

Republika ng Pilipinas
(Republic of the Philippines)
MINISTRI NG EDUKASYON, KULTURA AT ISPORTS
(MINISTRY OF EDUCATION, CULTURE AND SPORTS)
Maynila

April 24, 1986

MECS O R D E R
No. 17, s. 1986

AMENDMENT TO MECS ORDER NO. 38, S. 1982
(Standards for Technician Education)

To: Bureau Directors
Regional Directors
Presidents, State Colleges and Universities
Vocational College/School Superintendents

1. In pursuance of the recommendations of both project and local consultants and of technician education experts in a series of national and multi-sectoral consultations and in conformity with the findings of the evaluative study on the implementation of the two-year Diploma in Industrial Technician (DIT) conducted pursuant to the loan agreement between the Government of the Philippines and the Asian Development Bank under which the said DIT program is being implemented, MECS Order No. 38, s. 1982, on Diploma in Industrial Technician, is hereby amended in order to make the technician education program more relevant to the manpower needs of the country and to promote recognition of technicians as well as to enhance their status and conditions of service in line with acceptable standards.
2. The amendments consist of: (1) lengthening the curricular program from two to three years and enriching the course contents by the inclusion of new topics, (2) changing the sequencing of some subjects, (3) providing longer time allocation for supervised industrial training and (4) adding technical measurements and computer technology subjects.
3. The new three-year technician course leading to the Diploma of Technology shall be implemented starting School Year 1986-87 in the 21 Project Institutions under the Technical and Vocational Education Project. Other schools may be given the permit to implement the said technician curriculum, subject to the accreditation of their program and approval by the Ministry.
4. The complete text of the amendments comprising the revised curriculum for technician education is inclosed.
5. This Order supersedes MECS Order No. 38, s. 1982, as regards the Diploma in Industrial Technician (DIT) curriculum.
6. Immediate dissemination of this Order to all concerned is hereby enjoined.

(SGD.) LOURDES R. QUISUMBING
Minister

TABLE OF CONTENTS

- I. INTRODUCTION
- II. DEFINITION OF TERMS
- III. DESIGN DATA
- IV. METHODOLOGY
- V. PARTICIPANTS
- VI. THE REVISED CURRICULUM (Block syllabus)
- VII. EVALUATION OF THE CURRICULUM
- VIII. ANNEXES
 - a) Detailed syllabus of Automotive Technology
 - b) Detailed syllabus of Civil Technology
 - c) Detailed syllabus of Electrical Technology
 - d) Detailed syllabus of Electronic Technology
 - e) Detailed syllabus of Mechanical Technology
 - f) Detailed syllabus of RAC Technology
 - g) Detailed syllabus of Welding Fabrication
 - h) Detailed syllabus of Introduction to Computer Science

REVISED CURRICULUM FOR TECHNICIAN EDUCATION
(DIPLOMA OF TECHNOLOGY)

I. INTRODUCTION

At the request of PMU, a task-force composed of teachers, administrators and consultants got together to review the content of technical and related subjects and the duration of the DIT curriculum. After reviewing the literature (TVEP evaluation, MTI staff comparative study, CEGIR position paper on DIT) the group have adopted a pro-format for the Block and Detailed syllabus. The goals and objectives having been defined in MECS Order No. 38 (1983) the task force have established a schedule of activities and a time frame for the revision.

II. RATIONALE OF THE CURRICULUM REVISION^{1/}

1. Background of the Revision:

- Schedule 6 Art. 11.1 of the loan 531-PHI require the Borrower through MECS to further develop the draft curricula for the 2-year industrial technician programs at the post secondary level, as needed. Art. 11.d further states the need "to undertake the future development of the curriculum on a continuing basis in consultation with the Bank. Further refinement and finalization shall be carried out with the assistance of the Consultants (CEGIR) provided under the Project. No modifications to the curricula shall be undertaken by the Borrower or MECS which may affect the purpose and scope of the Project".

2. Situational Review:

- As a background information, the DIT/DET curricula were developed and implemented prior to the arrival of the Project Consultants (CEGIR) under MECS Order No. 38 s. 1983.

^{1/} The rationale is an extract of a document prepared by Dr. Adiviso to the Deputy Minister of Education

- The DET (Diploma in Technological Education) cannot be considered as part of the loan package. In fact, the intent of the loan is negated by the DET offering which encourages technician graduates to continue for their higher studies instead of seeking immediate employment.
- The workshop on Macro-Planning held in November participated in by administrators of project institutions came up with the recommendation to revise the DIT curriculum from 2 years to 3 years duration.
- The CEGIR consultants recommended strongly for the increase of training hours, thus, lengthening the DIT curriculum to 3 years. Their observation is that the DIT curriculum is designed neither to turn out craftsman nor technicians.
- A meeting with Deputy Minister Bernardo, the CEGIR Consultants and experienced administrators of technician education programs, i.e., Pres. Vergara of TUP, VP Boransing of MSU-IIT, Supt. Casuga of CCAT, Representatives from Meralco Foundation, Don Bosco Technical College, RTC and BTVE Director P. Esteban came to an agreement to revise the DIT curriculum to three years duration as a standard. Figures 1 and 2 were adopted as operational references in program development.

