



UNIVERSITY OF MORATUWA

FACULTY OF ENGINEERING

GUIDELINES FOR INDUSTRIAL TRAINING 2021 - 2022

MODULES 3990/ 3992/ 3993/ 3994
[NON - GPA COMPULSORY MODULES]



Prepared by Industrial Training Division

PREFACE

Industrial Training Module, which carries subject code numbers 3990 / 3992 / 3993 /3994, is a compulsory module for all undergraduates of B.Sc. Engineering and B.Sc. Transport & Logistics Degree Programs at the Faculty of Engineering.

This module follows Semester five of the academic calendar.

Undergraduates are strictly advised to read and understand content of this guidelines before the commencement of the training.

Users are encouraged to refer to the web version of this document at <https://uom.lk/training> for the latest updated version of the same.

Eng. Roy Sankaranarayana
Director (Acting), Industrial Training Division,
Faculty of Engineering,
University of Moratuwa.

November 2021

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**Mandatory Reading for
B.Sc. Engineering and B.Sc. Transport & Logistics Management
Degree undergraduates who are undergoing Industrial Training**

01. Introduction

All undergraduates of the Faculty of Engineering are offered internships either in a Government or a Private institution. In special situations students may opt training in establishments overseas, however it should be done with prior approval of the Department concerned and the Director, Industrial Training.

02. Aims and Objectives

The Industrial Training module provides the students of B.Sc. Engineering and B.Sc. Transport & Logistics Management Degree courses at the University of Moratuwa, a valuable opportunity to obtain practical exposure. It is sandwiched in the middle of academic activities of the faculty of Engineering. This compulsory module enables undergraduates to start developing their capabilities to become professional engineers. Expected Program Outcomes and Learning Outcomes of this Module are indicated in sections 2.1 and 2.2 below and in field specific details in ‘**Annex N**’ of this guide.

Industrial placements are made after the completion of Semester 5. The period of internship is determined in conjunction with individual departments and Industrial Training Division (see section 5).

Undergraduates are expected to make optimum use of the opportunities provided by Training establishments, in order to make this a lifelong learning experience. They must acquire all relevant skills and knowledge in each area of exposure. Although every Training Establishment may not be equipped fully to provide a comprehensive training in all areas of interest, it is vital that student put maximum effort to fulfill expected outcomes as much as possible.

2.1 Expected Program Outcomes (As per Washington Accord: See Annex N12)

- **Engineering knowledge:** Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
- **Communication:** Communicate effectively on complex engineering activities with the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
- **The engineer and society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems.
- **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
- **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in, independent and life-long learning in the broadest context of technological change.

- **Environment and sustainability:** Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex engineering problems in societal and environmental contexts.
- **Modern tool usage:** Create, select and apply appropriate techniques, resources and modern engineering and IT tools, including prediction and modelling, to complex engineering problems, with an understanding of the limitations.
- **Project management and finance:** Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work as a member and leader in a team, to manage projects and in multi-disciplinary environments.
- **Problem analysis:** Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
- **Design/ development of solutions:** Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health, and safety, cultural, societal and environmental considerations.
- **Investigation:** Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

Note: Washington Accord has been revised on September 2021 and the new graduate attribute profiles or program outcomes are shown in Annex N13, which is yet to take effect in our curriculum.

2.2 Expected General Learning Outcomes

- **Describe** organizational structure and its functionalities:
- **Understand** technical and relevant soft skills:
- **Recognize** responsibilities and accountability of professionals:
- **Describe** Health, Safety and Environment practices at work place:
- **Demonstrate** the understanding of Sustainability

In addition to above mentioned general learning outcomes, the undergraduate is requested to refer field specific learning outcomes in the Annex N of this guide.

An understanding is essentially required how Learning Outcomes are mapped together with Program Outcomes. It is vital that the undergraduate should choose a training place to achieve above outcomes.

Furthermore, at the beginning of the training, the trainee should work with his or her supervisor assigned, to prepare a structured training program with realistic schedule in order to achieve as much as possible above outcomes. Here more emphasis is required to the mapped points of Expected Outcomes (Learning and Program).

If the training establishment is unable to provide or prepare a structured training program for the student, the student must seek help from Senior Lecturer / Consultant of Industrial Training Division and/or Departmental Senior Lecturer Coordinating Industrial Training.

After the satisfactory completion of the industrial training module, undergraduates will be eligible for up to six (06) Non-GPA credits.

03. Advantages

Internship at a training establishment also offers the following benefits:

- Exposure to industry
- Application of theories of science of engineering in industrial environments
- Enhancement of already existing knowledge and skills
- Acquisition of new knowledge and skills
- Networking with all hierarchical levels
- Engage in design with industrial requirements
- Earning Recognition
- Opportunity to identify own strengths and weaknesses
- Bringing back learnings, towards subsequent academic work
- Opening up opportunities for career development

04. Eligibility

Semester five (5) undergraduates of the Faculty of Engineering can register for their respective Industrial Training Module via online registration process. Repeaters of the Industrial Training Module are required to submit their application online to **Director Undergraduate Studies** with recommendations from their respective department and Industrial Training Division.

05. Duration of Training & Deadlines

The compulsory period of Industrial Training will vary according to individual field of study.

Towards the end of the period, a deadline to submit the final training report to the Industrial Training Division will be notified. Unless prior approval of the Director, Industrial Training is obtained for delayed submissions, reports will be treated separately under ‘Late Reports’ category and may affect final results.

Department wise Course Codes & Industrial Training Durations

Department	Course Code	Duration (Weeks)
BM	BM 3991	24
CE	CE 3992	16 to 20
CH	CH 3993	
CS	CS 3992	
EE	EE 3993	
EN	EN 3992	
ER	ER 3992	
ME	ME 3992	
MT	MT 3992	
TT	TT 3992	
TLM	TL 3994	

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06. Placement for Training

6.1 Notification of Placement

Placement of Engineering Undergraduates is carried out by Industrial Training Division in collaboration with the respective Departments of University of Moratuwa and National Apprentice and Industrial Training Authority (NAITA).

The undergraduates are required to use the **Option Form (Annex A)**, to express their choice of Training Establishments indicating the order of preference. The form should be forwarded to the Industrial Training Division by the deadline set by the Director, Industrial Training. The Industrial Training Division will as far as practically possible, try to accommodate such preferences.

6.2 Notification after reporting to the Training Establishment

Within a week after reporting to training establishment, all undergraduates shall send the worksite details to NAITA through completed **Annex B** by post.

A scanned copy/image of the completed Annex B should be sent via e-mail to:

- Respective Senior Lecturer / Consultant of Industrial Training Division
- Respective Training Coordinator of the Academic Department,

Respective coordinator phone numbers and e-mails are provided in **Annex M**.

Any subsequent change of training establishment after the initial placement is **not recommended**. Such changes will be entertained only in unavoidable circumstances. Requests for such changes must always be coordinated with training coordinators of the respective Academic Department and the Industrial Training Division. If changed, particulars of the new place should be similarly notified to NAITA & University within a week of reporting.

07. Responsibilities of Training Employers and Undergraduates

7.1 Training Contract

- a. A contract of apprenticeship known as '**Training Contract**' shall be signed between the Training Employer and the undergraduate,

And

- b. The signed contract shall be sent to National Apprentice and Industrial Training Authority (NAITA) by post for registration.

The terms and condition of the Training Contract (Annex. C), shall be mutually acceptable to the Undergraduate and the Training Employer prior to the commencement of training.

In addition to those prescribed in the National Apprenticeship Act., and Regulations stipulated in the Training Contract, the following would be the responsibilities of the Training Employer and the Undergraduate.

7.2 Training Employers

- a. Read and understand Program & Learning Outcomes as at clauses 2.1, 2.2 of this document and Field specific Program and Learning Outcomes (Refer **Annex N** of this guideline).
- b. A supervisor/s has to be appointed by the training establishment to evaluate undergraduates' progress, monitor proper maintenance of progress reports, ensure such records are submitted for inspection by the academic staff of the University of Moratuwa and authorized personnel of NAITA.
- c. Provision of appropriate training facilities, equipment and other materials, instructions by competent personnel and imparting work experience on undergraduates to acquire skills, knowledge and attitudes required to become successful professionals in future.
- d. Preparation of a training program and a schedule after discussion with the undergraduate at the beginning of the training session (preferably within first two weeks) and guide the undergraduate along the course.
- e. Rotation of undergraduates among different departments /sections in accordance with a pre-planned schedule to ensure that they acquire maximum possible experience.
- f. To support and facilitate the undergraduate to conduct collaborative online progress monitoring sessions.
- g. Refrain from releasing undergraduates for activities other than training without authorization by Industrial Training Division of University of Moratuwa.
- h. Ensure work assigned to the Undergraduate could be **safely** and satisfactorily performed, with available resources.

7.3 Undergraduates:

- a. Read and understand Program and Learning Outcomes as in 2.1, 2.2 and field specific Program and Learning Outcomes (Refer **Annex N** of this guideline).
- b. **Strictly advised to ensure own safety at all times during the period of training.** Hence undergraduates are required to read, clarify and understand, training provider's safety procedures before beginning any work of their training.
- c. Ensure receiving of a **structured training program** (in par with above 'a') with a realistic schedule within four weeks of the start of training.
- d. Compliance with Training Providers' rules, regulations and instructions related to procedures, working time duration and conditions of work, personal conduct and all other matters which do not contravene the provisions of the National Apprenticeship Act and Regulations.
- e. Performance of work assigned, with due diligence to facilities, equipment, tools & machinery, supplies & materials, raw materials & products, time & costs and work practices, maintaining cordial relationships with all levels of staff.

- f. Regular attendance and achieving anticipated progress, maintenance of prescribed training diaries and other records and produce of such records for inspection and verification by authorized officials appointed by the Training Employers, University of Moratuwa and NAITA.
- g. May request additional areas of training beyond those identified by the training employer in accordance with program and learning outcomes.

08. Training Modules

General Training Modules for different fields of Engineering could be provided upon request. Furthermore, Training Modules are continuously reviewed and revised appropriately to meet prevailing demands/ needs from industry and accreditation bodies.

09. Continuous Assessment

Assessment during the training period will be based on:

- Four Weekly continuous Assessment Reports (consisting of maximum two pages of report in addition to the completed **Annex D**)
- Four Weekly Expected Outcomes Follow-up Report (**Annex E**)
- Industrial Training Monitoring Reports (**Annex G**).
- Entries by authorized officers in the Daily Diary.

