PROGRAM
DIPLOMA KEJURUTERAAN KIMIA (EH110)

PAKEJ 3

FAKULTI KEJURUTERAAN KIMIA
UNIVERSITI TEKNOLOGI MARA
COURSE INFORMATION

Course Code : BEL 120
Course Name : CONSOLIDATING LANGUAGE SKILL
Level:
[Diploma/Bachelor/Master/PhD] : Diploma
Credit Hours : 3
Contact Hours : 6
Course Status[Core/Non-Core] : Core
Pre-requisite : Placement Test Result – Band 7 and Below Or SPM Grade For English – B and Below

Course Objective

By the end of the course, students should be able to:

i. Read and analyze passages and articles on general topics
ii. Write grammatically correct sentences
iii. Write well-organized and coherent essays
iv. Listen to and identify main ideas and supporting details
v. Communicate accurately, appropriately and fluently in specific academic and social situations

Course Description

This course is designed for students whose English language proficiency is at the basic or intermediate levels. It aims to raise their level of proficiency in the language to the intermediate level. This aim is achieved through the integration of the four skills of reading, writing, speaking and listening, with appropriate consideration given to building an appropriate working knowledge of intermediate-level grammar.
MAKLUMAT KURSUS

Kod Kursus : CTU 101
Name Kursus : PRINSIP-PRINSIP ASAS ISLAM

Peringkat
[Diploma/Bachelor/Master/PhD] : Diploma

Unit Kredit : 2
Jam Temu : 2
Bahagian [1/2/3/4/5/6] : 1
Status kursus : Kursus Universiti
Pra-syarat : -

Objektif Kursus

Setelah mengikuti kursus ini pelajar dapat :
i. Memahami prinsip asas islam secara jelas dan menyeluruh.
ii. Menghayati akidah sebagai teras kehidupan.
iii. Melaksana ibadah, akhlak dan syariat dalam pembangunan diri, masyarakat dan negara.

Deskripsi Kursus

Kursus ini mendedahkan kepada pelajar mengenai Prinsip Asas Islam. Fokus utama kursus ini ialah akidah, syariat, ibadat dan akhlak dengan menekankan kepentingan kefahaman dan penghayatan akidah serta perlaksanaan syariat, ibadat dan akhlak dalam kehidupan sehari-hari.
COURSE INFORMATION

Course Code : CSC 123
Course Name : COMPUTER PROGRAMMING

Level
[Diploma/Bachelor /Master /PhD] : Diploma

Credit Hours : 4
Contact Hours : 4


Course Status [Core/Non-Core] : Core

Pre-requisite : Nil

Course Objective

After completing this course, the students should be able to:
  i. Appreciate object-oriented event-driven program design and development process.
  ii. Use the Visual Basic Integrated development environment.
  iii. Explain the concept of objects, properties and methods
  iv. Develop good programming skills by utilizing a modern programming methodology, which includes problem solving techniques and structured programming.

Course Description

This course covers an introduction to Visual Basic (VB) software package. Visual Basic is used to design windows applications. VB codes and experiment will be introduced during the design phase of windows applications. The aim of this course is to enable students to develop visual application, become familiar with visual development environment and use its facilities to build the applications.
COURSE INFORMATION

Course Code : MAT 133
Course Name : PRECALCULUS

Level
[Diploma/Bachelor /Master /PhD] : Diploma

Credit Hours : 3
Contact Hours : 4


Course Status [Core/Non-Core] : Core

Pre-requisite : Nil

Course Objective

Upon completion of this course, the students should be able:

i. To solve basic algebraic problems
ii. To recognize things related to functions
iii. To recognize the fundamentals of trigonometry
iv. To solve systems of equations and inequalities
v. To solve problems of complex numbers algebraically
vi. To obtain a strong basic mathematics foundation in order to take other mathematics subjects or subjects related to it.

Course Description

Calculus is the main component in learning mathematics. This course covers most of the main topics needed by the students before they venture into the world of calculus. It consists of five major parts, that is, coordinates, graphs and lines, functions, systems of equations and inequalities, trigonometry and basic conic sections.
**COURSE INFORMATION**

Course Code : CHE 115
Course Name : GENERAL CHEMISTRY
Level [Diploma/Bachelor/MasterPhD] : Diploma
Credit Hours : 3
Contact Hours : 4
Course Status [Core/Non-Core] : Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:

i. Ability to apply basic principles of chemistry of atoms, gases and solutions.
ii. Ability to explain chemical properties of atoms and molecules.
iii. Ability to explain the properties and the industrial application of transition metal elements and their compounds.