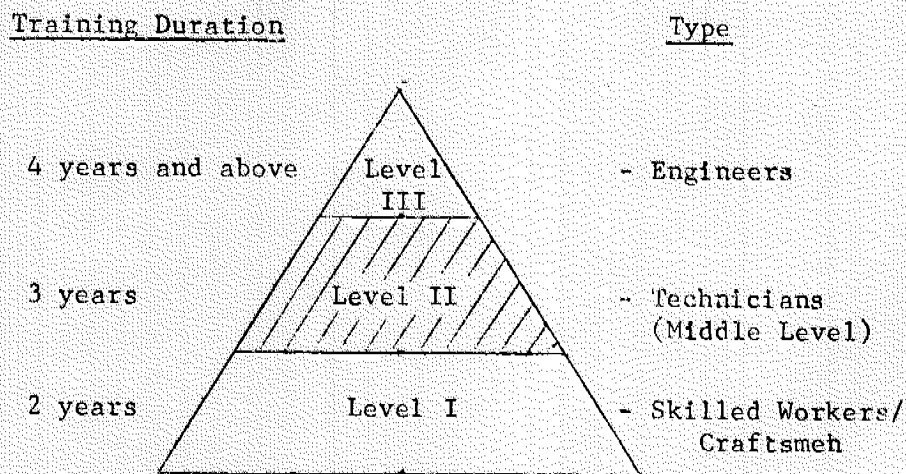


Figure 1 Technical Manpower Structure

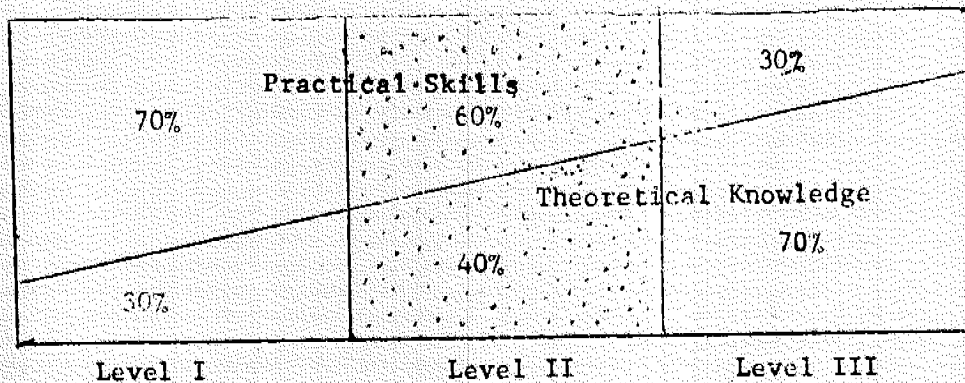


Figure 2 - Practical Skills-Knowledge Mix of Various Technical Occupations

- A Program evaluation (DIT) was conducted last 21-31 January 1986 with pilot TEIs, namely: MIST, Marikina and USP, Davao City. Among others, the salient findings are that the technician graduates are lacking adequate industrial training and instructional facilities. In addition, majority of the graduates did not seek employment but continued to pursue the DET program and other disciplines. Moreover, most of the graduates landed as machine operators rather than in technical-related jobs.
- A comparative study of 1985 MTI graduates with the DIT graduates has shown great differences in job titles as well as salaries received in favor of the 3-year technician program of MTI.

3. Concluding Statements

There is a pressing need to standardize the program duration for technician education in the country in order to insure quality and to facilitate program evaluation.

Plans for skill certification and accreditation which are in the pipeline necessitate the standardization of the training inputs, processes and outputs in technician education.

II. B DEFINITION OF A TECHNICIAN

It is generally accepted that the level of reasoning of a technician lies between that of a technologist and a craftsman. According to the Colombo Plan Staff College, a technician must develop the following abilities during his course of studies:

1. the ability to use and communicate information;
2. the ability to measure and make use of measurements;
3. the ability to choose materials and components and understand the processing of materials;
4. the ability to understand manufacturing and the commercial organization of their companies;
5. diagnostic ability; and
6. the ability to organize (but not necessarily supervise) and give direction to the work of others.

III. DIT DESIGN DATA FOR THE REVISION

The following data were presented to the revision team at various reunion prior to the creation of the task force.

- The new DIT program of studies must be of three (3) year duration (International Standards).
- The program of studies shall be of six (6) semesters of 18-20 weeks duration including one semester of OJT.
- A credit system must be implemented.
- The maximum load must be 21 credit/semester.
- The total contact hours for the student shall not exceed 34-36 hours/week.
- One semester of 35 hours x 18-20 weeks must be reserved for OJT.
- A coding system must be systematically designed for all program of studies.
- The first semester subjects are common to all the technologies (7 areas).

- The theoretical/practical combination or mix must be approximately 40% - 60%
- The program of studies must include in the second semester of the 1st year an "Introduction to Computer Science."
- The administrative aspect of the curriculum must be considered
- The group must adopt a common format of presentation
- The content of the detailed syllabus will be completed next summer during the TTPP

IV. METHODOLOGY

After studying the design data presented to the group by PMU, the task force revised MECS Order No. 38 and identified some problems specifically in the scheduling of the 1st year. It was agreed to have a general meeting every day to coordinate the first and the second semester. The Block syllabi were presented on time and a typing pool was organized to complete on standard forms all the syllabi of the technology areas. On the fifth day of the exercise, the groups were asked to prepare the Detailed Syllabi for the first year of the program of studies. These Detailed Syllabi will be used to prepare and/or upgrade the teachers during next summer T.T.T.P. During the summer program, teachers on training will have to complete the Teachers/Students Guide and also develop the corresponding Instructional Materials.

V. PARTICIPANTS

Manila Technician Institute

1. Benito S. Felix - Related Subjects
2. Nestor Fabian - Related Subjects
3. Rolando Duque - Welding and Fabrication Technology
4. Simeon Bondoc - Mechanical Technology
5. Avelino Cubangbang - Electronics Technology
6. Concepcion Balisi - Civil Technology
7. Juan Dulaca - RAC Technology

8. Rodelio Rivera - RAC Technology
9. Joseph Ulep - Mechanical Technology
10. Victorino T. Tabag - Automotive Technology/Wel & Fab Tech.
11. Aurelio Paa - Electrical Technology
12. Exequiel Abad - Welding and Fabrication Technology

Marikina Institute of Science and Technology

1. Sergio Santos - Related Subjects
2. Arturo Parcon - Related Subjects
3. Gloria Ascaño - Related Subjects

Bureau of Technical and Vocational Education

1. Anita Guardian
2. Joselito Layula

CEGIR Team

1. Jacques Dube - Team Leader
2. Rene Leblanc - Civil Technology
3. Guy Choiniere - Mechanical Technology/Welding & Fabrication
4. Gerard Parcnt - Automotive Technology
5. Marcel Toupin - Electrical/Electronics Technology
6. Jean Pierre Lalorç - Computer Science

VI. REVISED CURRICULUM

The Block syllabi are listed in alphabetical order; Automotive Technology, Civil Technology, Electrical Technology, Electronics Technology, Mechanical Technology, Refrigeration and Airconditioning Technology and Welding and Fabrication Technology.

Note: Included is also a course description for Introduction to Computer Science, the detailed syllabus is annexed in H.