Note:

Trainees at regular intervals (once per every four weeks) should complete and upload their **Four-Weekly Continuous Assessment Reports (Annex D)**, **Learning Outcomes and Program Outcomes Follow-up Report (Annex E)**, **to Moodle under the ‘Assignments’ within allowed time**. In addition, hard copy of the same to be submitted along with the final report. Late submissions will result in deduction of marks at the assessment. The report must carry signature and the seal of the supervisor.

It is the responsibility of the trainee to ensure the proper compilation and timely delivery of such Continuous Assessment Reports.

10. Daily Diary

Trainees should maintain the Daily Diary provided by NAITA with **brief descriptions of daily activities and/or involvements, observations, etc.**, of the trainee.

Updated Daily Diary should be available at all times as a reference for the visiting officials to monitor and evaluate training. Daily Diary will be assessed during these visits and at the final assessment. The information documented in the **Daily Diary must be described in detail in the Training Report**.

During each visit by such officials, they may record their comments in the ‘Inspection Report’ cage provided in the Daily Diary. It is also the duty of the undergraduate to ensure that the visiting official should make such a remark in the diary.

Similarly, at the end of the training, the Trainee must obtain comments and signature/s from the training supervisor/s in the Daily Diary.

11. Conduct at the Training Establishment

- University of Moratuwa considers **Health and Safety of the Undergraduate is of utmost importance**. Therefore undergraduates who undergo Industrial Training should fully comply with the Training Provider's Health, Safety, Environment & Security practices.
- Undergraduates are required to demonstrate ethical behavior at all times.
- Undergraduates are required to respect all genders equally and also multicultural & multi-religious values.

12. Attendance /Leave during Training

Undergraduates may apply for one day of casual leave and half a day of medical leave for each month of training completed. The Undergraduate should earn this leave by successful completion of the previous month of training. Undergraduates shall **note that such leave is not an entitled privilege and should be enjoyed only after obtaining the due approval, which would be at the sole discretion of the Training Employer.**

Applications for leave should be submitted for approval to the officer in charge of the Training Establishment and in addition to the above arrangements with the Training Establishment, the Undergraduate should submit a duly perfected **Leave Advice Form (Refer Annex F for format)**, to the respective Industrial Training Division Coordinator and Academic Department's Training Coordinator of the University of Moratuwa **when leave availed is in excess of one week.**

Any additional leave required to sit for Examinations and other purposes including Medical Leave should be covered by working on holidays/weekends or during extended training period. Prior approval for such leave should be obtained from the Training Employer.

Undergraduates receiving Mahapola or other Scholarships / Bursary stipends are required to send their attendance records certified by the Training Establishment on company letter-head to the Director, Industrial Training. Scanned copy may be emailed to avoid possible delay of the original.

13. Training Inspections

Undergraduates who undergo Industrial Training will be visited during their periods of training by:

- a. Officers attached to the Training Establishment of the employer
- b. Senior Lecturer / Consultants of the Industrial Training Division
- c. Academic Staff Members of the relevant Department of Faculty of Engineering
- d. Training Inspectors of the NAITA

Updated Daily Diary & the Structured Training Program prepared should be available with the trainee at any time for visiting officer's reference.

These visits are to ensure that the Undergraduate performs satisfactorily and that the training received is appropriate to the expected outcomes of the Industrial Training module. If not, the visiting official will discuss the matter with the training supervisor with a view to improve. The visiting official may discuss the Training Schedule and how it relates to expected outcomes.

Annex G is a specimen of the form that would be used by such visiting personnel to report the progress of the Undergraduate to the Industrial Training Division of the University of Moratuwa.

14. Training Reports

Upon completion of the training, all undergraduates must prepare and submit a comprehensive report on the Industrial Training received.

The Industrial Training Reports should embody details of the Training Establishment, information on the training received and a critical appraisal of the training programme.

Training Reports must be word processed, printed with cover page (**Annex J**) in specified color (refer soft copy of this guide in Moodle and University of Moratuwa website for color).

Softcopy of the training report should be uploaded to Moodle on or before the specified deadline along with the submission of the hard copy.

Further instructions for preparing the training report are provided in **Annex H**.

15. Assessment of Undergraduate Performance

Undergraduates will be assessed during and after completion of their training period.

The assessments are done in order to obtain evidence for a successful training session and then to provide feedback on the areas of improvement.

Assessment will be as follows:

- a. Report on Industrial Training 30%
- b. Continuous Assessment (see Section 9) 30%
- c. Presentation* and Oral Examination 40%

*A presentation of five to ten minutes (with an average of 10 slides) is required to be made for this purpose.

The assessment panel generally comprises of:

- a. An Academic Staff Member / Consultant of the Industrial Training Division of the Engineering Faculty (mandatory)
- b. A Departmental Academic Staff Member from the Engineering Faculty (mandatory)
- c. A Representative from the relevant Training Establishment.
- d. A Representative from the National Apprentice and Industrial Training Authority (NAITA).

All efforts would be taken to constitute the above panel with well qualified professionals.

To facilitate the members of the assessment panel, the **following documents must be available** in the Training Division **at least two weeks** before the date of assessment or by the stipulated deadline announced by the Director, Industrial Training.

- a. Report on Industrial Training: (refer **Annex H**)
 - b. Daily Diary
 - c. Four-Weekly Continuous Assessment Reports (refer **Annex D**)
 - d. Expected Outcomes follow-up Report: (refer **Annex E**)
 - e. Feed Back Forms 1, 2 & 3: (refer **Annex K-1, K-2 & K-3** respectively)
- Note: Candidates with completed Feedback Forms will only be called for Final Assessment.*

To be successful at the Assessment, an undergraduate must obtain a total score not less than 50 marks while scoring not less than 15 marks for the Training Report and not less than 20 marks for the presentation and oral examination.

16. Training Awards

Names of high achievers in Industrial Training will be submitted to the Institution of Engineers. Sri Lanka (IESL) annually for the Migara Ranatunga Trust Awards that are expected to be awarded at the Annual Sessions of IESL.

17. Exceptional Training Reports

Copies of training reports judged exceptionally good would be retained with the Industrial Training Division of the University of Moratuwa. Authors of such reports will also be specially commended.

18. Repeat Training

Undergraduates unsuccessful at the Final Assessment will be required to repeat the Industrial Training for a further stipulated period and subject to a re-assessment.

19. Training Certificates

On successful completion of Industrial Training an undergraduate may request a Certificate for Industrial Training. Applications for a Training Certificate should be forwarded as specified in **(Annex. L)**. Once the Examination results are approved by the Senate, Certificate for Industrial Training can be issued on or before oral examination.

20. Absence from Training

Undergraduates who abstain from the training and unable to provide a valid reason would be reported to the Senate through the Faculty with the possible consequences of:

- a. The undergraduate shall not be granted awards or bursaries for the abstaining period of training.
- b. The undergraduate shall not be awarded any grading leading to a pass at the final training assessment.
- c. The undergraduate shall commence subsequent training on the date specified by the Industrial Training Division in consultation with the relevant Departments.

- d. Results of such Undergraduates may be released with those of the subsequent batch.
- e. The undergraduate may not receive any stipend / allowance.

21. Notices & Instructions to Undergraduates

Notices & Instructions concerning Undergraduate Industrial Training are displayed on the Notice Board at the Industrial Training Division and will also be posted in Industrial Training Division's web space. Furthermore, such Notices & Instructions will also be communicated to the Training Coordinators of the relevant Academic Departments by Industrial Training Division via email.

22. Communications during Training

All communications regarding Industrial Training shall be in writing indicating the name of the Undergraduate, Index number, Address, Identity details mobile, e-mail etc. Such communications should be addressed to the Director, Industrial Training Division of the University of Moratuwa with copy to Senior Lecturer / Consultant of Industrial Training Division and/or Departmental Senior Lecturer Coordinating Industrial Training.

Correspondence with the National Apprentice and Industrial Training Authority (NAITA) should be **channeled through the Industrial Training Division, Faculty of Engineering, University of Moratuwa**, except where specified in this Guideline.

23. Accommodation during Training

Undergraduates are expected to find suitable accommodation when assigned to Training Establishments located remotely from their places of residence.

24. Contact Personnel

All Undergraduates are encouraged to be in contact with the Senior Lecturer / Consultant of Industrial Training Division and/or Departmental Senior Lecturer Coordinating Industrial Training during their training period in situations where they encounter problems related to Industrial Training. They may also contact other members of the academic staff of the University of Moratuwa. Relevant Names, Address, and Telephone numbers of such personnel are given in **Annex. M.**

Note:

In addition to the guidelines provided in this guide, undergraduates are required to adhere to the instructions provided during induction sessions conducted by the Industrial Training Division, prior to the commencement of training.

OPTION FORM

**INDUSTRIAL TRAINING FOR ENGINEERING UNDERGRADUATES
UNIVERSITY OF MORATUWA**

Year

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
----------------------	----------------------	----------------------	----------------------

Field of Engineering :

BM	CH	CE	CS	EE	EN	MT	ME	ER	TT	TL
<input type="text"/>										

Full Name (Mr. /Miss./Mrs.) :

(Underline the Surname) :

Student Registration No. :

<input type="text"/>							
----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Module Registration No. :

Permanent Address:

.....
.....

Email Address:

Mobile Phone No.:

Preference for Industrial Training - (Names of Establishments in the order of preference)

1.
2.
3.
4.

D	D	/	M	M	/	Y	Y	Y	Y
---	---	---	---	---	---	---	---	---	---

.....

Date

Signature

Annex. B

Date:

		/			/				
--	--	---	--	--	---	--	--	--	--

**Deputy Director (Special Industrial Training and Evaluation),
National Apprentice and Industrial Training Authority,
971 Sri Jayawardanapura Mawatha,
Welikada, Rajagiriya.**

Particulars of Work Site/Residential Address during Training

This form should be completed and hard copy to be returned by post to NAITA with a copy to Director, Industrial Training Division of University of Moratuwa on commencement of apprenticeship and also when any change in these particulars occurs thereafter.

A softcopy should be emailed to respective Senior Lecturer / Consultant of Industrial Training Division and/or Departmental Senior Lecturer Coordinating Industrial Training.

This has to be posted & E-mailed within one week of particulars coming into effect.