Course Description

This course includes the principles of chemistry of atoms, gases and solutions, chemistry of 3-d Transition Metal Elements and their compounds and application of complexes and coordination compounds.
COURSE INFORMATION

Course Code : CHE 175
Course Name : ENGINEERING PHYSICS

Level
[Diploma/Bachelor/Master/PhD] : Diploma

Credit Hours : 4
Contact Hours : 6
Part (1/2/3/4/5/6) : 1

Course Status [Core/Non-Core] : Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:
   i. Identify and explain the principles of engineering physics.
   ii. Apply and correlate the principles of engineering physics.
   iii. Apply and solve the problems related to appropriate principles of engineering physics

Course Description

This course is an introductory to Newton’s law, forces, dynamics, work, energy, electricity, sound, waves and the governing mathematical concept involved. Pneumatics such as simple harmonic motion will be discussed. The final part covers heat and nuclear physics.
COURSE INFORMATION

Course Code : BEL 260
Course Name : INTERMEDIATE ENGLISH

Level
[Diploma/Bachelor/Master/PhD] : Diploma

Credit Hours : 3
Contact Hours : 6


Course Status [Core/Non-Core] : Core

Pre-requisite : Consolidating Language Skills/Communications Skills

Course Objective

At the end of the course, the student should be able to:
  i. Read and respond to academic texts.
  ii. Interpret a non-linear text.
  iii. Plan and write an essay.
  iv. Take part in a discussion.
  v. Listen and extract information

Course Description

This course equips students with the skills and strategies needed to perform effectively using the English language. It covers major aspects of Reading, Writing, Speaking and Listening.
MAKLUMAT KURSUS

Kod Kursus : CTU 151
Name Kursus : PEMIKIRAN DAN TAMADUN ISLAM

Peringkat
[Diploma/Bachelor/Master/PhD] : Diploma

Unit Kredit : 2
Jam Temu : 2
Status kursus : Kursus Universiti
Pra-syarat : -

Objektif Kursus

Setelah mengikuti kursus ini pelajar dapat :
i. Menerangkan konsep tamadun Islam dan sumbangannya kepada peradaban dunia (LO1,C2, A3).
ii. Menjelaskan perkembangan dan pengaruh Islam di Alam Melayu (LO1,C2, A3).
iii. Menghuraikan sistem kemasyarakatan dan kenegaraan Islam serta cabaran yang dihadapi oleh umat Islam kini (C2,LO7,A3)

Deskripsi Kursus

COURSE INFORMATION

Course Code : MAT 183
Course Name : CALCULUS 1
Level
[Diploma/Bachelor/Master/PhD] : Diploma
Credit Hours : 3
Contact Hours : 4
Part : 2
Course Status [Core/Non-Core] : Core
Pre-requisite : MAT133

Course Objective

Upon completion of this course, students should be able to:

i. Understand the concepts of function, limit and continuity;
ii. Able to calculate the derivatives of functions using various techniques of differentiation such as the product rule, quotient rule, chain rule.
iii. Apply derivatives in curve sketching or solving applied maximum and minimum problems.
iv. Integrate basic functions including substitution method
v. Apply integration to find the area and the volume of solid of revolution between 2 curves.

Course Description

This is the first course in the calculus series. It starts with topics on functions and graphs, limits and continuity, techniques of differentiation and its applications. It also covers simple integration and its applications.
COURSE INFORMATION

Course Code : MEM 160
Course Name : WORKSHOP PRACTICE
Level [Diploma/Bachelor/Masters/PhD] : Diploma
Credit Hours : 2
Contact Hours : 4
Part : 2
Course Status [Core / Non-Core] : Non-Core
Pre-requisite : Nil

Course Objective

Upon completion of this course, the students should be able to:

i. Understand workshop safety and regulation

ii. Acquire knowledge on machine shop practices, carpentry shop practices, foundry shop practices, bench fitting practices, sheet metal practices and welding practices.