AUTOMOTIVE TECHNOLOGY

REVISED BLOCK SYLLABUS FOR
AUTOMOTIVE TECHNOLOGY

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs/Wk. | Credi |
|----------------------|--------------------------------|---|---|---|---|---|---|
| | | | Lec. | Lab. | Shou | | |
| F I R S T Y E A R | F I R S T S E M E S T E R | Technical Drawing 101 Technical English 101 Math for Technology 101 Social Science 101 Technology 101 Applied Science 101 (Chemistry) Applied Science 111 (Physics) P.E. 101 CMT 11 | - 3 3 3 1 2 2 | 3 - - - - 3 3 | - - - - 12 - - | 3 3 3 3 13 5 5 | 1 3 3 3 5 3 3 (1.0) (1.5) |
| | 14 | 9 | 12 | 35 | 21 | | |
| F I R S T Y E A R | S E C O N D S E M E S T E R | Technical Drawing 102 Technical English 102 Math for Technology 102 Social Science 102 Technology 102 (Basic Electricity/ Electronics) Applied Science 102 (Materials) Applied Science 112 (Physics) Introduction to Computer Science Measurements P.E. 102 CMT 12 | - 3 3 3 1 2 2 1 - | 3 - - - 3 3 3 3 3 | - - - - - - - - - | 3 3 3 3 4 5 5 4 3 | 1 3 3 3 2 3 3 2 1 (1.0) (1.5) |
| 15 | 18 | - | 33 | 21 | | | |
| S U M M E R | | ON-THE-JOB TRAINING (Industrial Orientation) | 6 Weeks (288 Hours) | | | 5 | |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs./ Week | Credit |
|------------------------|-----------------|---|------------------------|------|------|----------------------------------|--------|
| | | | Lec. | Lab. | Shon | | |
| S E C O N D Y E A R | FIRST SEMESTER | Technical Drawing 201 | 0 | 3 | - | - | 1 |
| | | Technical English 201 | 3 | - | - | - | 3 |
| | | Math for Technology 201 | 3 | - | - | - | 3 |
| | | Work Ethics 201 | 1 | 1 | - | - | 2 |
| | | TECHNOLOGY | | | | | |
| | | Automotive Handtools, Equipment and Power Machines | 0 | 2 | - | - | 1 |
| | | Internal Combustion Engines | 2 | 2 | - | - | 2 |
| | | Automotive Electronics and Electrical Systems | 2 | 2 | - | - | 2 |
| | | Engine Fundamentals | 1 | 2 | - | - | 1 |
| | | Carburetion and Fuel Injection | 2 | 2 | - | - | 2 |
| | | Applied Fluid, Hydraulics and Pneumatics | 2 | 2 | - | - | 2 |
| | | Front Loading Geometry and Undercarriage Systems | 2 | 2 | - | - | 2 |
| | | Physical Education 201 | | | | | (1) |
| | | CMT 21 | | | | | (1.5) |
| | | | 18 | 18 | - | - | 21 |
| | SECOND SEMESTER | Technical Drawing 202 | 0 | 3 | - | - | 1 |
| | | Technical English 202 | 3 | - | - | - | 3 |
| | | Math for Technology 202 | 3 | - | - | - | 3 |
| | | Work Ethics 202 | 2 | - | - | - | 2 |
| | | TECHNOLOGY | | | | | |
| | | Motor Vehicle Inspection (Mechanical) and Electrical | 0 | 2 | - | - | 1 |
| | | Overhaul and Performance Tests | 1 | 2 | - | - | 2 |
| | | Power Conversion Systems | 1 | 1 | - | - | 1 |
| | | Power Trains | 2 | 2 | - | - | 2 |
| | | Mechanisms | 2 | 2 | - | - | 2 |
| | | Automobile Body | 2 | 2 | - | - | 2 |
| | | Component Reconditioning | 2 | 2 | - | - | 2 |
| | | Physical Education 202 | | | | | (1) |
| | | CMT 22 | | | | | (1.5) |
| | | | 18 | 16 | - | - | 21 |
| SUMMER | | ON-THE-JOB TRAINING (Supervised Industrial Training I) | 6 Weeks (288 Hours) | | | | 5 |

| YR. | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs./ Week | Credit | | |
|---------------|----------------|--|-----------------|--|------|----------------------------------|--------|----|------|
| | | | Lec. | Lab. | Shop | | | | |
| THIRD YEAR | FIRST SEMESTER | Diagnosis and Troubleshooting | 1 | 3 | -- | -- | 2 | | |
| | | Advance Internal Combustion Engines Servicing/Repair | 2 | 2 | -- | -- | (2.5) | | |
| | | Automotive Operations and Management Car Care Servicing, Emission Control and Tune-up | 2 | 0 | -- | -- | 2 | | |
| | | Plant Designs | 2 | 2 | -- | -- | (2) | | |
| | | Power Trains Servicing and Repair | 0 | 3 | -- | -- | 1.5 | | |
| | | Front Line Supervision | 2 | 3 | -- | -- | 3.0 | | |
| | | OPTION A: Transport Services Advance Undercarriage Servicing and Repair | 2 | 0 | -- | -- | 2 | | |
| | | Advance Body Repair and Painting | 2 | 3 | -- | -- | 3.0 | | |
| | | OPTION B: Heavy Equipment Operations and Maintenance Heavy Earth Moving Equipment Servicing | 2 | 3 | -- | -- | 3.0 | | |
| | | Farm Equipment Servicing | 2 | 3 | -- | -- | 3.0 | | |
| | | | | | 15 | 19 | -- | -- | 21.0 |
| | | | SECOND SEMESTER | ON-THE-JOB TRAINING (Supervised Industrial Training II) | | 912 Hours (19 weeks) | | 36 | 12 |

Prepared by:

VICTORINO TABAG
TUP-MTI

GERARD PARENT
CEGIR

CIVIL TECHNOLOGY

REVISED BLOCK SYLLABUS FOR
CIVIL TECHNOLOGY

| YR. | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs./ Week | CREDIT |
|----------------------|-----------------|---|------------|------|------------------------|----------------------------------|--------|
| | | | Lec. | Lab. | Shop | | |
| F I R S T Y E A R | FIRST SEMESTER | Technology 101 (Basic Tech. Processes) | 1 | - | 12 | 13 | 5 |
| | | Technical Drawing 101 | 0 | 3 | - | 3 | 1 |
| | | Applied Science 101 (Chem.) | 2 | 3 | - | 5 | 3 |
| | | Applied Science 111 (Physics) | 2 | 3 | - | 5 | 3 |
| | | Technical English 101 | 3 | - | - | 3 | 3 |
| | | Math. for Technology 101 | 3 | - | - | 3 | 3 |
| | | Social Science 101 | 3 | - | - | 3 | 3 |
| | | Physical Education 101 | | | | | (1.0) |
| | | CMT 11 | | | | | (1.5) |
| | | | 14 | 9 | 12 | 35 | 21 |
| F I R S T | SECOND SEMESTER | Technical Drawing 102 | 0 | 3 | - | 3 | 1 |
| | | Technical English 102 | 3 | - | - | 3 | 3 |
| | | Applied Science 102 (Mat'ls.) | 2 | 3 | - | 5 | 3 |
| | | Applied Science 112 (Physics) | 2 | 3 | - | 5 | 3 |
| | | Math. for Technology 102 | 3 | - | - | 3 | 3 |
| | | Technology 102 (Basic Electricity/Electronics) | 1 | 3 | - | 4 | 2 |
| | | Intro. to Computer Science | 1 | 3 | - | 4 | 2 |
| | | Measurements | 0 | 3 | - | 3 | 1 |
| | | Social Science 102 | 3 | - | - | 3 | 3 |
| | | Physical Education 102 | | | | | (1.0) |
| | | CMT 12 | | | | | (1.5) |
| | | | 15 | 18 | | 33 | 21 |
| S U M M E R | | On-the-Job Training (Industrial Orientation) | | | 288 Hours (6 Weeks) | | 5 |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs/Wk | CREDIT |
|--------|--------|---|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--|
| | | | Lec. | Lab. | Shop | | |
| SECOND | FIRST | Technical Drawing 201 Technical English 201 Math. for Technology 201 Work Ethics 201 Analysis of Structures 201 Applied Hydraulics Applied Surveying 201 Building Technology 201 Physical Education 201 CIT 21 | 0 3 3 2 2 1 2 2 | 3 - - - 3 3 6 6 | - - - - - - - - | 3 3 3 2 5 4 8 8 | 1 3 3 2 3 2 4 4 (1.0) (1.5) |
| | | | 15 | 21 | - | 36 | 22 |
| SECOND | SECOND | Technical Drawing 202 Math. for Technology 202 Technical English 202 Work Ethics 202 Analysis of Structures 202 Applied Surveying 202 Practical Sanitation Quality Control 202 Physical Education 202 CIT 22 | 0 3 3 2 2 2 1 1 | 3 - - - 3 6 3 6 | - - - - - - - - | 3 3 3 2 5 8 3 7 | 1 3 3 2 3 4 2 3 (1.0) (1.5) |
| | | | 14 | 21 | - | 34 | 21 |
| SUMMER | | On-the-Job Training (Supervised Industrial Training I) | 288 Hours (6 Weeks) | | | | 5 |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs/Wk | CREDIT |
|----------------------|--------------------------------|--|-------------------------|------|------|---------------------------|--------|
| | | | Lec. | Lab. | Shop | | |
| T H I R D Y E A R | F I R S T S E M E S T E R | Building Technology 301 | 3 | - | - | 3 | 3 |
| | | Advanced Surveying | 2 | 6 | - | 8 | 4 |
| | | Coil Testing & Investigation | 2 | 6 | - | 8 | 4 |
| | | Estimating | 1 | 3 | - | 4 | 2 |
| | | Design of Structures | 2 | 3 | - | 5 | 3 |
| | | Construction Management | 3 | - | - | 3 | 3 |
| | | Civil Structures Maintenance | 1 | 3 | - | 4 | 2 |
| | | | | | 14 | 21 | |
| T H I R D Y E A R | S E C O N D S E M E S T E R | On-the-Job Training (Supervised Industrial Training II) | 912 Hours (19 Weeks) | | | 36 | 12 |
| | | | | | | | |

Prepared by:

Concepcion A. Balisi
TUP-ITI

Rene Leblanc
CECIR

ELECTRICAL TECHNOLOGY

REVISED BLOCK SYLLABUS FOR
ELECTRICAL TECHNOLOGY

| YEAR | SEM. | S U B J E C T S | Hours/Week | | Total No. of Hrs/ Week | Credit |
|------------|-----------------|---|------------------------|----------|---------------------------------|--------------|
| | | | Lec. | Lab/Shop | | |
| FIRST YEAR | FIRST SEMESTER | Technology 101 (Basic Technology Processes) | 1 | 12 | 13 | 5 |
| | | Technical Drawing 101 | - | 3 | 3 | 1 |
| | | Applied Science 101 (Chemistry) | 2 | 3 | 5 | 3 |
| | | Applied Science 111 (Physics) | 2 | 3 | 5 | 3 |
| | | Technical English 101 | 3 | - | 3 | 3 |
| | | Mathematics 101 | 3 | - | 3 | 3 |
| | | Social Science 101 | 3 | - | 3 | 3 |
| | | Physical Education 101 CMT 11 | | | | (1) (1.5) |
| | | | 14 | 21 | 35 | 21 |
| FIRST YEAR | SECOND SEMESTER | Technical Drawing 102 | - | 3 | 3 | 1 |
| | | Technical English 102 | 5 | - | 3 | 3 |
| | | Applied Science 102 (Properties and Characteristics of Materials) | 2 | 3 | 5 | 3 |
| | | Applied Science 112 (Physics) | 2 | 3 | 5 | 3 |
| | | Mathematics 102 | 3 | - | 3 | 3 |
| | | Technology 102 (Basic Electricity/Electronics) | 1 | 3 | 4 | 2 |
| | | Introduction to Computer Science | 1 | 3 | 4 | 2 |
| | | Measurements | - | 3 | 3 | 1 |
| | | Social Science 102 | 3 | - | 3 | 3 |
| | | Physical Education 102 CMT 12 | | | | (1) (1.5) |
| | | | 15 | 18 | 33 | 21 |
| SUMMER | | ON-THE-JOB TRAINING (Industrial Orientation) | 238 Hours (6 weeks) | | | 5 |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | Total No of Hrs./ Week | Credit |
|------------------------|--------------------------------|---|------------------------|----------|---------------------------------|--------|
| | | | Lec. | Lab/Shop | | |
| S E C O N D Y E A R | F I R S T S E M E S T E R | Technical Drawing 201 - ELC | - | 3 | 3 | 1 |
| | | Technical English 201 | 3 | - | 3 | 3 |
| | | Mathematics 201 - ELC/ELEX. | 3 | - | 3 | 3 |
| | | Work Ethics 201 | 2 | - | 2 | 2 |
| | | ELC 201 - 1. Electrical Principles | 2 | 3 | 3 | 3 |
| | | ELC 201 - 2. Electrical Installation I | 0 | 6 | 6 | 2 |
| | | ELC 201 - 3 Electrical/Electronics Measuring Instruments | 2 | - | 2 | 2 |
| | | ELC 201 - 4 Electrical Machines | 2 | 9 | 11 | 5 |
| | | Physical Education 201 | | | | (1.0) |
| | | CMT 21 | | | | (1.5) |
| | | | 14 | 21 | 35 | 21 |
| S E C O N D Y E A R | S E C O N D S E M E S T E R | Technical Drawing 202-ELC | - | 3 | 3 | 1 |
| | | Technical English 202 | 3 | - | 3 | 3 |
| | | Mathematics 202 - ELC/ELEX. | 3 | - | 3 | 3 |
| | | Work Ethics 202 | 2 | - | 2 | 2 |
| | | ELC 202 - 1. Electrical Installation II | - | 6 | 6 | 2 |
| | | ELC 202 - 2 Signal and Communication Installation | - | 3 | 3 | 1 |
| | | ELC 202 - 3. Motor Controllers and Sequential Control | 2 | 3 | 5 | 3 |
| | | ELC 202 - 4. Power Production | 2 | 3 | 5 | 3 |
| | | ELC 202 - 5. Industrial Electronics | 2 | 3 | 5 | 3 |
| | | Physical Education 202 | | | | (1.0) |
| | | CMT 22 | | | | (1.5) |
| | | | 14 | 21 | 35 | 21 |
| S U M M E R | | ON-THE-JOB TRAINING (Supervised Industrial Training I) | 288 Hours (6 weeks) | | | 5 |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | Total No of Hrs/Week | Credit | |
|----------------------|--------------------------------|--|------------|-------------------------|----------------------|--------|----|
| | | | Lec | Lab/Shop | | | |
| T H I R D Y E A R | F I R S T S E M E S T E R | ELC 301 - 1 Automatic Control Sys. | - | 15 | 15 | 5 | |
| | | ELC 301 - 2 Electrical Distribu- tion and Transmission | 3 | 3 | 6 | 4 | |
| | | ELC 301 - 3 Illumination Designs | 3 | - | 3 | 3 | |
| | | ELC 301 - 4 Introduction to Basic Programming | 2 | 3 | 5 | 3 | |
| | | Leadership and Production | 2 | - | 2 | 2 | |
| | | Planning 301 - ELC | - | - | - | - | |
| | | Electrical Maintenance 301-ELC | 2 | - | 2 | 2 | |
| | | Entrepreneurship 301-ELC | 2 | - | 2 | 2 | |
| | | | | 14 | 21 | 35 | 21 |
| | | | | | | | |
| | S E C O N D S E M E S T E R | ON-THE-JOB TRAINING (Supervised Industrial Training II) | | 912 Hours (19 Weeks) | 36 | 12 | |