1. Name of Undergraduate :
.....
2. Postal Address during Training period :
1. Mobile Phone Number & e-mail address :
2. Name of Establishment :
- 4.1 Address of Work Site :
.....
3. Name of Officer In-charge of Training :
 - 5.1 Designation :
 - 5.2 Contact Mobile / Phone :
 - 5.3 E-mail :
4. Date when particulars came into effect:

D	D	/	M	M	/	Y	Y	Y	Y
---	---	---	---	---	---	---	---	---	---
7. Field :

BM	CH	CE	CS	EE	EN	BE	MT	ME	ER	TT	TL

.....
Signature of Undergraduate

.....
Signature of Site Officer
(Supervising Training)

.....
Company Seal

Annex. C

National Apprentice and Industrial Training Authority,
971, Sri Jayawardanapura Road,
Welikada, Rajagiriya.

TRAINING CONTRACT

(Under the provisions of Section 65 of the
Act No.20 of 1990)

This Contract is approved and entered in
the Register of Training Contracts under
Territory and Vocational Education Act,
No.20 of 1990

No:	Stamp
On:	Signature

(Notes on the Training Contract)

The Training Employer will be registered on the register of training contracts at the National Apprentice and Industrial Training Authority immediately after registration or prior to the commencement of training whichever is the earliest. All copies of this contract must be appended. The same applies to amendments to the provisions of this contract by reason of extension of training periods, termination or any such matter. All such amendments to this contract shall be permissible only after prior approval is granted by NAITA. It is the responsibility of the training employer to hand over a duly certified copy of this contract after obtaining registration at NAITA.

The Training Employer is required to inform NAITA whenever the Trainee has been absorbed into regular employment in his establishment.

B E T W E E N

The Training Employer

Name of the Firm
Address
Tele: No

AND

The Trainee

Name in Full	In Sinhala	
	In English	
Address		
Date of Birth		

N.I.C. No. _____ Male/ Female

WHEREAS the Training Employer has agreed to engage the Trainee for the purpose of providing INITIAL TRAINING/FURTHER TRAINING/RE-TRAINING in the TRAINEE OCCUPATION OF AND WHEREAS the said Trainee Employer and Trainee have agreed to abide by the provisions of Tertiary and Vocational Education Act No.20 of 1990 and the regulations made there under which govern such training in Sri Lanka.

The following contract is hereby entered into between the aforesaid Training Employer and the Trainee:

A. The duration of training according to the Training Order recognised under Act. No.20 of 1990 shall be a period of:months/years. From To	F. The Training Employer shall pay the Trainee a suitable gross allowance of Rs..... per month or such sum as may be determined from time to time by the National Apprentice and Industrial Training Authority
B. The training shall take place in and other work place usually associated with the headquarters of the Firm.	G. The Training Employer shall ensure that skills and knowledge are imparted to the Trainee in accordance with the training objectives laid down in the Training Order and that the relevant subject matter is covered and the training objectives are achieved within the stipulated training duration
C. The regular weekly training hours shall be 45 ½ hours.	H. The Training Employer shall impart the training himself if suitably qualified, or through other suitably qualified employees in his establishment.
D. The nature, content and syllabus for training, during the entire period of training shall substantially conform to the Training order provided for such Trainee occupation	I. The Training Employer shall provide the Trainee with a copy of the Training Order at the commencement of training.
E. The probation period shall be three months for Training courses of duration up to two years, and six months for training courses of duration of more than two years	J. The Training employer shall provide the trainee with training aids and equipment and in particular training tools, consumable and literature necessary for training in the establishment and shall also provide the trainee all the facilities required by the trainee to sit the examinations and National Trade Tests conducted by the National Apprentice and Industrial Training Authority in the Trainee occupation, such trainee is undergoing training.

Continued Overleaf

K. The Training employer shall ensure that the trainee attends all other training programmes to be followed outside the establishment as specified under the Training order.	R. The trainee shall observe strictly the rules and regulations of the establishment/training employer.
L. The training employer shall allot the trainee only with such work as serves the purpose of the training and is in keeping with the physical abilities and constitution of the trainee	S. The trainee shall treat tools, machinery and other Equipment installations with due care and only use them for the purpose which they are intended.
M. The Training employer shall ensure that the trainee's Character is developed and not exposed to moral or physical hazards.	T. The trainee shall keep all books of records issued for the purpose of training in proper order and duly entered and submit same for regular inspection by the employer and the inspector of NAITA.
N. The training employer shall also grant all the necessary leave of absence to the trainee to follow training programmes or sit for examinations and Tests referred to in clauses J & K above.	U. The trainee shall observe the business and trade secrets of the training employer.
O. The Trainee shall make every effort to acquire the skills and knowledge to achieve the training objective as envisaged under the Training Order.	V. The trainee shall notify the training employer immediately of absence due to sickness, accident or other reason, and submit medical certificates if necessary.
P. The trainee shall carry out with due care the work assigned by the training employer during the course of training.	W. The trainee shall be entitled to fourteen days of casual leave and seven days of medical leave. However, if the training period is less than one year the above leave entitlement shall apply on a proportionate basis.
Q. The trainee shall adhere to all directions issued as part of training by the training employer the trainer or any other authorised person.	

GENERAL:

It is also hereby agreed between the training employer and the Trainee that the following general rules apply during the period of this contract:

- (a) That the Trainee shall be covered by the Workmen's Compensation Ordinance and the Factories Ordinance;
- (b) Where the training contract of a Trainee is terminated after the completion of the probationary period through the failure of the Training Employer to carry out the terms and conditions of this contract, he shall pay to the Trainee, compensation, the quantum of which shall be determined by the NAITA and where this contract is terminated after the completion of the probationary period through the failure of the Trainee to carry out the terms and conditions, of the contract, he or his legal representative shall pay to the employer, compensation, the quantum of which shall be determined by the NAITA. All procedure to be followed in this regard shall strictly be in accordance with the provisions set out in Act No.20 of 1990 and regulations made thereunder.
- (c) That any disputes arising between parties to this contract related to training shall be referred to the Chairman, NAITA for arbitration. The decision of the Chairman, NAITA shall be final.
- (d) The Trainee shall be considered as a 'workman' as defined under the Industrial Disputes Act.

.....
Sig. of Training Employer

.....
Sig. of Trainee/parent or guardian

Name

Name

Address
(Company Seal)

Address

On this day of

Witness for employer

Witness for Trainee

.....
Signature

.....
Signature

Name

Name

Address

Address

Annex. D**FOUR - WEEKLY CONTINUOUS ASSESSMENT REPORT**

(Please Refer Section 9, page 5 of Training Guideline Book for details)

#	Report Details									
1	Report Number	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>			
2	For the Duration	From	DD	MM	YY	To	DD	MM	YY	

#	Undergraduate's Details											
1	Name as per Register	Mr. / Ms.										
2	Index Number											
3	Discipline	BM <input type="checkbox"/>	CH <input type="checkbox"/>	CE <input type="checkbox"/>	CS <input type="checkbox"/>	EE <input type="checkbox"/>	EN <input type="checkbox"/>	ER <input type="checkbox"/>	ME <input type="checkbox"/>	MT <input type="checkbox"/>	TL <input type="checkbox"/>	TT <input type="checkbox"/>
4	Contact Phone Number											
5	Email											
6	Personal Address During											

#	Training Provider Details											
1	Training Provider's Name											
2	Address of Corporate Office											
3	Address of Worksite											
4	Nearest City to Worksite											
5	Name of Supervisor											
6	Supervisor Position											
7	Supervisor Phone No.											
8	Email											

Important Note!											
A summary of undergraduate's work experience during the considered four (04) weeks period to be attached along with this duly filled Annex. Highlight any shortcomings, problems that the undergraduate experienced, if there were any, for the purpose of improving. Finally, make sure to attach completed assessment by the Supervisor (see overleaf).											

Endorsement by the Undergraduate			
Signature of Undergraduate		Date	

Annex. D (contd.)

Supervisor's Assessment on Undergraduate						
[rate on a scale from 1 (Disagree) to 5 (Agree)]						
A	Behavioral:	1	2	3	4	5
1	Thinks independently	<input type="checkbox"/>				
2	Takes initiatives	<input type="checkbox"/>				
3	Reliable	<input type="checkbox"/>				
4	Organized and manages time well	<input type="checkbox"/>				
5	Results oriented	<input type="checkbox"/>				
6	Ability to learn from all levels of workers	<input type="checkbox"/>				
7	Adaptability to different environments	<input type="checkbox"/>				
8	Open to different opinions	<input type="checkbox"/>				
9	Ready to seek assistance when necessary	<input type="checkbox"/>				
10	Communicates well in all formats	<input type="checkbox"/>				
B	Technical:	1	2	3	4	5
1	Knows fundamentals related to work assigned	<input type="checkbox"/>				
2	Able to apply fundamentals to practice	<input type="checkbox"/>				
3	Able to analyse and troubleshoot problems	<input type="checkbox"/>				
4	Engages modern tools and techniques	<input type="checkbox"/>				
5	Develops related hands on skills	<input type="checkbox"/>				
6	Concerned with quality	<input type="checkbox"/>				
7	Performs work in a safe manner	<input type="checkbox"/>				
8	Develops skills in planning & implementation	<input type="checkbox"/>				
9	Understands costs & benefits relationships	<input type="checkbox"/>				
10	Understands business operations in local & global context	<input type="checkbox"/>				
C	Any Other Remark:					
D	No. of Days of leave during 4-week period:	Authorized		Unauthorized		
E	Endorsement by the Supervisor:					
1	Name of the Supervisor			Official Stamp		
2	Position					
3	Signature					
4	Date					

Annex. E

FOUR WEEKLY EXPECTED OUTCOMES FOLLOW-UP REPORT (Sample)
(Prepare a follow-up table considering all POs and LOs as follows – use multiple pages)

#	PO Ref	LO Ref		Structured Training Program Items	Activity Carried Out Under <i>(You may generate a list of activities carried out and the list number can be mentioned here. A single activity can be considered for more than one learning outcome achievement)</i>
		No.	Scale (H,L,M or N/A)		
1	PO1 <i>(e.g. Engineering knowledge)</i>	LO _i	e.g. H	e.g. Familiarization on Rotating Equipment	<i>Rotary blower parts identification</i> <i>Pump failure pattern Study</i> <i>Centrifugal compressor performance assessment</i>
				
				
		LO _n			

E.g. $LO_i = \text{"Apply knowledge and principles of Science and Engineering"}$.