Course Description

This subject is aimed at introducing the students to the workshop atmosphere, using of workshop tools, equipments and materials that cover all the major areas of metalworking. Initially the course covers the general guidelines with respect to overall workshop practice including safety. It will then offer more detailed instruction on the major fields associated with industrial workshop so that the students will acquire overall knowledge of the basic application on various manufacturing processes.
**COURSE INFORMATION**

Course Code : CHE 185  
Course Name : ENGINEERING CHEMISTRY  
Level [Diploma/Bachelor/Master/PhD] : Diploma  
Credit Hours : 3  
Contact Hours : 4  
Part (1/2/3/4/5/6) : 2  
Course Status [Core/Non-Core] : Core  
Pre-requisite : Nil

**Course Objective**

Upon completion of this course students should be able to:

i. Explain hybridized bond formation and type of chemical reactions.

ii. Explain the relationship between the structure, physical and chemical properties of the different bonds and functional groups in organic compounds.

iii. Explain each of functional group activity.

**Course Description**

This course, in accordance with the syllabus, introduces the student to fundamental knowledge of organic chemistry, namely: organic compound nomenclature, reaction pathways and functional reactivity, in the context of chemical engineering applications.
COURSE INFORMATION

Course Code : CHE 195
Course Name : PROCESS CHEMISTRY
Level [Diploma/Bachelor/Master/PhD] : Diploma
Credit Hours : 3
Contact Hours : 4
Part (1/2/3/4/5/6) : 2
Course Status [Core/Non-Core] : Core
Pre-requisite : CHE 115 General Chemistry

Course Objective

Upon completion of this course, students should be able to:
   i. Apply basic principles of chemical reactions.
   ii. Explain the basic principles of phase and chemical equilibrium.
   iii. Apply the principles of electrochemistry.

Course Description

This is an introductory course in process chemistry. The topics included are heats of reaction, chemical kinetic, chemical equilibrium, acid/base, buffer system, phase equilibrium and electrochemistry.
MAKLUMAT KURSUS

Kod Kursus : CTU 211
Name Kursus : SAINS DAN TEKNOLOGI ISLAM

Peringkat

[ Diploma/Bachelor/Master/PhD ] : Diploma

Unit Kredit : 2
Jam Temu : 2
Status kursus : Kursus Universiti
Pra-syarat : -

Objektif Kursus

Setelah mengikuti kursus ini pelajar dapat :
  i. Menjelaskan latar sejarah sains dan teknologi Islam.(C2, LO1, P4)
  ii. Menghuraikan konsep sains dan teknologi berasaskan al-Quran dan al-Sunnah.(C2, LO1, P4)
  iii. Mengaplikasi kaedah fiqh dan etika dalam sains dan teknologi.(C3, LO7, A3)

Deskripsi Kursus

Kursus ini membincangkan perkembangan sains dan teknologi dalam Islam; konsep sains dan teknologi berasaskan wahyu; kepentingan syariah dan etika Islam serta aplikasinya dalam sains dan teknologi
COURSE INFORMATION

Course Code : BEL 311
Course Name : ENGLISH FOR ACADEMIC PURPOSE

Level
[Diploma/Bachelor/Master/PhD] : Diploma
Credit Hours : 3
Contact Hours : 6
Course Status [Core/Non-Core] : Core
Pre-requisite : Intermediate English

Course Objective

By the end of the course, the student should be able to:
   i. Read and respond to academic texts.
   ii. Conduct literature search on topics selected.
   iii. Plan and write an outline for a written assignment.
   iv. Write a text of an academic nature.
   v. Communicate effectively during group discussions.

Course Description

This course is aimed at preparing students to meet the demands of their respective disciplines. This is achieved by training students to employ the language skills and strategies necessary to carry out their academic tasks.
## COURSE INFORMATION

<table>
<thead>
<tr>
<th>Course Code</th>
<th>CHE 213</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Name</td>
<td>FLUID MECHANICS</td>
</tr>
<tr>
<td>Level</td>
<td>Diploma</td>
</tr>
<tr>
<td>Credit Hours</td>
<td>3</td>
</tr>
<tr>
<td>Contact Hours</td>
<td>4</td>
</tr>
<tr>
<td>Part</td>
<td>3</td>
</tr>
<tr>
<td>Course Status</td>
<td>Core</td>
</tr>
<tr>
<td>Pre-requisite</td>
<td>Nil</td>
</tr>
</tbody>
</table>