Prepared By:

AURELIO P. PAA
TUP-MTI

MARCEL TOUPIN
CEGIR

ELECTRONICS TECHNOLOGY

REVISED BLOCK SYLLABUS FOR
ELECTRONICS TECHNOLOGY

| YEAR | SEM. | S U B J E C T S | Hours/Week | | Total No. of Hrs./ Wk. | CREDIT |
|----------------------|--------------------------------|---|------------------------|------------|---------------------------------|--------|
| | | | Lec. | Lab./ Shop | | |
| F I R S T Y E A R | F I R S T S E M E S T E R | Technology 101 (Basic Processes) | 1 | 12 | 13 | 5 |
| | | Technical Drawing 101 | 0 | 3 | 3 | 1 |
| | | Applied Science 101 (Gen. Chem.) | 2 | 3 | 5 | 3 |
| | | Applied Science 111 (Physics I) | 2 | 3 | 5 | 3 |
| | | Technical English 101 | 3 | - | 3 | 3 |
| | | Math. for Technology 101 | 3 | - | 3 | 3 |
| | | Social Science 101 | 3 | - | 3 | 3 |
| | | Physical Education 101 | | - | | (1.0) |
| | | CIT 11 | | - | | (1.5) |
| | | | 14 | 21 | 35 | 21 |
| F I R S T Y E A R | S E C O N D S E M E S T E R | Technical Drawing 102 | 0 | 3 | 3 | 1 |
| | | Technical English 102 | 3 | - | 3 | 3 |
| | | Applied Science 102 (Materials) | 2 | 3 | 5 | 3 |
| | | Applied Science 112 (Physics II) | 2 | 3 | 5 | 3 |
| | | Math. for Technology 102 | 3 | - | 3 | 3 |
| | | Technology 102 (Basic Elect. & Elec.) | 1 | 3 | 4 | 2 |
| | | Intro. to Computer Science | 1 | 3 | 4 | 2 |
| | | Measurements | 0 | 3 | 3 | 1 |
| | | Social Science 102 | 3 | - | 3 | 3 |
| | | Physical Education 102 | | - | | (1.0) |
| | | CIT 12 | | - | | (1.5) |
| | | | 15 | 18 | 33 | 21 |
| S U M M E R | | On-the-Job Training (Industrial Orientation) | 288 Hours (6 Weeks) | | | 5 |