Undergraduate				Supervisor	
Name				Name	
Student ID		Field		Position	
Signature				Signature	
Date				Date	

LEAVE ADVICE FORM
(When leave in excess of one week)

(Completed form to be sent by e-mail to the respective Senior Lecturer / Consultant of Industrial Training Division and/or Departmental Senior Lecturer Coordinating Industrial Training, University of Moratuwa. In addition, hard copy of the same to be sent to Director, Industrial Training, Faculty of Engineering, University of Moratuwa)

1. Name of Undergraduate : _____
2. (a) Training Stage ⁽¹⁾ : Semester 6 / Repeat
- (b) Field ⁽¹⁾ :

BM	CH	CE	CS	EE	EN	MT	ME	ER	TT	TLM
----	----	----	----	----	----	----	----	----	----	-----

3. Establishment attached to :

4. Exact place of work :

5. Leave already taken during current training period:

--	--

5. Number of days leave applied for:

Leave

Casual	Sick
--------	------

		/			/				
--	--	---	--	--	---	--	--	--	--

From

		/			/				
--	--	---	--	--	---	--	--	--	--

To

6. Has the leave been granted by the Establishment ⁽¹⁾

Yes	No
-----	----

⁽¹⁾ - Delete what is not applicable

		/			/				
--	--	---	--	--	---	--	--	--	--

Date

.....
(Signature of Undergraduate)

This form is solely for the information of the University Staff who are expected to visit the Training Establishments for training inspections. It does not replace the standard leave application form and procedures of the Training Establishment to which the Undergraduate needs to adhere.

INDUSTRIAL TRAINING MONITORING REPORT

01. Name of Undergraduate (Please write the Surname with Initials)										Index No:			
02. Field of Specialisation ⁽¹⁾		BM	CH	CE	CS	EE	E	MT	ME	ER	TT	TLM	
03. Training Establishment													
04. Place of Training													
05. Undergraduate's attendance on the day of supervision ⁽¹⁾		Present/Absent/ Site Work		If Absent									
				Authorised				Unauthorised					
06. Comments													
06.1	Availability of a Structured Training Program:		Yes	No	Yes; need to be modified <i>State proposed course of action in 12 below</i>								
06.2	Initiative to acquire knowledge & Skills:												
06.3	Demonstrated abilities to contribute towards Industry:												
06.4	Projects assigned:												
06.5	Association with company staff & participation in social activities:												
06.6	Degree of satisfaction of undergraduate on training received:												
06.7	Trainee's opinion on Training Duration:	 Weeks										
07. Diary													
07.1	Availability of Diary for inspection ⁽¹⁾			Available				Not Available					
07.2	Entries made are ⁽¹⁾			Up to date				Not up to date					
07.3	Quality of notes made in the Diary ⁽¹⁾			V. Good	Good	Fair	Poor						
07.4	Quality of sketches diagrams and figures drawn in the Diary ⁽¹⁾			V. Good	Good	Fair	Poor						
07.5	Undergraduate's knowledge about the entries made ⁽¹⁾			V. Good	Good	Fair	Poor						
08. Has the Undergraduate read and understood Learning Outcomes and Program Outcomes?													
Yes / No													

Annex G. (Contd.)

9. Opinion of the Training Supervisor of the Establishment on:				
9.1	Whether the Learning Outcomes specified are achievable?	Yes	No	Comment in 9.4 below
9.2	Undergraduate's ability to benefit from Training ⁽¹⁾	Very Good	Good	Fair
9.3	Whether Industrial Training Program Outcomes are beneficial to the industry ⁽¹⁾	Yes	No	Comment in 9.4 below
9.4 Comments:				
10. Any specific problems faced by Training Supervisor or Trainee. ⁽²⁾				
11. Coverage of overall outcomes		Sufficient	Insufficient	
12. Any other observation and comment on 06.1 above ⁽²⁾				
13. Name of staff member				
14. Signature				
15. Date of visit		/	/	/

⁽¹⁾ Delete what is not applicable,

⁽²⁾ Use a separate sheet of paper if space provided is not sufficient

Note:

- This completed form should reach Industrial Training Division at least **within five (5) working days, of inspection.**
- If any of the members of the Academic Departments feels that the received training by the undergraduate **is not in line with expected outcomes**, they should immediately inform respective coordinators of the Industrial Training Division and the Academic Department.

Annex. H**INSTRUCTIONS FOR WRITING THE TRAINING REPORT**

The undergraduate is kindly requested to adhere to the following format & structure in preparing the report. Hence please check each item below has been fulfilled before submitting the report.

Format:

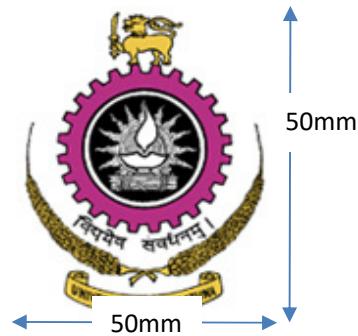
#	Parameter	Guide			
1	Size of Paper	A4			
2	Number of Pages	40 Preferred: 50 Maximum			
3	Font	Times New Roman, Size 12			
4	Line Spacing	1.5			
5	Paragraph Spacing & Text	3 & Fully Justified (both sides)			
6	Margins	25 mm on all sides			
7	Labeling	Tables at the top and figures at the bottom			
8	If printed on Paper	Print on Both Sides of the Paper			
9	If on Soft Format	PDF			
10	Cover Page Color Schemes	BM – White	CE – Yellow	CH – Green	
		CS – Orange	EE – Pale Yellow	EN – Light Pink	
		ER – Purple	ME – Grey	MT – Blue	
		TLM – Red	TT – Pink		

Structure:

#	Item	Guide
1	Cover	As per annex I
2	Preface	A brief account of the report
3	Acknowledgement	Appreciation of those who helped in the internship process
4	Table of Contents	Three header levels (e.g. 2.7.1) are adequate
5	List of Abbreviations	Descriptions of Abbreviations used
6	List of Figures	Figures (including charts) Numbered as per the Chapter
7	List of Tables	Tables Numbered as per the Chapter
8	Core Content (Start each chapter with a fresh page)	Main purpose of this section is to write an account on the activities which the undergraduate has engaged, in order to achieve the expected outcomes. The content should reflect on these expected outcomes paying attention to the relevant mapping of the learning outcomes as provided in the Annexure E of this guide. A very brief guide, under which you may categorize your activities, is mentioned below: <ul style="list-style-type: none">• Description of the organization and business, its past, present and future• Description of familiarization work carried out• Exposure to systems (HSE, Financial, Administration, Logistics, etc..)• Project Work• Hands on experiences• Soft Skills Development• SWOT Analysis of the organization and self.• Conclusion: Own perspective of areas to be improved (of the whole training process including self).
		Include detailed work or supplementary materials related to training experience.
9	Annexes	List of resources used in writing the report.

(Training Report Cover Page Format)
UNIVERSITY OF MORATUWA

Faculty of Engineering



Registered Module No: *[Module Code]*

INDUSTRIAL TRAINING REPORT

[Company Name]

From: *[DD/ MM / YYYY]* To *[DD / MM / YYYY]*

Date of Submission:
[DD/ MM / YYYY]

[Undergraduate's Name]

[Index Number]

Department of: *[Department Name]*

Feed Back Form - 1
EVALUATION OF TRAINING ESTABLISHMENT

- Index No. of Undergraduate :
- Name of Training Organization :
- Head Office Address :
- Training Location (site) :
- Name(s) of Supervisor(s)
(Include designation) :
- Period of Training :to..... : weeks

Provide an independent assessment using only one of the choices below;
Poor / Satisfactory / Good / Excellent

1. Quality of the Preliminary introduction to organization:
2. Quality of Structured Training Program prepared:
3. Effectiveness of the rotation of duties to gain a variety of experiences:

Task / Activity	Period in Weeks	Degree of Satisfaction				
		Disagree	Neutral	Agree	Not Applicable	

4. (a) Nature of assignments: Interesting / Relevant / Suitable / Not Relevant

(b) If your answer is ‘Not Relevant’ reasons and recommendations:

5. Were work assignments to expectations: Yes / No
6. Participation at meetings : Yes / No
7. Remuneration paid by the training institution: Rs. / per month
8. Indirect Support by the training institution:
(Accommodation, Meals, Transport etc.)
9. Opportunities available for innovations: Yes / No
10. Internship under top level or Senior Management Staff: Yes/No
11. Exposure to Labor Management: Yes/No
12. Exposure to Plant & Equipment: Yes/No
13. Exposure to Design Work: Yes/No
Degree of Satisfaction: Disagree Neutral Agree Not Applicable
1 2 3 4 5 N/A
14. Access to Data, Drawings & other Documentation : Yes/No
Degree of Satisfaction: Disagree Neutral Agree Not Applicable
1 2 3 4 5 N/A
15. Quality Control and Safety Procedures/Practices : Yes/No
Degree of Satisfaction: Disagree Neutral Agree Not Applicable
1 2 3 4 5 N/A
16. Exposure to field specific Software usage: Yes/No
17. Availability of Engineering Literature : Yes/No
18. Access to Internet : Yes/No
19. Recommendation of Institution for future Interns : Yes/No
20. Any other comments :

Feed Back Form - 2
SELF EVALUATION

1. General Information

(a) Index No. of the Undergraduate:

(b) Name of Institution :

(c) Training Location :
(Address)

(d) Brief description of work and responsibilities assigned:

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

(e) Average Working Hours:

(f) Organization Chart: (To be attached indicating your position):

(g) Name and Designation of the Officer to whom the trainee was attached:
.....

(h) Suggested Timing for external supervision :

Industrial Training Staff Department Staff	Month					
	1 st	2 nd	3 rd	4 th	5 th	6 th
	1 st	2 nd	3 rd	4 th	5 th	6 th

**2. Description of fulfilling Expected Outcomes
(Elaborating on the critical points of the mapped Outcomes):**

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

(a) Skills acquired on the use of special equipment/ Instruments etc.:

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

(b) Benefits gained by Interaction with other Organizations:

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

3. Innovative Skills

(a) Describe any innovative actions taken during (e.g. New ideas or concepts introduced by you, your proposals to change or modify the plans and designs, etc.)

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

(b) What was the Organization's response to 3(a) above? :

.....
.....

(c) Describe any failures/ mishaps/ mistakes observed and the remedial measures taken

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

(d) What were the technical problems encountered and how these were overcome?

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

4. Management Skills

(a) Exposure to managerial processes of the organization:

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

(b) Understanding on various Management Practices of the organization

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

(c) Any Specific example of a management practice as mentioned in above (b):

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

(d) List the supplementary reading material, hand books, etc. used during this period?

