



MCAST

MQF/EQF Level 4

AS4-01-21

MCAST Advanced Diploma for Pharmacy Technicians

Course Specification

Course Description

This programme of study is designed to provide learners with the skills, knowledge and competences necessary for a career as pharmacy technicians. Learners will be exposed to scientific and pharmaceutical principles and will be given a sound knowledge of health related material, resulting in a holistic approach to effectively and competently embark on a career as a pharmacy technician. This programme of study is designed to provide learners with all the technical skills, knowledge of procedures, legislation and responsibilities required for such a career and includes work-related training and practice. Successful candidates will be eligible to apply for Registration with the Pharmacy Council of Malta.

Programme Learning Outcomes

At the end of the programme the learner will be able to:

1. *Assist in the provision of services within the pharmacy environment.*
2. *Recall the national regulations and policies regarding use, distribution, storage and supply of medicines to patients and pharmacy customers.*
3. *Explain the uses and limitations of medicines, including their management in practice.*
4. *Use standard pharmacy resources to provide a service to pharmacy customers.*

Entry Requirements

MCAST Diploma in Applied Science; OR

MCAST Diploma in Health and Social Care (with additional module in Chemistry); OR

Any MCAST Level 3 Diploma, whilst being in possession of the compulsory subjects as indicated hereunder; OR

4 SEC/O-Level/SSC&P (Level 3) passes

Compulsory: English Language and Mathematics and Chemistry

Other Entry Requirements

Applicants will be subject to an occupational health screening to establish their suitability for the Placement which is a mandatory part of this programme. Once course would have started, failure to present a successful health screening, will result in not being in a position to go on work placements which will preclude from a successful completion of course. Applicants must also provide evidence of a clean police conduct certificate.

Academic qualification leading to a Regulated Profession

Pharmacy Council of Malta
The Registrar,
Pharmacy Council,
St. Luke's Hospital - OPD (Level 1), St. Luke's Square, Pieta' PTA 1010

Key Information

Awarding Body - MCAST

Accreditation Status - Accredited via MCAST's Self Accreditation Process (MCAST holds Self-Accrediting Status as per 1st schedule of Legal Notice 296/2012)

Type of Programme: Qualification

MQF Level	Examples of Qualifications	'Qualification' Minimum Credits Required	'Award' Credits Required
Level 8	Doctoral Degree Third Cycle Bologna Process	NA	NA
Level 7	Masters Second Cycle Bologna Process	90-120	Less than 30
	Post-Graduate Diploma	60	
	Post-Graduate Certificate	30	
Level 6	Bachelor ²³ /Bachelor (Hons.) ²⁴ First Cycle Bologna Process	180-240	Less than 180
Level 5	Short Cycle Qualification	120	Less than 60
	Undergraduate Higher Diploma	90	
	Undergraduate Diploma	60	
	Undergraduate Certificate	30	
	VET Level 5 Programme ²⁵	60-120	
Level 4	Pre-Tertiary Certificate	30	Less than 120
	VET Level 4 Programme ²⁶	120	
	MATSEC Certificate	NA	
Level 3	VET Level 3 Programme ²⁷	60	Less than 60
	General and Subject Certificate	NA	
Level 2	VET Level 2 Programme ²⁸	60	Less than 60
	General and Subject Certificate	NA	
Level 1	VET Level 1 Programme ²⁹	40	Less than 40
	General and Subject Certificate	NA	
Introductory Level A	Preparatory Programme	30	Less than 30
Introductory Level B	Pre-entry Basic Skills Course	30	Less than 30

Table 1: Minimum number of credits for 'Qualifications' and parameters for 'Awards'

Fig.1: p56, Ministry for Education and Employment & National Commission for Further and Higher Education Malta (2016). *Referencing Report, 4th Edition*. NCFHE.

Total number of Hours: 3000

Mode of attendance: Full Time

Duration: 2 Years

Target audience for MCAST full-time courses is 16 to 65+

Target group: Students exiting compulsory education

The official language of instruction at MCAST is English. All notes and textbooks are in English (except for language courses which will be in the respective language being instructed). International candidates will be requested to meet English language certification requirements for access to the course.

This course will be offered at

MCAST has four campuses as follows:

MCAST Main Campus

Triq Kordin, Paola, Malta

All courses except for the Institute for the Creative Arts, Centre of Agriculture, Aquatics and Animal Sciences are offered here.