| YEAR | SEM. | SUBJECTS | Hours/Week | | Total No. of Hrs./Week | CREDIT |
|-------------|-----------------|---|------------------------|-----------|------------------------|--------|
| | | | Lec. | Lab./Shop | | |
| SECOND YEAR | FIRST SEMESTER | Technical Drawing 201 | 0 | 3 | 3 | 1 |
| | | Technical English 201 | 3 | - | 3 | 3 |
| | | Math. for Technology 201 | 3 | - | 3 | 3 |
| | | Work Ethics 201 | 2 | - | 2 | 2 |
| | | Basic Electronics | 3 | 3 | 6 | 4 |
| | | Electrical Principles | 1 | 3 | 4 | 2 |
| | | Digital Electronics | 1 | 3 | 4 | 2 |
| | | Electronics Workshop I | 0 | 6 | 6 | 2 |
| | | Electrical Instrument and Meas. | 1 | 3 | 4 | 2 |
| | | Physical Education 201 | | - | - | (1.0) |
| GT 21 | | - | - | (1.5) | | |
| | | | 14 | 21 | 35 | 21 |
| SECOND YEAR | SECOND SEMESTER | Technical Drawing 202 | 0 | 3 | 3 | 1 |
| | | Math. for Technology 202 | 3 | - | 3 | 3 |
| | | Technical English 202 | 3 | - | 3 | 3 |
| | | Work Ethic 202 | 2 | - | 2 | 2 |
| | | Basic Electronics Communication | 3 | 3 | 6 | 4 |
| | | Electronic Instrumentation and Pneumatics | 1 | 3 | 4 | 2 |
| | | Advanced Digital Techniques | 2 | 3 | 5 | 3 |
| | | Industrial Electronics Circuits and Devices | 2 | 3 | 5 | 3 |
| | | Electronics Workshop II | 0 | 3 | 3 | 1 |
| | | Physical Education 202 | | | | (1.0) |
| GT 22 | | | | (1.5) | | |
| | | | 16 | 18 | 34 | 22 |
| SUMMER | | On-the-Job Training (Supervised Industrial Training I) | 238 Hours (6 Weeks) | | | 5 |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | Total No. of Hrs./ Week | CREDIT | |
|----------------------|------------------------------|--|--|-------------------------|----------------------------------|--------|----|
| | | | Lec. | Lab./Shop | | | |
| T H I R D Y E A R | F I R S T S E M E S T E R | Advanced Electronics Communication | 3 | 3 | 6 | 4 | |
| | | Television Systems | 3 | 6 | 9 | 5 | |
| | | Industrial Process Control | 1 | 3 | 4 | 2 | |
| | | Microprocessors and Computers | 2 | 3 | 5 | 3 | |
| | | Electronics Practicum | 0 | 6 | 6 | 2 | |
| | | Production Planning and Quality Control | 2 | - | 2 | 2 | |
| | | Entrepreneurship | 2 | - | 2 | 2 | |
| | | | | | | | |
| | | | | 13 | 21 | 34 | 20 |
| | | S E C O N D S E M E S T E R | On-the-Job Training (Supervised Industrial Training II) | 916 Hours (19 Weeks) | | 36 | 12 |

Prepared by:

AVELINO F. CUBANGANG
TUP-ITI

MARCEL TOUPIN
CEGIR

MECHANICAL TECHNOLOGY

REVISED BLOCK SYLLABUS FOR
MECHANICAL TECHNOLOGY

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs./ Week | Cred |
|----------------------|--------------------------------|--|------------|------|------------------------|----------------------------------|-------|
| | | | Lec. | Lab. | Shop | | |
| F I R S T Y E A R | F I R S T S E M E S T E R | Technology 101 | 1 | - | 12 | 13 | 5 |
| | | Technical Drawing 101 | 0 | 3 | - | 3 | 1 |
| | | Applied Science 101 (Chemistry) | 2 | 3 | - | 5 | 3 |
| | | Applied Science 111 (Physics) | 2 | 3 | - | 5 | 3 |
| | | Technical English 101 | 3 | - | - | 3 | 3 |
| | | Mathematics for Technology 101 | 3 | - | - | 3 | 3 |
| | | Social Science 101 | 3 | - | - | 3 | 3 |
| | | Physical Education 101 | | | | | (1.0) |
| | | CMT II | | | | | (1.5) |
| | | | 14 | 9 | 12 | 35 | 21 |
| F I R S T Y E A R | S E C O N D S E M E S T E R | Technical Drawing 102 | 0 | 3 | - | 3 | 1 |
| | | Technical English 102 | 3 | - | - | 3 | 3 |
| | | Applied Science 102 (Materials) | 2 | 3 | - | 5 | 3 |
| | | Applied Science 112 (Physics) | 2 | 3 | - | 5 | 3 |
| | | Mathematics for Technology 102 | 3 | - | - | 3 | 3 |
| | | Technology 102 (Basic Electricity/ Electronics) | 1 | 3 | - | 4 | 2 |
| | | Introduction to Computer Science | 1 | 3 | - | 4 | 2 |
| | | Measurements | 0 | 3 | - | 3 | 1 |
| | | Social Science 112 | 3 | - | - | 3 | 3 |
| | | Physical Education 102 | | | | | (1.0) |
| | | CMT 12 | | | | | (1.5) |
| | | | 15 | 18 | | 33 | 21 |
| S U M M E R | | ON-THE-JOB TRAINING (Industrial Orientation) | | | 288 Hours (6 Weeks) | | 5 |

| | |
|------------------------------|---------------|
| First Year - First Semester | - Lecture 40% |
| Laboratory | - 25% |
| Shop | - 34.2% |
| Second Year- Second Semester | - Lecture 45% |
| Laboratory | - 55% |
| Shop | - 0 |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hours/ Week | CREDIT |
|------------------------|--------------------------------|--|------------|------|------|-----------------------------------|--------|
| | | | Lec. | Lab. | Shop | | |
| S E C O N D Y E A R | F I R S T S E M E S T E R | Technical Drawing 201 | 0 | 3 | - | 3 | 1 |
| | | Technical English 201 | 3 | - | - | 3 | 3 |
| | | Math. for Technology 201 | 3 | - | - | 3 | 3 |
| | | Work Ethics Technology | 2 | - | - | 2 | 2 |
| | | Introduction to Machine Shop | 1 | - | - | 1 | 1 |
| | | Drill Press and Drilling Principles | - | - | 3 | 3 | 1 |
| | | Lathe Work | 1 | - | 6 | 7 | 3 |
| | | Metrology | 1 | - | - | 1 | 2 |
| | | Basic Heat Treatment | 1 | - | - | 1 | 1 |
| | | Milling Machine | 1 | - | 6 | 7 | 3 |
| | | Principles of Tools and Die | 1 | - | 3 | 4 | 2 |
| | | Physical Education 202 | | | | | (1.0) |
| | | GHT 21 | | | | | (1.5) |
| | | | 14 | 3 | 18 | 35 | 22 |
| S E C O N D Y E A R | S E C O N D S E M E S T E R | Technical Drawing 202 | 0 | 3 | - | 3 | 1 |
| | | Math for Technology 202 | 3 | - | - | 3 | 3 |
| | | Technical English 202 | 3 | - | - | 3 | 3 |
| | | Work Ethics 202 | 2 | - | - | 2 | 2 |
| | | Technology | | | | | |
| | | Grinding Machine and Grinding Principles | 1 | - | 6 | 7 | 3 |
| | | Jigs Boring & Jigs Grinding | 1 | - | 3 | 4 | 2 |
| | | Applied Metrology | 1 | - | 3 | 4 | 2 |
| | | Heat Treatment | 1 | - | - | 1 | 1 |
| | | Maintenance | 1 | - | - | 1 | 1 |
| | | Advance Benchwork | 1 | - | 6 | 7 | 3 |
| | | Physical Education 202 | | | | | (1.0) |
| | | GHT 22 | | | | | (1.5) |
| | | 48% Lecture 52% Lab/Shop | | | | | |
| | | | 14 | 3 | 18 | 35 | 21 |
| S U M M E R | | On-the-Job Training (Supervised Industrial Training II) | | | | 208 Hours (6 Weeks) | 5 |