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

5. Any Other Comments/Remarks

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

Feed Back Form - 3
EVALUATION OF INDUSTRIAL TRAINING MODULE (ENG. FACULTY, UOM)
BY TRAINING PROVIDER

Note: The idea behind this feedback is purely for systems improvement. Hence feel free to express your honest opinion. All such feedbacks will be consolidated, reviewed and considered for appropriate changes in the next cycle; affecting a continual development. The Industrial Training Module sits on a tripod, where legs consisting of Undergraduate, Training Provider and the University. This feedback is hence very much instrumental in improving the work carried out by the University.

1. Training Provider Details

1	Company Name	7	Feedback Provider Name	
2	Corporate Office Address	8	Position	
3	Telephone	9	Contact Number	
4	Worksite / Project	10	Contact Email	
5	Address	11	No. of Trainees Managed	
6	Mobile	12	Signature and Date	

2. Preparation for Industrial Training

1	Trainee possess basic understanding of HSE aspects	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2	Trainee has an understanding of what to achieve	Yes <input type="checkbox"/>	No <input type="checkbox"/>
3	Trainee possess working knowledge of English	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4	Trainee is physically & mentally fit to work at assigned site	Yes <input type="checkbox"/>	No <input type="checkbox"/>

3. During Training Period

1	"Guidelines" Manual provides adequate information to assist trainee	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
2	Training inspections by University adds value	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
3	If above is answered "Yes" the ideal <u>month</u> to visit trainee would be	1st <input type="checkbox"/>	2nd <input type="checkbox"/>	3rd <input type="checkbox"/>	4th <input type="checkbox"/>	5th <input type="checkbox"/>	6th <input type="checkbox"/>
4	Can the University be a resource to your work through the trainee	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
5	The requirement for a "Structured Training Program" is appropriate	Yes <input type="checkbox"/>	No <input type="checkbox"/>				
6	If above (5) is answered "No", please recommend an alternative way to achieve Learning Outcomes (use a separate sheet if space provided is not adequate).						

4. At the Completion

1	Do you feel the Duration of Training (24 weeks) is adequate?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
2	If above is answered "No" please make a suggestion	 Weeks
3	Were the "Learning Outcomes" achieved by the trainee?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
4	If above (3) is answered "No", then it was due to (check all that apply):		
5	Overall Time deficiency	Yes <input type="checkbox"/>	No <input type="checkbox"/>
6	Complexity of the business / organization	Yes <input type="checkbox"/>	No <input type="checkbox"/>
7	Trainee Projects required more time	Yes <input type="checkbox"/>	No <input type="checkbox"/>
8	Learning Outcome scope is too large	Yes <input type="checkbox"/>	No <input type="checkbox"/>
9	Any other (please use a separate sheet if require)		

5. Any other feedback on the "Industrial Training Module" which is not mentioned above:

--

ANNEX L**APPLICATION FOR A TRAINING CERTIFICATE**

Name of Applicant (Mr./Miss./Mrs.) :
(Please indicate your Gender)

Undergraduate Registration Number :

--	--	--	--	--	--	--	--	--	--

Field of Specialization ⁽¹⁾:

BM	CH	CE	CS	EE	EN	MT	ME	ER	TT	TLM
----	----	----	----	----	----	----	----	----	----	-----

Postal Address :

.....

.....

E-mail :

Mobile Phone No. :

Details of Industrial Training :

Establishment	Period											
	From					To						
	/		/						/		/	
		/		/					/		/	
		/		/					/		/	
		/		/					/		/	

I certify that the information furnished above is true and accurate.

.....

.....

Date

Signature of Applicant

⁽¹⁾ - Delete what is not applicable

ANNEX. M
CONTACT DETAILS

Designation	Name	Telephone Numbers			Email	
		Official		Private		
		General	Ext.			
UNIVERSITY OF MORATUWA						
Vice Chancellor	Prof. P.K.S. Mahanama (Acting)	1001	2651259	2704144	vc@uom.lk	
Deputy Vice-Chancellor, (UOM)	Prof. P.K.S. Mahanama	1011	3139398	-	mahanama@uom.lk	
Dean, Faculty of Engineering, (UOM)	Prof. N.K. Wickramarachchi	3001	2650184	2851094	dean-eng@mrt.ac.lk	
TRAINING COORDINATORS (UOM)						
Biomedical Engineering	Dr. Suboda Charles	2650185	-	071 443 8868	scharles@uom.lk	
Chemical & Process Engineering	Dr. M. Ratnayake	2650188	4591	070 253 2785	mratnayake@uom.lk	
Civil Engineering	Dr. K. Baskaran	2650286	2010	077 765 8826	baskaran@civil.mrt.ac.lk	
Computer Science & Engineering	Dr. A. Wijayasiri	2650287	3122	071 629 1306	adeeshaw@cse.mrt.ac.lk	
Electrical Engineering	Dr. (Mrs.) S.K. Abeygunawardane	2650301	3204	077 667 6657	sarangaa@elect.mrt.ac.lk	
Electronic & Telecommunication Engineering	Dr. Suboda Charles	2650340	-	071 443 8868	scharles@uom.lk	
Materials Science & Engineering	Dr. D. Attygalle	2650441	5127	077 017 2026	dattyga@uom.lk	
Mechanical Engineering	Dr. M. A. Wijewardane	2650534	4516	071 543 2378	anusha@mech.mrt.ac.lk	
Earth Resources Engineering	Dr. S. P. Chaminda		5005	071 318 5666	chaminda@uom.lk	
Textile & Clothing Technology	Prof. EASK Fernando		6006	2640486	sandunf@uom.lk	
Transport & Logistics Management	Eng. S.N. Bentotage		4811	2650492	bentotagesn@uom.lk	
INDUSTRIAL TRAINING DIVISION						
Director (On leave)	Eng. Plnr. T.A. Gamage		3091	2650282	077 731 3254	
Senior Lecturer (Director Acting)	Eng. Roy Sankaranarayana		3092	-	071 428 6318	
Senior Lecturer	Eng. T.A. Dodangoda		3094	-	071 677 3404	
Consultant	Eng. S. Amarasinghe		3095	-	077 302 2373	
Lecturer (Contract)	Eng. Janani Uthayashankar			-	076 948 6733	
NAITA OFFICIALS						
Asst. Director (Special Training)	Eng. Susantha Jayasinghe		011 286 3680	071 637 7367	adsit@naita.gov.lk	

FIELD SPECIFIC LEARNING OUTCOMES

- **Biomedical Engineering** N1
- **Chemical & Process Engineering** N2
- **Civil Engineering** N3
- **Computer Science & Engineering** N4
- **Earth Resources Engineering** N5
- **Electrical Engineering** N6
- **Electronic and Telecommunication Engineering** N7
- **Materials Science and Engineering** N8
- **Mechanical Engineering** N9
- **Textile & Clothing Technology** N10
- **Transport and Logistics Management** N11
- **General Description of Program Outcomes (POs) as per Washington Accord** N12
- **General Description of Program Outcomes (POs) as per revised version of the Washington Accord released in September 2021** N13

Biomedical Engineering

Module Code	BM3991	Module Title	Industrial Training																													
Credits	6.0	Duration		24 weeks			Pre-requisites			None																						
Module Type	Compulsory																															
Learning Outcomes																																
At the end of the module the student will be able to:																																
<ol style="list-style-type: none"> 1. <i>Describe</i> the organization in which the student is undergoing training with respect to the work carried out, organizational structure, its business practices, financial management and ultimately appreciate the differences between academic and industrial environments as an entry-level engineer. 2. <i>Apply</i> the knowledge of mathematics, science and engineering fundamentals learnt in the university to an industrial setting, and apply the industrial engineering knowhow gained from industry to enhance academic work. 3. <i>Practice</i> health and safety procedures, risk management, professional ethics, industrial standards and processes as required by an employee. 4. <i>Demonstrate</i> the technical, teamwork and managerial skills developed through the training. 5. <i>Evaluate</i> the economic, environmental, social, and cultural impact of the tasks performed during training period. 																																
Topics																																
Induction: Initial period to help students in the transition from academic to industrial life. Students should meet their mentor to discuss the contents and the objectives of training. Students should also receive information about the training organization, its products or services and the terms and conditions of employment.																																
Practical Skills: During this period, the student should receive instructions for practical skills essential for their future employment. It should also include an appreciation of the work of others in converting an engineering design into a final product (if appropriate).																																
General Engineering Training: In a large organization this should include an introduction to the work done in various departments. Under these circumstances, the student may eventually be working as a member of a team in the organization. The student should be made aware of the management and administration tasks of the organization.																																
Directed Objective Training: The major part of the training should be directed towards conducting engineering activities which the student intends to specialize in. The student should be encouraged to work on real world problems and substantial responsibility should be vested upon to encourage independent work to establish interest and confidence within the student.																																
Most of the training duration should cover design and development, documentation and data preparation and commissioning. The student should also have a thorough understanding of the operations of the training place in biomedical and electronic engineering context.																																
Assessments:																																
<ul style="list-style-type: none"> • Daily Diary & Four-Weekly Continuous Assessment Reports [LO 2, 4] - 30% • Report on Industrial Training [LO 1, 2, 3, 4, 5] - 30% • Oral Examination [LO 1, 2, 3, 4, 5] - 40 % 																																
Departmental Coordinator	Dr. P. G. Jayasekara																															
Mapping of Learning Outcomes to Program Outcomes																																
Module Learning Outcomes	Program Outcomes																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12																				
LO1		L								L	L	M																				
LO2	H				H																											
LO3	L					H		M				M																				
LO4	L	L	L			M		L	H	M	M	H																				
LO5					H	L			H	L	H																					
Overall Contribution to POs	H	L	L		H	H	L	M	H	H	M	H																				
Scale H - High M - Medium L - Low																																