### Course Objective

At the end of the course, students should be able to:

1. Explain and solve problem related to fluid properties as well as pressure force; apply dimensional analysis to develop a relationship between fluid variables.
2. Explain types of fluid flow, define and derive continuity and Bernoulli’s equations and their applications in flow meters, notches and weirs.
3. Apply appropriate equations and principles to analyze a variety of flow characteristics in circular pipes; explain pump performance characteristics and Net Positive Suction Head (NPSH)

### Course Description

This course is amongst the most important material in an engineering discipline and it is designed to provide the students with the principles of flow of fluid through flow meters and pipes.
COURSE INFORMATION

Course Code : CHE 225
Course Name : HYDROCARBON CHEMISTRY
Level
[Diploma/Bachelor/Masters/PhD] : Diploma
Credit Hours : 3
Contact Hours : 3
Course Status[Core / Non-Core] : Core
Pre-requisite : Nil

Course Objective

Upon completion of this course students should be able to:
  i.  Apply the concept of bonding between atoms in organic molecules.
  ii. Identify, name and describe the reactions of organic compounds based upon their functional activity.
  iii. Analyze chemical reactions and propose possible chemical reaction mechanisms.

Course Description

This course provides a chemical background of sufficient depth to facilitate and understanding of the organic chemical processes, which occur in industry. Topics covered include organic nomenclature, reaction types and biomolecules.
COURSE INFORMATION

Course Code : CHE 235
Course Name : CHEMISTRY LABORATORY
Level [Diploma/Bachelor/Masters/PhD] : Diploma
Credit Hours : 3
Contact Hours : 1
Course Status [Core / Non-Core] : Core
Pre-requisite : Nil

Course Objective

Upon completion of this course, students should be able:
  i. To perform the experiments that apply the basic principles of chemical reactions.
  ii. To familiarize with the techniques of analysis.
  iii. To perform the experiments that apply the principles of organic chemistry.
  iv. To perform the experiments that apply the basic principles of separation process.

Course Description

Chemistry laboratory or practical sessions enable students to understand theoretical physical and organic chemistry concepts as well as improving their knowledge and technical skills through conducting experiments. Concise and accurate writing and reporting skills will also be developed during the course of this module.
COURSE INFORMATION

Course Code : CHE 253
Course Name : THERMODYNAMICS

Level:
[Diploma/Bachelor/Masters/PhD] : Diploma
Credit Hours : 3
Contact Hours : 4
Course Status[Core / Non-Core] : Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:
   i. Acquire and explain the basic concepts in thermodynamics.
   ii. Comprehend and apply the concept to the actual conditions and problems; i.e. closed and open systems.
   iii. Apply and correlate the concept with the appropriate equations and principles to analyze and solve engineering problems.

Course Description

This course includes the following topics; an introduction to thermodynamics, properties of pure substances, first law of thermodynamics and its application in closed and open systems, second law of thermodynamics, heat engine and reversed heat engine, entropy, Carnot and Rankine cycles.
COURSE INFORMATION

Course Code : MAT 235
Course Name : CALCULUS II FOR ENGINEERS
Level
[Diploma/Bachelor/Master/PhD] : Diploma
Credit Hours : 3
Contact Hours : 4
Course Status[Core/Non-Core] : Non-Core
Pre-requisite : MAT183

Upon completion of this course, the students should be able to:

i. Evaluate integrals using various methods of integration.
ii. Understand the concepts of functions of two variables and its application.
iii. Evaluate double and triple integrals.
iv. Solve first order differential equations and its applications.

Course Description

This course consists of three chapters: methods of integration, functions of two variables and differential equations. In the first chapter, methods discussed are by parts, trigonometric integrals, trigonometric substitution and integral of rational functions. In chapter three, first and second order differential equations will be discussed. Application in engineering and sciences will be covered for chapter two and three.
COURSE INFORMATION

Course Code: CHE 262
Course Name: CHEMICAL PROCESSES AND SUSTAINABILITY

Level:
[Diploma/Bachelor/Master/PhD]: Diploma

Credit Hours: 3
Contact Hours: 4
Part[1/2/3/4/5/6]: 4
Course Status[Core/Non-Core]: Core
Pre-requisite: Nil

Course Objective

At the end of the course, students should be able to:
  i. Describe the process and utility requirements in major chemical engineering industries and identify its importance.
  ii. Identify the various industrial pollution, preventive measures and control methods in order to sustain the development and protect the environment.
  iii. Identify the elements of engineering ethics and problems related to ethics.