| | | |
|-----------------|---------|-------|
| First Semester | Lecture | - 40% |
| | Lab. | - 9% |
| | Shop | - 51% |
| Second Semester | Lecture | - 40% |
| | Lab. | - 9% |
| | Shop | - 51% |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs./ Week | Credit |
|----------------------|--------------------------------|--|------------|-------------------------|------|----------------------------------|--------|
| | | | Lec. | Lab. | Shop | | |
| T H I R D Y E A R | F I R S T S E M E S T E R | Applied Machine Shop Mathematics | 1 | | | 1 | 1 |
| | | Advance Blue Print Reading | 1 | 3 | | 4 | 2 |
| | | Standards and Tolerances | 1 | | 3 | 1 | 1 |
| | | Gauge Making | | | 3 | 3 | 1 |
| | | Principles of EDM | 1 | 1 | | 2 | 2 |
| | | Process Sheets | 1 | | | 1 | 1 |
| | | Planning and Scheduling | 2 | | | 2 | 2 |
| | | MTM | 2 | | 3 | 5 | 3 |
| | | Estimating and Costing | 1 | | | 1 | 1 |
| | | Design (Jigs, Fixtures, Tool and Die) | 1 | | 3 | 4 | 2 |
| | | Management and Project Study | 1 | | 3 | 4 | 2 |
| | | Plant Lay-out and Preventive Maintenance | 1 | | 3 | 4 | 2 |
| | | Inspection and Quality Control | | 3 | | 3 | 1 |
| | | | | | 13 | 7 | 18 |
| | S E C O N D S E M E S T E R | ON-THE-JOB TRAINING (Supervised Industrial Training II) | | 912 Hours (19 Weeks) | | 36 | 12 |

First Semester - Lecture - 37%
 Laboratory - 20%
 Shop - 43%
 Mean Average for 5 Semesters
 Theory - 65%
 Practical - 35%

Prepared by:

GUY CHOINIERE
CEGIR

JOSEPH C. ULEP
MTI-TUP

SIMEON BONDOC
MTI-TUP

REFRIGERATION & AIR - CONDITIONING

REVISED BLOCK SYLLABUS FOR
REFRIGERATION AND AIR-CONDITIONING
TECHNOLOGY

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs/Wk | Credit |
|----------------------|--------------------------------|---|------------------------|------|------|------------------------------|--------|
| | | | Lec. | Lab. | Shop | | |
| F I R S T Y E A R | F I R S T S E M E S T E R | Technology 101 | 1 | - | 12 | 13 | 5 |
| | | Technical Drawing 101 | 0 | 3 | - | 3 | 1 |
| | | Applied Science 101 (Chemistry) | 2 | 3 | - | 5 | 5 |
| | | Applied Science 111 (Physics) | 2 | 3 | - | 5 | 3 |
| | | Technical English 101 | 3 | - | - | 3 | 3 |
| | | Math for Technology 101 | 3 | - | - | 3 | 3 |
| | | Social Science 101 | 3 | - | - | 3 | 3 |
| | | Work Ethics 101 | 1 | - | - | 1 | 1 |
| | | Physical Education 101 | | | | | (1.0) |
| | | CMT 11 | | | | | (1.5) |
| | | | 15 | 9 | 12 | 36 | 24 |
| | S E C O N D S E M E S T E R | Technical Drawing 102 | 0 | 3 | - | 3 | 1 |
| | | Technical English 102 | 3 | - | - | 3 | 3 |
| | | Applied Science 102 (Materials) | 2 | 3 | - | 5 | 5 |
| | | Applied Science 112 (Physics) | 2 | 3 | - | 5 | 3 |
| | | Math for Technology 102 | 3 | - | - | 3 | 3 |
| | | Technology 102 | 1 | 3 | - | 4 | 2 |
| | | Introduction to Computer Science | 1 | 3 | - | 4 | 2 |
| | | Engineering Measurement | 0 | 3 | - | 3 | 3 |
| | | Social Science 102 | 3 | - | - | 3 | 3 |
| | | Physical Education 102 | | | | | (1.0) |
| | | CMT 12 | | | | | (1.5) |
| | | | 15 | 18 | - | 33 | 23 |
| SUMMER | | ON-THE-JOB TRAINING (Industrial Orientation) | 288 Hours (6 Weeks) | | | | 5 |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs./ Week | Credit |
|------------------------|-----------------|---|--|--|--|--|--|
| | | | Lec. | Lab. | Shop | | |
| S E C O N D Y E A R | FIRST SEMESTER | Technical Drawing 201 Technical English 201 Math for Technology 201 Work Ethics 201 Refrigeration Principle 201 Mechanics of Fluids 201 Ancillary Equipment 201 Mechanics of Solids 201 Tribology (Laboratory) Workshop Technology 201 Physical Education 201 CMT 21 | 0 3 3 1 3 2 1 1 0 0 | 3 - - - 3 3 3 0 3 - | - - - - - - - - - 6 | 3 3 3 1 6 5 4 1 3 6 | 1 3 3 1 4 3 2 1 1 2 (1.0) (1.5) |
| | | | 14 | 15 | 6 | 35 | 21 |
| S E C O N D Y E A R | SECOND SEMESTER | Technical Drawing 202 Math for Technology 202 Technical English 202 Work Ethics 202 Air Conditioning Principles 202 Mechanics of Fluids 202 Ancillary Equipment 202 Mechanics of Solid 202 Workshop Technology 202 Physical Education 202 CMT 22 | 0 3 3 2 2 1 2 1 0 | 3 - - - 3 3 3 3 0 | - - - - - - - - 6 | 3 3 3 2 5 4 5 4 6 | 1 3 3 2 3 2 3 2 2 (1.0) (1.5) |
| | | | 14 | 15 | 6 | 35 | 21 |
| SUMMER | | ON-THE-JOB TRAINING (Supervised Industrial Training I) | 288 Hours (6 weeks) | | | | 5 |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs./Wk | Credit | |
|----------------------|------------------------------|----------------------------------|--|-------------------------|------|----------------------------|--------|----|
| | | | Lec. | Lab. | Shop | | | |
| T H I R D Y E A R | F I R S T S E M E S T E R | Heat Load Calculations 301 | 2 | 3 | - | 5 | 4 | |
| | | Air Handling Systems 301 | 1 | 3 | - | 4 | 2 | |
| | | Controls and Instrumentation 301 | 2 | 3 | - | 5 | 3 | |
| | | Cold Storage System 301 | 2 | 6 | - | 8 | 4 | |
| | | Service Management 301 | 2 | 3 | - | 5 | 3 | |
| | | Plant Designing 301 | 2 | 3 | - | 5 | 3 | |
| | | Special Application 301 | 1 | 3 | - | 4 | 2 | |
| | | | | 12 | 24 | - | 36 | 21 |
| | | S E C O N D S E M E S T E R | ON-THE-JOB TRAINING (Supervised Industrial Training II) | 912 Hours (19 Weeks) | | | 36 | 12 |