Chemical & Process Engineering

Module Code	CH3993	Module Title	Industrial Training																											
Credits	6.0	Duration		24 weeks			Pre-requisites			None																				
GPA/NGPA	NGPA																													
Module Type	Compulsory																													
Learning Outcomes																														
At the end of the module the student will be able to:																														
<ol style="list-style-type: none"> 1. <i>Apply</i> knowledge and principles of chemical and process engineering. 2. <i>Understand</i> industrial systems, procedures, and practices. (i.e., administration, financial, general management, logistics, HSE, legal, etc.) 3. <i>Design</i> solutions for industrial/engineering problems in the industry using modern tools and techniques. (i.e., Instrumentation, IT tools, software platforms, knowledge-based data, experimental design, etc.) 4. <i>Develop</i> soft skills, such as team work, communication, time management, leadership, and understanding of professional ethics. 																														
Topics																														
<ol style="list-style-type: none"> 1. Knowledge and principles of chemical and process engineering; 2. Process flow sheeting, process plant design/maintenance/troubleshooting, Energy efficiency and conservation, Health-Safety-Environmental aspects of chemical processes, Process instrumentation and software platforms/process control systems, Quality control/assurance and analytical testing for process development 3. Industrial systems, procedures, and practices; 4. Administration/financial/general management/logistics/HSE/legal practices in an industrial organization, Practices of professional ethics/personal relations, Organizational practices for process efficiency improvement 																														
Assessments:																														
<ul style="list-style-type: none"> • Daily Diary & Four-Weekly Continuous Assessment Reports [LO 2, 3] - 30% • Report on Industrial Training [LO 1, 2, 3, 4] - 30% • Oral Examination [LO 1,2,3,4] - 40 % 																														
Departmental Coordinator	Dr. M. Rathnayake																													
Mapping of Learning Outcomes to Program Outcomes																														
Module Learning Outcomes	Program Outcomes																													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12																		
LO1	H	L	L	L								M																		
LO2	L	M		H		L	L			L	L	M																		
LO3	M	H	H	H	H			L			L	H																		
LO4						H		H	H	H		H																		
Overall Contribution to POs	M	M	M	H	M	M	L	M	H	M	L	H																		
Scale: H - High M - Medium L - Low																														

Civil Engineering

Module Code	CE3992	Module Title	Industrial Training								
Credits	6.0	Duration	Minimum of 16 weeks (extendable up to 20 weeks)	Pre – requisites	None						
GPA/NGPA	NGPA										
Module Type:	Compulsory										
Learning Outcomes (LOs)											
After completing this module, students will be able to											
LO-1: <i>study organization in which trainee is undergoing training with respect to the work carried out, organizational structure, stakeholders, past/ future changes, strategic planning, its business practices and financial management, economic viability, and sustainability,</i>											
LO-2: <i>recognise the health, safety and environmental (HSE)polices adapted, HSE issues at the training place, risk management/ emergency response and best practices adopted at the training place,</i>											
LO-3: <i>demonstrate the technical, teamwork, and managerial skills developed through the training at the worksite or design office.</i>											
LO-4: <i>reflect and report on the economic, environmental, social, and cultural impacts of the projects and project environment exposed to during the training.</i>											
Module Outline					Los Covered						
Topics											
<p>1. Sector: Consulting/Client Organisations: Study of contract/tender documents; preparation of technical documentation; tender procedures and evaluation; study of work site procedures; surveying, levelling and setting out; study of construction materials; study of construction equipment; study of building services and finishes; construction of structures; assist in construction supervision.</p> <p>2. Sector: Contracting Organisations: Study of work site procedures; surveying, levelling and setting out; study of construction materials, study of construction equipment's; study of building services and finishes; assist in interim valuations; assist in sub-contractors' payments; assist in claims for variations; construction of structures; assist in construction supervision</p>					LO-1 , LO-2 LO-3, LO-4						
Assessments	Category	Type	Assessed LOs	Weightage (%)							
	CA	1. Daily Diary & Four-Weekly Continuous Assessment [30%]	LO-1, 2, 3	30%							
	EA	1. Oral examination [40%] 2. Report on Industrial Training [30%]	All	70%							
Recommended Texts Books	<p>1. Neville, A.M. and Brooks, J.J. (2010).Concrete Technology (2nded.). Pearson Education.</p> <p>2. Roy, C. (2006). Advanced Construction Technology (4thed.). Prentice Hall.</p> <p>3. Charles, J. K. (2016). Sustainable Construction: green building design and delivery (4thed.).Wiley.</p> <p>4. Mannering, F. L. and Washburn, S.S. (2013). Principles of Highway Engineering and Traffic Analysis (5thed.).</p> <p>5. Davis, M. L. and Corwnwell, D. A. (2012). Introduction to Environmental Engineering (5thed.).Science Engineering & Math.</p> <p>6. Thilakasiri, H. S. Construction and Testing of Piles.</p> <p>7. CIDA Publications.</p> <p>8. ICE. Civil Engineering Procedure (6thed.). Thomas Telford.</p>										
Names of Lecturers	Dr. K. Baskaran Eng. T.A. Gamage										

Civil Engineering

Mapping of Learning Outcomes to Program Outcomes												
Module Learning Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
LO1		L				M				L	L	M
LO2	L					H	H	M	L	L		M
LO3	L	L	L		L	M	M	L	H	M	L	H
LO4						M	L	H	L	L		H
Overall Contribution to POs	L	L	L		L	H	H	M	H	H	M	H

Scale: H – High M – Medium L – Low

Computer Science & Engineering

Module Code	CS3992	Module Title	Industrial Training																													
Credits	6.0	Duration		24 weeks		Pre/Co- Requisites		None																								
GPA/NGPA	NGPA																															
Module Type	Compulsory																															
Learning Outcomes																																
At the end of the module the student will be able to:																																
<ol style="list-style-type: none"> 1. <i>Explain</i> the role and contribution of industry for the national development 2. <i>Recognize</i> the professional realities of the industrial environment that complement, enhance, confirm, and reshape knowledge 3. <i>Appreciate</i> the formal and informal relationships in an industrial organization and demonstrate essential skills on human relations and teamwork 4. <i>Demonstrate</i> the ability to appreciate the complex nature of industrial problems and relate theoretical concepts learnt to practices in the industry in obtaining optimum solutions. 5. <i>Appreciate</i> the application and synergy of engineering, management, financial and economic aspects in the real world. 6. <i>Demonstrate</i> the ability to cultivate powers of observation and make use of the facilities provided to fulfil the needs of the industry. 7. <i>Demonstrate</i> the sense of responsibility towards industry and society in general. 																																
Topics																																
<ol style="list-style-type: none"> 1. Orientation/Familiarization with the Industrial Training Organization: Overall function/role/scope of the organization in the respective sector; Scale/magnitude of the organization in the respective sector in the country/region; Structure of the organization with respective to the discharge of different functions; Nature and scope of different engineering disciplines in respective divisions/departments. 2. Planning & designing of engineering products, process and projects and effecting: Research and concept development; Process of matching the client needs, equipment / component / device / selection, tender procedures and analyse the requirements of the system or software; Prepare the design and the specification and evaluation of technical design details with respect to planning process based on need of the clients; Managing and planning a Project; Costing and financing; Forecasting of human resource requirement and development; Setting up Disaster recovery techniques; Assuring Data protection and analyse the security and other risks; Coding to implement the system; Testing and assuring the quality of the system; Prepare documentation on System or Application Software and user manuals; Familiarize with systems; Commissioning procedures; Installation and testing; Use of tools; Installing System / Network installation; Managing System / Network and Troubleshooting. 3. Skills of functioning as an effective Engineer in the Industry: Acquisition of professional ethics in an industry set up (transition from academic life to industry set up); Working with non-engineers ranging from labourers to Chief Executives possessing vastly different education; Social and cultural experiences and backgrounds and becoming a team player and a leader; Earning the respect of all by demonstrating the engineering knowledge appropriately; Management, organization and labour rules and regulations. 																																
Assessments:																																
<ul style="list-style-type: none"> • Daily Diary & Four-Weekly Continuous Assessment Reports [LO 3, 4, 5] - 30% • Report on Industrial Training [LO 1, 2, 3, 4, 5, 6, 7] - 30% • Oral Examination [LO 1, 2, 3, 4, 5, 6, 7] - 40 % 																																
Departmental Coordinator	Dr. Adeesha Wijayasiri																															
Mapping of Learning Outcomes to Program Outcomes																																
Module Learning Outcomes	Program Outcomes*																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11																					
LO1						M				L																						
LO2						M		H																								
LO3							H	H	H	H																						
LO4	H	H	H	H	H						L																					
LO5	L	L	M	M	H						H																					
LO6									M		H																					
LO7						M	M	L																								
Overall Contribution to POs	L	L	M	M	H	M	M	H	M	L	H																					
Scale: H - High M - Medium L - Low																																

*Note: Program outcomes are as per revised Washington Accord (Refer Annex N13)

Earth Resources Engineering

Module Code	ER 3992	Module Title	Industrial Training										
Credits	6.0	Duration	24 weeks	Pre-requisites	None								
GPA/NGPA	NGPA												
Module Type	Compulsory												
Learning Outcomes													
Upon successful completion of this module, the student will be able to:													
LO-1: <i>Apply</i> best industrial safety practices, technical knowledge and skills, excellent work ethics, project management skills, communication skills, teamwork on project sites and at engineering office environments, where they will serve as practising engineers.													
LO-2: <i>Analyze</i> engineering problems in either of Mining/ Ocean Resources/ Petroleum Engineering fields OR Remote Sensing & GIS[RS & GIS]/ Gem & Jewellery fields, based on the practical experience they gained during their industrial training, contrast them with similar case-studies towards finding of reliable environmental friendly engineering solutions.													
LO-3: <i>Evaluate</i> sub-surface strata by means of geophysical techniques followed by deep drilling, physical and chemical properties of rock/ soil/ water by laboratory testing of samples, quality and quantity of ore reserves, economics of ore reserves, cost for exploration of mineral deposits, cost for exploitation and processing of minerals related to the engineering disciplines mentioned under LO-2 AND cost for field experiments and data collection related to RS&GIS projects/ exploration and mining of gem-stones/ post processing and Jewellery manufacturing, environmental impacts related to mining and processing operations which are appropriate to the industrial training experience gained by the trainee.													
LO-4: <i>Design</i> environmentally friendly open-pit and underground mining projects, rock blasting for tunneling and sub-surface excavations, mineral processing plants, dredging projects related to off-shore mining operations, RS & GIS based projects, exploration and mining of gemstones projects, fashionable jewellery to suite needs of the modern society whichever appropriate to the training gained by the trainee.													
Module Outline	LOs Covered												
Actively getting involved dynamic operations/ projects either in on-shore and off-shore mining of ore reserves, mineral processing, mineral and petroleum exploration, laboratory testing of rock/ soil/ water, onshore and offshore drilling for sub-surface exploration, tunneling, groundwater exploration and tube-well construction, oceanography related applications, RS & GIS applications, exploration and exploitation of gem stones, Jewellery design and manufacturing or in a combination of them as per the relevancy and choice of the trainee.	LO-1, LO-2 LO-3, LO-4												
Study and gain experience in:													
<ul style="list-style-type: none"> • Worksite procedures, equipment and plants used for product optimization • Possible environmental impacts and rehabilitation techniques • Engineering design aspects related to the field of specialization • Needy research and development work in industry • Financial aspects relevant to this field of specialization • Legal aspects relevant to this field of specialization 													
Assessments	Category	Type	Assessed LOs	Weightage (%)									
	CA	1. Daily Diary & Four-Weekly Continuous Assessment	LO 1,2,3,4	30%									
	EA	1. Oral examination 2. Report on Industrial Training	LO 1,2,3,4	40% 30%									