Institute for the Creative Arts

Mosta Campus

Misraħ Ghonoq Targa Gap,

Mosta

Institute of Applied Sciences,

Centre of Agriculture, Aquatics and Animal Sciences,

Luqa Road, Qormi

Gozo Campus

J.F. De Chambray Street

MCAST, Għajnsielem

Gozo

Teaching, Learning and Assessment

The programmes offered are vocational in nature and entail both theoretical lectures delivered in classes as well as practical elements that are delivered in laboratories, workshops, salons, simulators as the module requirements dictate.

Each module or unit entails a number of in person and/or online contact learning hours that are delivered by the lecturer or tutor directly (See also section 'Total Learning Hours').

Access to all resources is provided to all registered students. These include study resources in paper or electronic format through the Library and Resource Centre as well

as tools, software, equipment and machinery that are provided by the respective institutes depending on the requirements of the course or module.

Students may however be required to provide consumable material for use during practical sessions and projects unless these are explicitly provided by the College.

All Units of study are assessed throughout the academic year through continuous assessment using a variety of assessment tools. Coursework tasks are exclusively based on the Learning Outcomes and Grading Criteria as prescribed in the course specification. The Learning Outcomes and Grading Criteria are communicated to the Student via the coursework documentation.

The method of assessment shall reflect the Level, credit points (ECTS) and the schedule of time-tabled/non-timetabled hours of learning of each study unit. A variety of assessment instruments, not solely Time Constrained Assignments/Exams, are used to gather and interpret evidence of Student competence toward pre-established grading criteria that are aligned to the learning outcomes of each unit of the programme of study.

Grading criteria are assessed through a number of tasks, each task being assigned a number of marks. The number of grading criteria is included in the respective Programme Specification.

The distribution of marks and assessment mode depends on the nature and objectives of the unit in question.

Coursework shall normally be completed during the semester in which the Unit is delivered.

Time-constrained assignments may be held between 8 am and 8 pm during the delivery period of a Unit, or at the end of the semester in which the Unit is completed. The dates are notified and published on the Institute notice boards or through other means of communication.

Certain circumstances (such as but not limited to the Covid 19 pandemic) may lead Institutes and Centres to hold teaching and assessment remotely (online) as per MCAST QA Policy and Standard for Online Teaching, Learning and Assessment (Doc 020) available via link <https://www.mcast.edu.mt/college-documents/>

The Programme Regulations referenced below apply. (DOC 004* available at: link <https://www.mcast.edu.mt/college-documents/>)

Total Learning Hours

The total learning hours required for each unit or module are determined as follows:

Credits (ECTS)	Indicative contact hours	Total Student workload (hrs)	Self-Learning and Assessment Hours
1	5 - 10 hrs	25 hrs	20-15 hrs*
2	10 - 20 hrs	50 hrs	40-30 hrs*
3	15 - 30 hrs	75 hrs	60-45 hrs*
4	20 - 40 hrs	100 hrs	80-60 hrs*
6	30 - 60 hrs	150 Hrs	120-90 hrs*
9	45 - 90 hrs	225 hrs	180-135 hrs*
12	60 - 120 hrs	300 hrs	240-180 hrs*

* The 'Self-Learning and Assessment Hours' amount to the difference between the contact hours and total student workload.

Grading system

All MCAST programmes adopt a learner centred approach through the focus on Learning Outcomes. The assessment of MCAST programmes is criterion-referenced and thus assessors are required to assess learners' evidence against a pre-determined set of Learning Outcomes and assessment criteria.

For a student to be deemed to have successfully passed a unit, a minimum of 50% (grade D) must be achieved. In case of part time programmes, the student must achieve a minimum of 45% to successfully pass the unit.

All units are individually graded as follows:

A* (90-100)

A (80-89)

B (70-79)

C (60-69)

D (50-59)

Unsatisfactory work is graded as 'U'.

Work-based learning units are graded on a Pass/Fail basis only.

Detailed information regarding the grading system may be found in the following document: DOC 004* available at: link <https://www.mcast.edu.mt/college-documents/>

Intake Dates

- MCAST opens calls for application once a year between July and August of each year for prospective applicants residing in MALTA.
- Applications to full-time courses from international students not residing in MALTA are accepted between April and Mid-August.
- For exact dates re calls for applications please follow this link <https://www.mcast.edu.mt/online-applications-2/>

Course Fees

MCAST course are free for Maltese and EU candidates. International candidates coming from outside the EU need to pay fees for the respective course. Course fees are set on a per-level and course duration basis. For access to course fee structure and payment methods please visit <https://www.mcast.edu.mt/fee-payments-for-non-eu-candidates/>.