Course Description

The content of this course includes the emphasized knowledge on processing of important resources such as petroleum, gas and palm oil, involving the relevant upstream and downstream processes. Several oleo-chemical processes are also discussed. Environmental pollution is the main issue in the manufacturing process industries. Hence, topics on air and water pollution are explored. In addition, the students will have the opportunity to observe the real processing plants during plant visits.
COURSE INFORMATION

Course Code : CHE 271
Course Name : MATERIALS AND ENERGY BALANCE

Level
[Diploma/Bachelor/Master/PhD] : Diploma

Credit Hours : 4
Contact Hours : 5

Course Status[Core/Non-Core] : Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:
  i. Perform basic techniques for expressing the values of system variables and for setting up and solving equation that relate these variables.
  ii. Identify the known information about process variables, setting up material balance equation, and solving these equations for unknown variables.
  iii. Identify the known information about process variables, setting up energy balance equation, and solving these equations for unknown variables for non-reactive and reactive system.

Course Description

An introductory course in Chemical Engineering, which includes general basic concepts of material and energy balances.
COURSE INFORMATION

Course Code : CHE 303
Course Name : HEAT TRANSFER

Level
[Diploma/Bachelor/Masters/PhD] : Diploma

Credit Hours : 3
Contact Hours : 4
Course Status [Core / Non-Core] : Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:

i. Apply and explain basic principles and mechanisms of heat transfer – conduction, convection and radiation.
ii. Apply principles of heat transfer in heat transfer unit – heat exchanger.
iii. Apply and explain the principles of heat transfer in boiling and condensation.

Course Description

The course introduces topics on the different kinds of heat transfer i.e. conduction, convection and radiation in different cases, types of heat exchangers and finally introduction on boiling and condensation processes.
COURSE INFORMATION

Course Code : QMT 245
Course Name : STATISTICS FOT TECHNOLOGY 1
Level
[Diploma/Bachelor/Masters/PhD] : Diploma
Credit Hours : 3
Contact Hours : 4
Course Status[Core / Non-Core] : None - core
Pre-requisite : Nil

Course Objective

Upon successful completion of this course the student will be able to:
  i. Distinguish between different types of data.
  ii. Construct and interpret several pictorial and numerical summaries of data.
  iii. Calculate, interpret and use measures of central tendency and dispersions.
  iv. Use probability and probability distribution.
  v. Estimate parameters of normality distributions.
  vi. Formulate and test the hypotheses of collected data.

Course Description

This is elementary course in statistics covering basic topics in descriptive statistics and inferential statistics and probability theory. The course is design to equip students with the necessary statistical knowledge and tools in pursuance of their studies in technology. The topics covered are descriptive statistics including frequency distribution, box plot, histogram, cumulative frequency curve, measures of central tendency and dispersion; basic probability theory; probability distribution; elementary sampling theory; estimation; hypothesis testing and the basic analysis of variance.
COURSE INFORMATION

Course Code : ENT 300
Course Name : FUNDAMENTALS OF ENTREPRENEURSHIP

Level
[Diploma/Bachelor/Master/Ph.D.] : Diploma

Credit Hours : 3
Contact Hours : 4
Course Status [Core/Non-Core] : Non-Core
Pre-requisite : Nil

Course Objective

Upon completion of this course, the students should be able to
i. Analyze and differentiate the concept and roles of entrepreneurship
ii. To prepare and demonstrate a business plan for the success of new ventures creation.
iii. To demonstrate and execute the knowledge and skills in business planning to the benefit of the new venture

Course Description

This course provides an overview of the requirements for launching an entrepreneurial career and starting up an entrepreneurial venture. After an appreciation of the concept of entrepreneurship, students will be exposed to the critical role of opportunity recognition and evaluation. The course also shed light on the entrepreneur as the main success factor in the new venture formation and development. The central focus of the course is to prepare the students with the essence of entrepreneurship and business planning skills that is essential for the success of the new ventures.
COURSE INFORMATION