Earth Resources Engineering

Recommended Texts Books	1. Introductory mining engineering by Hartman, Howard L Mutmansky, Jan M. 2. Blasting principle for open pit mining by Sen, Gour C. 3. Environmental impact of mining by Down, C.G., Stocks, J. 4. Mine health and safety management by Karmis, Michael ed 5. Advances in Remote Sensing and GIS analysis by Atkinson, Peter M: Tate, Nicholas J. eds 6. Engineering Geology for civil engineers by Reddy, D. Venkat. 7. Mineral processing technology by Wills, B.A. 8. Gem Testing by Anderson, B.W., 9th Edition 9. Applied petroleum reservoir engineering by Craft, B.C., Hawkins, M.F. 10. Applied oceanography by Bishop, Joseph M.												
Names of Lecturers	Dr. S. P. Chaminda												
Mapping of Learning Outcomes to Program Outcomes													
Module Learning Outcomes	% allocations	Program Outcomes											
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
LO1	25	H	M	H			M	L	M	M	M	H	M
LO2	25	H	H	H	M	M		L					M
LO3	25	H	H	H	M	M						H	
LO4	25						M		M	M	M	H	
Overall Contribution to POs		H	H	H	H	M	M	L	M	M	M	H	H
Scale: H - High M - Medium L - Low													

Electrical Engineering

Module Code	EE3993	Module Title	Industrial Training																												
Credits	6.0	Duration	24 weeks				Pre/Co- Requisites	None																							
GPA/NGPA	NGPA																														
Module Type	Compulsory																														
Learning Outcomes																															
After completing this module, the student will be able to:																															
<ol style="list-style-type: none"> 1. <i>Identify</i> how the theoretical principles learnt as an undergraduate could be applied practically. 2. <i>Demonstrate</i> the skills, knowledge and attitudes needed for an effective start of the engineering profession. 3. <i>Work</i> with different categories of people in an industrial environment. 4. <i>Adopt</i> appropriate technical, environmental, economic and social constraints. 5. <i>Demonstrate</i> knowledge of organizational, financial and human resource management. 																															
Outline Syllabus																															
<ol style="list-style-type: none"> 1. Induction from academic to industrial life. 2. Practical skills in planning, design, Installation, commissioning, and maintenance. 3. Interaction with superiors and subordinates. 4. Teamwork and responsibility. 5. Safety practices. 6. Systems approach. 7. Management. 																															
Assessments:																															
<ul style="list-style-type: none"> • Daily Diary & Four-Weekly Continuous Assessment Reports [LO 3] - 30% • Report on Industrial Training [LO 1,2,3,4] - 30% • Oral Examination [LO 1,2,3,4] - 40 % 																															
Departmental Coordinator:	Dr. (Ms.) S. K. Abeygunawardane																														
Mapping of Learning Outcomes to Program Outcomes																															
Module Learning Outcomes	Program Outcomes																														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PO13																		
LO1	M	M	M		M							M																			
LO2	H	H	H		M	M	M	H		L	H	M																			
LO3							L	M		M	M	M																			
LO4				H							L																				
LO5												H																			
Overall Contribution to POs	H	H	M	M	M	L	M	H		M	M	H																			
Scale:	H - High				M - Medium				L - Low																						

Electrical Engineering**Programme Objectives**

To produce high quality electrical engineering graduates capable of

1. Solving complex engineering problems,
2. Utilising resources efficiently for sustainable development,
3. Adapting to changing environment through self-learning,
4. Functioning as a socially responsible engineer,
5. Thinking creatively and innovating,
6. Leading an organisation based on knowledge and experience.

Programme outcomes

Electrical engineering graduates with ability to

1. Investigate, analyse, and design solutions for complex electrical engineering problems using basic science and engineering fundamentals.
2. Identify and solve complex engineering problems through application of theoretical knowledge and industry oriented practical skills.
3. Utilise a systems approach to analyse intricate electrical engineering problems and find solutions.
4. Evaluate the impact of professional solutions in societal and environmental context and recognise the need for sustainable development in designing engineering solutions.
5. Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools.
6. Recognise the need and engage in independent and lifelong learning in the broadest context of technological change.
7. Apply ethical principles and commit to professional ethics & responsibilities and norms of engineering practice in the Sri Lankan context.
8. Assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to professional engineering practice.
9. Contribute towards enhancing quality of life through professional practice.
10. Conduct investigations of complex problems using research-based knowledge and research methods to provide valid conclusions.
11. Communicate effectively with the engineering communities and the society at large.
12. Comprehend and write effective reports, design engineering documentation, make effective presentations and give clear instructions.
13. Apply knowledge and understanding of engineering and management principles as a leader or a member in a team in multidisciplinary environments.

Electrical Engineering

Relation of IESL criteria on graduate abilities to the programme

IESL criteria	Programme Objective Number	Programme Outcome Number
Apply knowledge of mathematics, basic sciences and engineering fundamentals to the analysis of complex engineering problems	1	1, 2, 3
Identify, formulate, research literature, conduct investigations and solve complex engineering problems to provide valid conclusions.	5	3, 10, 12
Design systems, components or processes that meet specified needs.	3	5, 6
Conduct investigations of complex problems using research-based knowledge and research methods.	1, 5	2, 5, 10
Create, select and apply appropriate techniques, resources, and modern engineering and IT tools to complex engineering activities	1, 5	3, 5, 10
Assess societal, health, safety, legal, cultural and environmental issues related to professional engineering solutions.	4, 6	8, 13
Demonstrate broad knowledge of sustainable development concepts and practices required for dealing with contemporary issues related to professional engineering practice.	2, 4	4, 8
Demonstrate broad knowledge of ethical responsibilities and professional standards	2	4
Demonstrate ability to function effectively as an individual and in multidisciplinary and multi-cultural teams, with the capacity to be a leader or manager as well as an effective team member.	4	7, 9, 13
Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.	3	6, 11, 12
Demonstrate broad knowledge of management and business practices, including financial management, risk and change management.	2	4, 13
Engage in independent and lifelong learning in the broad context of technological change.	3	6

Electronic and Telecommunication Engineering

Module Code	EN3992	Module Title	Industrial Training																											
Credits	6.0	Duration		24 weeks			Pre/Co - requisites			None																				
GPA/NGPA	NGPA																													
Module Type	Compulsory																													
Learning Outcomes																														
At the end of the module the student will be able to:																														
<ol style="list-style-type: none"> 1. <i>Describe</i> the organization in which trainee is undergoing training with respect to the work carried out, organizational structure, its business practices, financial management and ultimately appreciate the differences between academic and industrial environments as an entry-level engineer. 2. <i>Apply</i> the knowledge of mathematics, science and engineering fundamentals learnt in the University to an industrial setting, and the industrial engineering knowhow gained from industry in further academic work. 3. <i>Practice</i> health and safety procedures, risk management, professional ethics, industrial standards and processes as required by an employee. 4. <i>Demonstrate</i> the technical, teamwork and managerial skills developed through the training. 5. <i>Evaluate</i> the economic, environmental, social, and cultural impact of the tasks performed during training period. 																														
Outline Syllabus																														
<ol style="list-style-type: none"> 1. Induction: Initial period to help the student in the transition from academic to industrial life. The students should meet his/her mentor to discuss the contents and the objectives of training. He /She should also receive information about the training organization, its products or services and the terms and conditions of employment. 2. Practical Skills: During this period the student should receive instructions in the practical skills essential for his/her future employment. It should also include an appreciation of the work of others in converting an engineering design into a final product (if appropriate). 3. General Engineering Training: In a large organization this should include an introduction to the work done in various departments. Under these circumstances, the student may eventually be working as a member of a team in the organization. The student should be made aware of the management and administration tasks of the organization. 4. Directed Objective Training: The major part of the training should be directed towards conducting engineering activities which the student intends to specialize in. The student should be encouraged to work on real world problems and substantial responsibility should be vested upon to encourage independent work to establish interest and confidence within the student. <p>Most of the training time will cover Design and Development, Documentation and Data preparation, and commissioning. The student should also have a thorough understanding of the operations of the training place in the Electronics and Telecommunication Engineering context.</p>																														
Assessments:																														
<ul style="list-style-type: none"> • Daily Diary & Four-Weekly Continuous Assessment Reports [LO 2, 4] - 30% • Report on Industrial Training [LO 1, 2, 3, 4, 5] - 30% • Oral Examination [LO 1, 2, 3, 4, 5] - 40 % 																														
Departmental Coordinator:			Dr. PG Jayasekara																											
Mapping of Learning Outcomes to Program Outcomes																														
Learning Outcomes Covered	Program Outcomes																													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12																		
LO1	L									L	L	M																		
LO2	H				H																									
LO3	L					H		M				M																		
LO4	L	L	L			M		L	H	M	M	H																		
LO5						H	L			H	L	H																		
Overall Contribution to POs	H	L	L		H	H	L	M	H	H	M	H																		
Scale: H - High M - Medium L - Low																														

Materials Science and Engineering

Module Code	MT3992	Module Title	Industrial Training																					
Credits	6.0	Duration	24 weeks			Pre/Co- Requisites	None																	
GPA/NGPA	NGPA																							
Module Type	Compulsory																							
Learning Outcomes																								
<p>After completing this module, the student will be able to:</p> <ol style="list-style-type: none"> 1. <i>Relate</i> the fundamentals of materials science and technology behind industrial processes. 2. <i>Determine</i> the ability to ensure suitability and enhancement of industrial managements. 3. <i>Identify</i> good Health, Safety and Environment (HSE) practices and HSE management Systems. 4. <i>Describe</i> various managerial practices within the organization. 																								
Outline Syllabus																								
<p>Students will undergo 24 weeks of industrial training in one or more of organization of the following categories,</p> <ol style="list-style-type: none"> 1. Material processing companies 2. Metal, Polymer and Ceramics Manufacturing Industries 3. Research and Development Industries 4. Industries in Materials Engineering Allied Fields 																								
Assessments:																								
<ul style="list-style-type: none"> • Daily Diary & Four-Weekly Continuous Assessment Reports [LO 3] - 30% • Report on Industrial Training [LO 1,2,3,4] - 30% • Oral Examination [LO 1,2,3,4] - 40 % 																								
Departmental Coordinator:	Dr. D Attygalle																							
Mapping of Learning Outcomes to Program Outcomes																								
Module Learning Outcomes	Program Outcomes																							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12												
LO1	H	L	L																					
LO2		M	M	H	M		M	M				M												
LO3						H	H	M	M			M												
LO4				M	M	H	H	H		H	M													
Overall Contribution to POs	H	M	M	H	M	H	H	H	M	H	M	M												
Scale: H - High M - Medium L - Low																								