Method of Application

Applications to full-time courses are received online via the College Management Information System. Candidates can log in using Maltese Electronic ID (eID) or European eIDAS (electronic identification and trust services) to access the system directly and create an account as the identity is verified electronically via these secure services.

Non-EU candidates need to request account creation through an online form by providing proof of identification and basic data. Once the identity is verified and the account is created the candidate may proceed with the online application according to the same instructions applicable to all other candidates.

Non-EU candidates require a study visa in order to travel to Malta and joint the course applied for. For further information re study-visa please access <https://www.identitymalta.com/unit/central-visa-unit/>.

For access to instructions on how to apply online please visit <https://www.mcast.edu.mt/online-applications-2/>

Contact details for requesting further information about future learning opportunities:

MCAST Career Guidance

Tel: 2398 7135/6

Email: career.guidance@mcast.edu.mt

Current Approved Programme Structure

Unit Code	Unit Title	ECTS	Year	Semester
ASPHM-406-2102	Actions and Uses of Medicines A	6	1	YEAR
ASPHM-406-2103	Pharmaceutics	6	1	YEAR
ASPHM-406-1506	Principles and Standards for good Pharmaceutical Practice	6	1	YEAR
ASPHM-406-2101	Biological Science & Human Physiology	6	1	YEAR
ASPHM-406-1509	Microbiology and its application	6	1	YEAR
ASPHM-406-1510	Chemistry for Pharmacy	6	1	YEAR
ASPHM-406-2000	Work experience in the primary care setting 1	6	1	YEAR
ASPHM-406-2002	Work experience in the secondary care setting 1	6	1	YEAR
CDKSK-406-2001	English	6	1	YEAR
CDKSK-406-2007	Mathematics	6	1	YEAR
ASPHM-406-2104	Actions and Uses of Medicines B	6	2	YEAR
ASPHM-406-2105	Actions and Uses of Medicines C	6	2	YEAR
ASPHM-406-2106	Actions and Uses of Medicines D	6	2	YEAR
ASPHM-406-1507	Pharmacy Law and Ethics	6	2	YEAR
ASPHM-406-1511	Pharmaceutical Activities in the industry	6	2	YEAR
ASPHM-406-2107	Pharmacy Practice	6	2	YEAR
ASPHM-406-2001	Work experience in the primary care setting 2	6	2	YEAR
ASPHM-406-2003	Work experience in the secondary care setting 2	6	2	YEAR
CDKSK-404-1915	Employability and Entrepreneurial Skills	4	2	A
CDKSK-402-2104	Community Social Responsibility	2	2	A
CDKSK-406-2002	Individual and Social Responsibility	6	2	YEAR
Total ECTS		120	/	/

N.B. The semester/year assigned to the modules may change according to the exigencies of the Institute or due to unforeseen circumstances. Students will be informed beforehand of any necessary changes.

ASPHM-406-1506: Principles and Standards for good Pharmaceutical Practices

Unit level (MQF/EQF): 4
Credits: 6
Delivery Mode: Face to Face
Total Learning Hours: 150

Unit Description

Students acquire knowledge and competence of principles of good practice, legislation and standards as applicable to different areas of pharmaceutical practice in different health care settings within primary care, hospital establishments and within the industry.

Students will apply principles of good practice for different aspects of practice such as quality assurance and quality control; quality management systems; premises, equipment and utilities; installation and validation. Students will receive knowledge to be able to work within a practice which operates in line with a pharmaceutical quality management system and to contribute in the upkeep and writing up of parts of the quality management system.

Students will gain understanding to enable them to map out procedures and contribute to the writing up of standard operating procedures for different processes. Students will gain understanding and be able to use different types of documents within a practice.

Students will be able to understand how to set and achieve targets, key performance indicators for different processes and will monitor the different processes to ensure whether the required standards and targets are being achieved. Students will apply recommendations for improvement in different practice settings, and understand and apply the principle of continuous improvement.

Students will gain experience in the participation in the conduct of an audit in practice settings, both as part of an audit team as well as auditees, participate in the drawing up an audit report and set recommendations for improvement.