Course Code : MAT 285

Course Name : FURTHER MATHEMATICS FOR ENGINEERING

Level
[Diploma/Bachelor/Masters/PhD] : Diploma

Credit Hours : 3
Contact Hours : 4
Part : 5

Course Status[Core / Non-Core] : Non-Core
Pre-requisite : MAT183

Course Objective

Upon completion of this course, the students should be able to:
i. To understand the concept of matrices and solve systems of linear equations
ii. To understand the concept of vectors and solve related problems and application
iii. To understand the basic concept of power series
iv. To solve problems related to the above concepts

Course Description

This course discusses the basic concepts and algebraic operations of matrices and vectors. As application of matrices, this course will cover solving of systems of linear equalities.
COURSE INFORMATION

Course Code : CHE 304
Course Name : INTRODUCTION TO CHEMICAL REACTION ENGINEERING
Level
[Diploma/Bachelor/Masters/PhD] : Diploma
Credit Hours : 2
Contact Hours : 3
Course Status[Core / Non-Core] : None - Core
Pre-requisite : Nil

Course Objective

Upon completion of this course, students should be able to:

i. Acquire the knowledge of the theories and basic principles of chemical reaction engineering
ii. Apply the principles learnt in solving basic problems related to chemical reaction engineering
iii. Relate the chemical reaction engineering principles for application in chemical industrial
iv. Identify the reactors for the suitable chemical process industry.

Course Description

Chemical reaction engineering is the heart of chemical engineering as it serves as the fundamental difference of this branch of engineering to fields like mechanical and electrical engineering. The basics of chemistry is used in the review for some definition of important terms used in chemical kinetics prior to the calculation in chemical reaction engineering. This is followed by the types and operation of common reactors and simple design calculation of both
reactors in both isothermal and non-isothermal conditions. The topic on catalyst and catalytic reactors are included as deemed important in real chemical processes.

UNIVERSITI TEKNOLOGI MARA

COURSE INFORMATION

Course Code               : CHE 311
Course Name               : MASS TRANSFER AND UNIT OPERATIONS
Level                     : Diploma
Credit Hours              : 3
Contact Hours             : 4
Course Status[Core / Non-Core] : Core
Pre-requisite             : Nil

Course Objective

At the end of the course, students should be able to:

i. Comprehend and define the fundamental concepts of mass transfer and separation processes.
ii. Describe and explain the concept, application and equipment design for distillation, gas absorption, liquid – liquid extraction and leaching processes.
iii. Discover other types of separation process instead of the aforementioned separation processes.

Course Description

This course involves the study of mass and heat transfer as well as the performance of equipment for solvent extraction, leaching, gas absorption and distillation.
COURSE INFORMATION

Course Code : CHE 331
Course Name : CHEMICAL ENGINEERING LABORATORY

Level
[Diploma/Bachelor/Masters/PhD] : Diploma

Credit Hours : 1
Contact Hours : 3

Course Status[Core / Non-Core] : Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:

i. Determine physical properties of liquid and gases.
ii. Converse in detail using fundamental knowledge of unit operations performance.
iii. Learn and apply the fundamental principles of fluid mechanics via the experimental techniques.

Course Description

This Chemical Engineering Laboratory module is a systematic study of unit operations. Theory and practical work is combined to yield equipment designs for fabrication, assembly, operation and maintenance of chemical process plants. The purpose of Chemical Engineering Laboratory is to introduce students to basic equipment, which is used in the chemical process industry. Students are required to determine physical properties of liquid and gases, water quality and observe fluid flow behavior.
COURSE INFORMATION

Course Code : CHE334
Course Name : ENGINEERING GRAPHIC
Level : Diploma
Credit Hours : 2
Contact Hours : 4
Course Status [Core/Non-Core] : None-Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:

i. Identify and illustrate the various commands and tools in the drafting software.
ii. Demonstrate proficiency in constructing two and three dimensional technical drawings.
iii. Apply the knowledge on using drafting software to produce engineering drawings.