Prepared By:

JUAN M. DULACA
TUP-MTI

RODELIO RIVERA
TUP-MTI

RICARDO GENEROSO
TUP-MTI

WELDING & FABRICATION

REVISED BLOCK SYLLABUS FOR
WELDING AND FABRICATION TECHNOLOGY

| YEAR | SEM. | SUBJECTS | Hours/Week | | | Total No. of Hrs./ Week | CREDIT |
|---------------|-----------------|---|------------------------|------|------|----------------------------------|--------|
| | | | Lec. | Lab. | Shop | | |
| FIRST YEAR | FIRST SEMESTER | Technical Drawing 101 | - | 3 | - | 3 | 1 |
| | | Technical English 101 | 3 | - | - | 3 | 3 |
| | | Math. for Technology 101 | 3 | - | - | 3 | 3 |
| | | Social Science 101 | 3 | - | - | 3 | 3 |
| | | Technology 101 | 1 | - | 12 | 13 | 5 |
| | | Applied Science 101 (Chemistry) | 2 | 3 | - | 5 | 3 |
| | | Applied Science 111 (Physics) | 2 | 3 | - | 5 | 3 |
| | | Physical Education 101 | | | | | (1.0) |
| | | CI/T 11 | | | | | (1.5) |
| | | | 14 | 9 | 12 | 35 | 21 |
| FIRST YEAR | SECOND SEMESTER | Technical Drawing 102 | - | 3 | - | 3 | 1 |
| | | Technical English 102 | 3 | - | - | 3 | 3 |
| | | Math. for Technology 102 | 3 | - | - | 3 | 3 |
| | | Social Science 102 | 3 | - | - | 3 | 3 |
| | | Technology 102 (Basic Electricity) | 1 | 3 | - | 4 | 2 |
| | | Applied Science 102 (Materials) | 2 | 3 | - | 5 | 3 |
| | | Applied Science 112 (Physics) | 2 | 3 | - | 5 | 3 |
| | | Introduction to Computer Science | 1 | 3 | - | 4 | 2 |
| | | Measurements | - | 3 | - | 3 | 1 |
| | | Physical Education 102 | | | | | (1.0) |
| | | CI/T 12 | | | | | (1.5) |
| | | | 15 | 13 | - | 33 | 21 |
| SUMMER | | On-the-Job Training (Industrial Orientation) | 288 Hours (6 Weeks) | | | | 5 |

| YR. | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs./ Week | Credit |
|--|--|---|------------------------|------|------|----------------------------------|--------|
| | | | Lec. | Lab. | Shop | | |
| S E C O N D Y E A R | F I R S T S E M E S T E R | Technical Drawing 201 | - | 3 | - | 3 | 1 |
| | | Technical English 201 | 3 | - | - | 3 | 3 |
| | | Math. for Technology 201 | 3 | - | - | 3 | 3 |
| | | Work Ethics 201 | 2 | - | - | 2 | 2 |
| | | Technology 201 (Welding Fundamentals) | 2 | - | 8 | 10 | 4 |
| | | Metallurgy and Heat Treatment | 2 | 3 | - | 5 | 3 |
| | | Fundamentals of Welding Design and Fabrication | 3 | 3 | - | 6 | 3 |
| | | Basic Electronics | 2 | - | - | 2 | 2 |
| | | Physical Education 201 | | | | | (1.0) |
| | | CMT 21 | | | | | (1.5) |
| | | | 17 | 9 | 8 | 34 | 21 |
| S E C O N D Y E A R | S E C O N D S E M E S T E R | Technical Drawing 202 | - | 3 | - | 3 | 1 |
| | | Technical English 202 | 3 | - | - | 3 | 3 |
| | | Math. for Technology 201 | 3 | - | - | 3 | 3 |
| | | Work Ethics 202 | 2 | - | - | 2 | 2 |
| | | Technology 202 (Advance Welding Processes) | 2 | - | 8 | 10 | 4 |
| | | Pattern Development | 1 | - | 3 | 4 | 2 |
| | | Welding Mechanics | 2 | 3 | - | 5 | 3 |
| | | Welding Science | 3 | 1 | - | 4 | 3 |
| | | Physical Education 202 | | | | | (1.0) |
| | | CMT 22 | | | | | (1.5) |
| | | | 16 | 7 | 11 | 34 | 21 |
| SUMMER | | On-the-Job Training (Supervised Industrial Training I) | 288 Hours (6 Weeks) | | | | 5 |

| YEAR | SEM. | S U B J E C T S | Hours/Week | | | Total No. of Hrs./ Week | CREDIT |
|----------------------|----------------|---|-------------------------|------|------|----------------------------------|--------|
| | | | Lec. | Lab. | Shop | | |
| T H I R D Y E A R | FIRST SEMESTER | Inspection and Quality Control | 2 | 6 | - | 8 | 4 |
| | | Welding Codes, Rules, Regulations and Specification | 2 | - | - | 2 | 2 |
| | | Procedure and Welder Qualification | 2 | - | - | 2 | 2 |
| | | Industrial Plant Maintenance | 2 | 3 | - | 5 | 3 |
| | | Welding Management | 3 | - | - | 3 | 3 |
| | | Planning and Costing | 3 | - | - | 3 | 3 |
| | | Construction Methods and Projects | 2 | - | 0 | 11 | 4 |
| | | | 16 | 9 | 9 | 34 | 21 |
| SECOND SEMESTER | | On-the-Job Training (Supervised Industrial Training II) | 912 Hours (19 Weeks) | | | 36 | 12 |

Prepared by:

GUY CHOINIERE
CEGIR

VICTORINO TABAG
TUP-MTI

ROLANDO DUQUE
TUP-MTI

EXEQUIEL ABAD
TUP-MTI