Students will be able to utilize and apply their knowledge and skill when they start working as pharmacy technicians to their different areas of practice where they will

work. Student will be able to source information, guidelines and legislation and to practice in line with new developments in practice.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Acquire knowledge of different pharmaceutical practices, general principles, guidelines, legislation and standards for good pharmaceutical practices*
- 2. Acquire knowledge of pharmaceutical quality system principles relevant to activities within pharmaceutical practices*
- 3. Premises, equipment and utilities used for different pharmaceutical practices*
- 4. Know, understand and apply principles and knowledge for the manufacturing of medicinal products at industrial level*
- 5. Monitor and evaluate that standards of good practice are being met and maintained.*

ASPHM-406-1507: Pharmacy Law and Ethics

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

Students will learn about different forms of regulation (legislation, guidelines and standards) as applicable to the profession and practice of pharmacy technicians. Students will learn about the EU framework for legislation and how EU legislation is transposed into national legislation. There will be a description of different areas of national legislation as applicable to pharmacy technicians.

Students will develop an understanding of professional practice and ethics. They will be nurtured to appreciate that the practice of pharmacy technicians is that of a registered professional and that in addition to the application of technical knowledge and standards they need to apply principles of ethical and professional practice and that the practice is regulated through the code of the Pharmacy Council.

Students will also be able to consider principles relevant to patients (such as patients' rights), other healthcare professionals and other stakeholders (such as principles of better regulation) in their communication and relevant practice.

Students will learn about the regulation covering medicinal products and their quality, safety and efficacy. Students will learn about regulation concerning the prescription, dispensing, supply and use of medicines and specific legislative requirements related to medicinal products such as controlled medicines, unlicensed medicines and off-label use. Students will be knowledgeable of regulation of products other than medicinal products.

Students will be knowledgeable of different regulation regarding different areas of pharmaceutical practice in different practice settings.

Students should be capable of applying regulation and principles of professional and ethical practice to daily work activity as well as to take up the challenge of new developments.

Learning Outcomes

On completion of this unit the student will be able to

1. *Describe different forms of regulation as applicable to the profession and practice of pharmacy technicians and enable and motivate the students to keep updated*
2. *Understand and apply general principles of professional and ethical practice relevant to pharmacy technicians*
3. *Apply knowledge of regulation related to different medicinal and non-medicinal products*
4. *Understand regulations and standards of practice applicable to the advertising, supply, prescribing, dispensing, administration and use medicines*
5. *Know and understand healthcare systems and the impact of social determinants of health and apply this information in different aspects of practice*

ASPHM-406-1509: Microbiology and its Application

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

This unit provides a framework for students to understand important aspects of microbiology with relevance to all aspects relevant to the role of a pharmacy technician.

The students will be exposed to the fundamentals of microbiology including a clear understanding of viruses, viroids and prions; as well as prokaryotes and eukaryotes with a focus on bacteria, fungi and protozoa. Students will be exposed to various diseases caused by these microorganisms and will also learn about various types of zoonoses.

Student will be exposed to various aspects of pharmacology of bacterial and mycobacterial infections including DNA replication, transcription and translation and cell wall synthesis. They will also learn about aspects of fungal infections as well as parasitic infections including conditions caused by protozoa as well as helminths. Students will also learn about viral infections including physiology of viral replication and viral life cycle.

Students will understand mechanisms of drug resistance of various microorganisms.

The students will also be exposed to good practices for pharmaceutical microbiological laboratories to various techniques of enumeration of microorganisms and to relevance of microbiology in environmental monitoring and verification of aseptic technique.

The students will also understand the role of the microbiology laboratory in the diagnosis and therapeutics of infectious disease.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Understand the fundamentals of microbiology including pharmacology of bacterial infections, fungal infections, parasitic infections and viral infections*
- 2. Understand the development of resistance in microorganisms and concepts of infection control*

3. *Understand good practices for pharmaceutical microbiological laboratories and identify the relevance of microbiology in environmental monitoring and verification of aseptic techniques.*
4. *Apply principles of microbiology to the diagnosis of disease and therapeutics.*

ASPHM-406-1510: Chemistry for Pharmacy

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

This unit provides a framework for students to understand important aspects of chemistry relevant to the pharmaceutical field.

Chemistry is a crucial subject to understand various aspects of pharmacy and pharmacy practice including synthesis of medications, determination of purity and formulation of medications as well as action and uses of medications including pharmacodynamics and pharmacokinetics.

Chemistry in pharmacy does in fact provide the necessary basis for the understanding of most of other units in the course.

Students will be exposed to the International System of Units and to basics of chemistry including the periodic table and ionic and covalent bonding. Students will also be exposed to stoichiometry.

