evaluation of Industry: (Satisfactory/ Good/ Excellent)

**Overall grade:** (Satisfactory/ Good/ Excellent)Signature of Faculty Mentor  
with date and stampSignature of Industrial/Hospital Training Coordinator  
with date and stamp

\*Photocopy of the attendance record duly attested by the HOD should be attached  
with the evaluation Proforma.





**Format 10****UNDERTAKING BY THE STUDENTS BEFORE COMMENCEMENT OF  
INDUSTRY/ HOSPITAL TRAINING**

I, a student of Medical Electronics Programme of institute-----

here-by undertake that I am going to Industrial training / hospital training at -----

My details are as follows:

1. Name of the Student: Ms. / Shri
2. Email, Mobile/ Ph No:
3. Father's Name: Shri
4. Mother's Name: Smt.
5. Residential Address:
6. Parents Email, Mobile/ Ph No:

I undertake all the responsibilities for undergoing this Industrial training / Hospital training at my cost and I agree that.

- a) I will follow all the rules, regulations and guidelines prescribed by Industry / Hospital, MSBTE and Government of Maharashtra.
- b) I am aware that I have to make own arrangement for accommodation and local transport.
- c) If any accident/mishap happens with me during training then for any loss to me or my any body part, the training provider (industry/hospital) will not be liable for it.

Signature of Student with date:

Agreed as above

Signature of Parents with date:

(Father)

(Mother)





**Format 11**

**CERTIFICATE- INDUSTRY/ HOSPITAL TRAINING**

This is to certify that Mr./Ms.....

From .....College having Enrolment No: .....

has completed *Training* in .....  
.....(name of **Industry/ Hospital**)  
individually/ in a group consisting of..... persons under the guidance of the Faculty  
Mentor.....

Name and signature of Industrial/Hospital Training Coordinator:

Name of Industry/Hospital and address: .....  
.....  
.....  
.....

Telephone(O):.....  
Mobile No.....



**Format 12**

**CERTIFICATE- PROJECT**

This is to certify that Mr./Ms.....

From .....College having Enrolment No: .....

has completed *Final Project Report* having title

.....  
individually/ in a group consisting of..... persons under the guidance of the Faculty  
Mentor/Guide.....

Name and signature of Industrial/Hospital Training Coordinator / Guide from the  
Industry/Hospital for the project

Name of Industry and address: .....

Telephone(O):.....  
Mobile No.....

Name and signature of Faculty Mentor



**Format 13**

Work based written exam based on training / project. Some sample questions are given here. Faculty members may add questions and prepare such question bank and display it before joining training.

**PROBABLE QUESTIONS FOR WORK BASED WRITTEN/ORAL EXAMINATION**

**Student Name:**..... **Date:** .....

**Problem statement related to project:** .....

1. Explain selection criteria of project.
2. Explain working of project.
3. Draw layout of your project.
4. List various applications of your project.
5. List difficulties faced while working with project.
6. Explain future expansion work related to project.
7. Identify objectives of your training in Industry / Hospital.
8. Explain the role of Bio-Medical Engineer in Industry / Hospital.
9. List out different departments and explain their working methods / function found in Industry / Hospital.
10. Explain various safety factors needed to be follow in Industry / Hospital.
11. Describe daily working routines during training Industry / Hospital.
12. Identify your involvement in performance of your project?
13. Explain various types of devices and tools used in your project.
14. Explain various types of devices and machines used in industry / hospital.
15. Explain various equipment / machine you repaired or maintained during industry / hospital training. Give steps.
16. List various components used in your project along with their cost.
17. List various software you learned during training. Explain its features.
18. List product manufactured by industry, you visited.
19. Explain standard practices used in maintenance of equipment in medical industry / hospitals.



**Format 14****FORMAT OF INDUSTRIAL TRAINING REPORT****FORMAT FOR TRAINING REPORT (in case of Industry)**

Following is the suggestive format for the training report, actual format may differ slightly depending upon the nature of industry. The training report may contain the following:

- Title page
  - Certificate
  - Abstract
  - Acknowledgement
  - Content Page
- Chapter 1. **Introduction of industry**  
(Type of products and services, history, turn over and number of employees etc.)
- Chapter 2. **Organization Structure**  
(of Industry and General Lay Out)
- Chapter 3. **Major Equipment**  
(Types of instruments/ machines used in industry with their specification, approximate cost and specific use and their routine maintenance)
- Chapter 4. **Production Procedures**  
(including processes along with production planning and control methods).
- Chapter 5. **Testing**  
(of raw materials, components and finished products along with quality assurance procedures).
- Chapter 6. **Major Material Handling Equipment**  
(lifts, cranes, slings, pulleys, jacks, conveyor belts etc.) and material handling procedures).
- Chapter 7. **Safety Procedures**  
(followed and safety gear used including Preventive maintenance schedule and breakdown maintenance procedures).
- Chapter 8. **Anecdotes**  
(some incidents in industry which consolidated some learning outcomes).
- Chapter 9. **Short Report of Industrial Assigned Project**  
(if any given by industry during the training).
- Chapter 10. **Special/Challenging Experiences**  
(encountered during training if any including students liking and disliking of work places).
- References /Bibliography**

**Note:** Training Report has to be submitted in three copies, one for Industry, one for Department and one for student.



**Format 15****FORMAT OF HOSPITAL TRAINING REPORT**

- Title page
- Certificate
- Abstract
- Acknowledgement
- Content Page

- Chapter 3. **Introduction of Hospital**  
(Type of services provided, history, brief about specialties, special type of operations/procedures carried out, and number of employees etc.)
- Chapter 2. **Organization Structure**  
(of Hospital and General Lay Out)
- Chapter 3. **Organisation Chart of Bio Medical Engineering Department**  
(if any, Types of major equipment/instruments/ machines used in hospital.)

**Separate chapters on each major equipment**

(such as CAT, MRI, X Ray, Dialysis, Ventilator, ECG, Oxygen Supply System, and such others) Each chapter should have following details:

- a) approximate cost
- b) specification of equipment specific
- c) uses of the equipment with procedures
- d) Maintenance Schedules
- e) Procedures for troubleshooting
- f) preventive maintenance procedures
- g) Maintenance Procedures (for major breakdowns)
- h) Safety Precautions to be taken during different operations.

- Chapter 8. **Anecdotes**  
(some incidents in hospital which consolidated some learning outcomes Maybe, when using the equipment, servicing of the equipment, preventive maintenance, breakdown maintenance and others)
- Chapter 9. **Short Report of Hospital Assigned Project**  
(if any given by industry during the training).
- Chapter 10. **Special/Challenging Experiences**  
(encountered during training if any, including students liking and disliking of work places).

**References /Bibliography**

**Note:** Training Report has to be submitted in three copies, one for Industry, one for Department and one for student.