Mechanical Engineering

Module Code		Module Title	Industrial Training																		
Credits	6.0	Duration	24 weeks				Pre/Co- Requisites														
GPA/NGPA	NGPA																				
Module Type	Compulsory																				
Learning Outcomes																					
After completing this module, the students will be able to:																					
<ol style="list-style-type: none"> 1. <i>Apply</i> knowledge and principles of Science and Engineering. 2. <i>Identify</i> and understand the industrial and societal problems and their workable solutions. 3. <i>Awareness</i> of work ethics and professional work culture in multicultural environment. 4. <i>Develop</i> and acquire technical, soft, and entrepreneurship skills. 5. <i>Understand</i> the organizational functions such as administration, finance and Health, Safety & Environmental (HSE) practices. 6. <i>Understand</i> the importance of lifelong learning of a responsible, accountable professional engineer. 																					
Outline																					
<ol style="list-style-type: none"> 1. Induction: Transition from academic life to industrial life, acquire general management and administration skills, learn financial handling, HSE and industrial ethics 2. Student should develop the communication and soft skills and acquire new technical skills 3. Learn use of general and special tools 4. Understand conventional manufacturing technologies and novel technologies, familiar with manufacturing systems, power cycles, compressed air systems, refrigeration and air conditioning systems, steam generating systems & distribution systems, automotive systems & automobiles, Power Hydraulic Systems and Pneumatic Systems (PHPS), electric drive systems and other electrical equipment, control systems : computer control systems, micro controllers and microprocessors, speed control of motors and Proportional Integral Derivative (PID) controllers, Programmable Logic Controllers (PLCs), maintenance of machineries refrigeration systems, internal combustion engines, boilers, pumps, motors (please refer the detailed module outline provided separately) 5. Students should improve, documentation, report writing, conversion of data into information 																					
Assessments:																					
<ol style="list-style-type: none"> 1. Report on Industrial Training [LO3, 4, 6] 30% 2. Continuous Assessment (section 9) [LO1, 2, 3, 5] 30% 3. Presentation and Viva [LO3, 4, 5, 6] 40% 																					
Departmental Coordinator:	Dr. M. Anusha Wijewardane																				
Mapping of Learning Outcomes to Program Outcomes																					
Module Learning Outcomes	Program Outcomes																				
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12									
LO1	H	H	H	M	L																
LO2	H	H	H	H	M	M	H	M			L										
LO3						H		H	H	M											
LO4						H		M	H	H	H	L									
LO5						H	L	M	M	H		L									
LO6								H	H		M	H									
Overall Contribution to POs	H	H	H	H	M	H	M	M	H	H	M	M									
Scale: H - High M - Medium L - Low																					

Textile & Clothing Technology

Module Code	TT3992	Module Title	Industrial Training																														
Credits	6.0	Duration	24 weeks full time			Pre/Co- Requisites	None																										
GPA/NGPA	NGPA																																
Module Type	Compulsory																																
Learning Outcomes																																	
At the end of the module students will be able to:																																	
<ol style="list-style-type: none"> 1. <i>Understand</i> industrial systems, international procedures, standards, and agreements, as well as good practices in Textile and apparel industry with an emphasis to health and safety issues, environmental, economic aspects 2. <i>Apply</i> the theoretical and mathematical knowledge gained as an undergraduate in an industrial environment effectively 3. <i>Develop</i> technical, managerial skills, attitudes and ethics needed for an effective textile and clothing engineer. 4. <i>Critically analyze</i> real life situations in industrial setup and provide solutions for them using modern tools and techniques 5. <i>Enhance</i> soft skills, such as teamwork, negotiation, scientific and professional communication, leadership, project management and practicing of professional ethics 																																	
Outline Syllabus																																	
<ol style="list-style-type: none"> 1. Induction to the workplace and industrial life 2. Acquaint with industrial systems, international trade rules, procedures, and practices 3. Knowledge on administration, financial, general management, logistics, merchandising, legal practices in the industry 4. Practices of professional ethics, personal relations and organizational practices for process efficiency improvement 5. Practical skills in planning, design, production, setting up, commissioning and maintenance of a factory 6. Professional report writing and presentations. 																																	
Assessments:																																	
<ul style="list-style-type: none"> • Daily Diary & Four-Weekly Continuous Assessment Reports [LO 1, 3, 4] - 30% • Report on Industrial Training [LO 1, 2, 3, 4, 5] - 30% • Oral Examination [LO 1, 2, 3, 4, 5] - 40 % 																																	
Departmental Coordinator	Prof. EASK Fernando																																
Mapping of Learning Outcomes to Program Outcomes																																	
Module Learning Outcomes	Program Outcomes																																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12																					
LO1	H		H		L	H	L	M			M																						
LO2	H	H	M								M																						
LO3			M		H	H	M	H	H	H	H																						
LO4	M	H	H	H		M	M			H	H																						
LO5						M	M	H	H	H	H																						
Overall Contribution to POs	M	M	H	M	M	H	H	H	H	M	H																						
Scale: H - High M - Medium L - Low																																	

Transport and Logistics Management

Module Code	TL3994	Module Title	Industrial Training														
Credits	6.0	Duration	24 weeks full time				Pre/Co- Requisites		None								
GPA/NGPA	NGPA																
Module Type	Compulsory																
Learning Outcomes:																	
After completing this module, the students should be able to:																	
<ol style="list-style-type: none"> 1. <i>Describe</i> the organization – organizational structure, practice and culture, organizational ethics, health, safety and risk management practices, sustainability policies and financial management. 2. <i>Demonstrate</i> as an effective learner – learning by observation, knowledge sharing, time management, problem based learning, knowledge sharing and good practices. 3. <i>Demonstrate</i> the ability of integrating the academic knowledge with the industry practices – knowledge gathered and managerial skills development, become a transformer of people and organizations and reflecting professionalism. 4. <i>Reflect</i> the knowledge – technical and managerial practices, economic, environmental, social and cultural impacts of the work undertaken and the ability of communicate effectively. 																	
Topics																	
<ol style="list-style-type: none"> 1. General Training Areas*: Organisational structure, major sub-groups/divisions, organisational culture, work ethics, occupational health & safety, sustainability policies, business ethics, corporate social responsibility, general management, legal framework, time management and networking. 2. Specific Training Areas*: Infrastructure & facilities, site visits, key operations, key processes, key systems, key customers, key suppliers, key stakeholders, key products and/or services, key documentation, costing & pricing, applicable regulations (local/international), licensing requirements, key performance indicators, research & development practices, marketing, and project management. 																	
*to be covered as much as possible																	
Assessments:																	
<ul style="list-style-type: none"> • Daily Diary & Four-Weekly Continuous Assessment Reports [LO 3] - 30% • Report on Industrial Training [LO 1, 2, 3, 4] - 30% • Oral Examination [LO 1, 2, 3, 4] - 40% 																	
Departmental Coordinator	Mr. SN Bentotage																
Mapping of Learning Outcomes																	
Module LOs	Programme Outcomes																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12					
LO1	L			M		L	H	H	M	M	H	M					
LO2	M	H	L	M	M	M	M	M	H	H	L	H					
LO3	M	H	M	M	H	M	M	M	M	M	L	M					
LO4	M		M		M	M	H	M	L	H	L	H					
Overall contribution to POs	M	H	M	M	M	M	H	M	M	H	M	H					
Scale: H – High M - Medium L - Low																	

General Description of Program Outcomes (POs) as per Washington Accord

As a constituent of the International Engineering Alliance (IEA), the Washington Accord (WA) is concerned with mutual recognition among its signatories of accredited educational programmes designed to provide the educational foundations for professional engineers. The Institution of Engineers, Sri Lanka (IESL) who oversees the Engineering Profession in Sri Lanka is the signatory on behalf of Sri Lanka, to the Washington Accord.

All four year full time engineering degree programmes accredited by the IESL will be considered as substantially equivalent to four year engineering degree programmes that have been accredited by the other signatories to the Washington Accord. A signatory to the Washington Accord is empowered by the Accord to accredit only those degree programmes conducted within the jurisdiction (country) of the signatory.

PO1	Engineering knowledge	Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
PO2	Problem analysis	Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
PO3	Design/development of solutions	Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health, and safety, cultural, societal and environmental considerations.
PO4	Investigation	Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
PO5	Modern tool usage	Create, select and apply appropriate techniques, resources and modern engineering and IT tools, including prediction and modelling, to complex engineering problems, with an understanding of the limitations.
PO6	The engineer and society	Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solutions to complex engineering problems.
PO7	Environment and sustainability	Understand and evaluate the sustainability and impact of professional engineering work in the solution of complex engineering problems in societal and environmental contexts.
PO8	Ethics	Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
PO9	Individual and teamwork	Function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.
PO10	Communication	Communicate effectively on complex engineering activities with the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear instructions.
PO11	Project management and finance	Demonstrate knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work as a member and leader in a team, to manage projects and in multi-disciplinary environments.
PO12	Life-long learning	Recognize the need for, and have the preparation and ability to engage in, independent and life-long learning in the broadest context of technological change.

General Description of Program Outcomes (POs) as per revised version of the Washington Accord released in September 2021

PO1	Engineering Knowledge	Apply knowledge of mathematics, natural science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
PO2	Problem Analysis	Identify, formulate, research literature and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences with holistic considerations for sustainable development*.
PO3	Design/development of solutions	Design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health, and safety, cultural, societal and environmental considerations.
PO4	Investigation	Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.
PO5	Tool Usage	Create, select and apply appropriate techniques, resources and modern engineering and IT tools, including prediction and modelling, to complex engineering problems.
PO6	The Engineer and the World	(when solving complex engineering problems) Analyze and evaluate sustainable development impacts* to: society, the economy, sustainability, health and safety, legal frameworks, and the environment
PO7	Ethics	Apply ethical principles and commit to professional ethics and norms of engineering practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion.
PO8	Individual and Collaborative Teamwork	Function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings.
PO9	Communication	Communicate effectively and inclusively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, taking into account cultural, language, and learning differences.
PO10	Project Management and Finance	Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.
PO11	Life-long learning	Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change

* - Represented by the 17 UN Sustainable Development Goals (UN-SDG)