Course Description

This introductory course deals with basic AutoCAD skill, introduced to the students keeping in mind the future usage of the software in other relevant courses. Applications of AutoCAD included for drawing the lines, dimensioning, principle of orthographic projection, sectioning, isometric drawing, development of surfaces, assembly drawings and geometrical constructions. In addition, basic plant layout techniques and process flow diagram standard symbols are included.
COURSE INFORMATION

Course Code : MGT 340
Course Name : HUMAN RESOURCE MANAGEMENT

Level
[Diploma/Bachelor/Masters/PhD] : Diploma
Credit Hours : 3
Contact Hours : 4
Course Status [Core / Non-Core] : Non-Core
Pre-requisite : Nil

Course Objective

Upon completion of this course, the students should be able:

i. To understand the foundation of Human Resource Management and Industrial Relations.

ii. To be familiar with present Human Resources Management and Industrial Relations practices in Malaysia.

iii. To apply the Human Resource Management and Industrial Relations knowledge and skills at work.

Course Description

This subject is designed to introduce the students to various aspects of Human Resource Management and Industrial Relations in Malaysia. Human Resource Management includes manpower planning, job analysis, recruitment, selection, training, performance appraisal, employee laws and working hour systems, termination of employees, trade unions, collective bargaining, trade disputes and Industrial Court.
COURSE INFORMATION

Course Code : CHE 301
Course Name : OCCUPATIONAL SAFETY AND HEALTH
Level [Diploma/Bachelor/Masters/PhD] : Diploma
Credit Hours : 3
Contact Hours : 4
Course Status [Core / Non-Core] : Core
Pre-requisite : Nil

Course Objective

Upon completion of this course, students should be able to:
   i. Explain the relevant regulations of occupational safety and health
   ii. Explain hazards and toxicology including its effects to occupational safety and health, the control methods, safety symbols and labeling in chemicals.
   iii. Determine the causes and effects of accidents/ incidents that related to occupational safety and health especially in chemical plant

Course Description

This course covers hazard identification, Occupational, Safety and Health Act (OSHA) 1994, Toxicology, Material Safety Data Sheets (MSDS), Personal Protective Equipment, Chemical Safety and Chemical Plant Safety.
COURSE INFORMATION

Course Code : CHE 3I4
Course Name : BASIC INSTRUMENTATION AND CONTROL

Level
[Diploma/Bachelor/Master/Ph.D.] : Diploma
Credit Hours : 2
Contact Hours : 3
Course Status [Core/Non-Core] : Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:

i. Explain various types of control systems including feedback, feed-forward and cascade.
ii. Explain the principles of measurement of various instruments used for various process variables in chemical industries.
iii. Explain the working principles of advanced control systems such as DCS, SCADA and Interlock.

Course Description

This introductory course includes conventional control systems, modern control and block diagram, responses of control systems, measurements of process variables, introduction to pneumatics instruments, electronics instruments, transducers and tuning of controllers. Hands on experiment are being emphasized.
COURSE INFORMATION

Course Code : CHE 324
Course Name : PROCESS PLANT OPERATION & MAINTENANCE

Level
[Diploma/Bachelor/Master/Ph.D.] : Diploma

Credit Hours : 3
Contact Hours : 5

Course Status [Core/Non-Core] : Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:

i. Describe the relationship between Malaysian Regulation on facilities service function and operations or maintenance activities.

ii. Explain the basic working principle and general maintenance of typical or common process plant equipments such as pumps, boilers, heat exchangers, cooling towers, compressors and combustion equipments.

iii. Identify the various system mechanisms in industrial plant utilities such as water distribution system, refrigeration system and electrical system.

Course Description

This course comprise topic that cover plant utilities and auxiliary systems. The topics include general maintenance and administration, environmental regulation, various utility systems, industrial safety and health and auxiliaries for prime movers and drivers.
COURSE INFORMATION

Course Code : CHE 364
Course Name : PROJECT
Level
[Diploma/Bachelor/Masters/PhD] : Diploma
Credit Hours : 4
Contact Hours : 6
Course Status[Core / Non-Core] : Core
Pre-requisite : Nil

Course Objective

At the end of the course, students should be able to:
    i. Identify the steps taken to perform work based on research.
    ii. Apply necessary techniques and skills in the topic of interest.
    iii. Explain the research work and activities in a report and oral presentation.

Course Description

This course requires the students to carry out an individual research work at which at the end of the investigation the students need to produce a written report as well as a presentation.