Students will be subsequently exposed to organic chemistry [including functional groups] and pharmaceutical chemistry.

Most medications are small organic molecules that behave in solution as weak acids or bases. An understanding of acid-base theory will help the student understand and appreciate most medications. Students will come to appreciate the reasons why medications behave as acids or bases and the effects that ionization has on the properties of medicines.

The students will also come to appreciate importance of chemical reactions in drug metabolism.

The students will also understand concepts related to volumetric analysis of medications including titrations as well as other methods of assaying medications as practiced in research and industry.

Students will also understand the three-dimensional shapes of molecules. This is fundamental for students to understand other aspects of chemistry such as biochemistry and design of medicine. Students will wholly understand basics of isomerism and its

relevance in pharmacy. Students will be exposed to biochemistry and main biochemical issues relevant to pharmaceutical practice.

Students will be exposed to laboratory techniques related to pharmacy. They will be introduced to pharmacopoeial tests carried out in the pharmaceutical industry and perform Uniformity of Weight Ph. Eur. test in the laboratory. Students will also prepare standard solutions from solids, standard solutions by serial dilution and carrying out volumetric analysis of standard solutions.

Learning Outcomes

On completion of this unit the student will be able to

1. *Develop a firm basis of pharmaceutical chemistry anchored in practice including exposure to the periodic table, ionic and covalent bonding and stoichiometry.*
2. *Develop a firm understanding of chemical reactions, chemical equilibria, acid-base theory, chemistry in the metabolism of medications as well as volumetric analysis of medications.*
3. *Develop a firm basis of stereochemistry and of organic chemistry as well as to biochemistry relevant to pharmaceutical science.*
4. *Perform laboratory techniques related to pharmacy.*

ASPHM-406-1511: Pharmaceutical Activities in the Industry

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

The student will gain knowledge and work experience of the practice and activities within different areas of the pharmaceutical industry.

Simulations of different activities, work practice in real life situations and visits to real work practices will be used to give the students an experience in different areas of practice in the industry.

Students will work in simulated and real life services and will have practice in drawing up the steps involved in procedures for different activities and practices. Role play and simulated cases will be used to give students the experience of dealing with case scenarios such as complaints, change control, dealing with non-conformities, recalls and corrective and preventive actions within the work environment in the industry.

Students will use knowledge and skills acquired from other and apply them to cases and experiences encountered during the work experiences and / or simulated practices for this unit.

Role play will be used to enable students to practice behavioral aspects within a work environment including communication with other employees and with other stakeholders such as clients.

Students are to fill a logbook during the work experience and visits and to use cases from their Logbook for the industry and from the simulated cases and to present aspects applicable to the different Units of this course and present and discuss them in class.

Students will be assessed on their activities in the simulated practices, on the compiled log book and on the presentation of cases from their Logbook.

Learning Outcomes

On completion of this unit the student will be able to

1. *Understand a wide variety of pharmaceutical activities in the Maltese pharmaceutical industry*
2. *Triangulate/correlate knowledge, skill and experience from different areas for the execution of different activities in the industry*
3. *Perform an active role in multidisciplinary and multi-stakeholder teams in the industry setting*
4. *Interface between pharmaceutical industry and other settings*
5. *Demonstrate experience of work in the industry setting*

ASPHM-406-2000: Work Experience in the Primary Care Setting 1

Unit level (MQF/EQF): 4
Credits: 6
Delivery Mode: Face to Face
Total Learning Hours: 150

Unit Description

The learner will gain knowledge about different pharmaceutical services in the primary care setting, mainly focusing on pharmacies in primary care which may include other services such as domiciliary services, services in residential homes etc. Current services in Malta will be explained and discussed and examples from current services, particularly substantiated from experience during the learners' work placement, and simulations of services and activities will be used.

Learners will work in simulated services. They will have practice in drawing up the steps involved in different activities and processes and contribute to the writing of standard operating procedures for different procedures and activities in a pharmacy. Learners will have experience in dispensing of different types of prescriptions, under supervision.

Role play will be used to enable learners to practice communication and other behavioural aspects including communication with patients and carers, communication with other employees in pharmacies and other primary health settings and the role of the pharmacy technician as part of the multidisciplinary team.

Learners will use knowledge and skills acquired from all units and apply them during cases/ experiences encountered during the work placement, and/or simulated practices.

Learners are to use cases from their workbook as a learning experience alongside their tutor and collaborate with fellow learners in peer learning throughout this unit. Such cases should be used during simulations and discussions as part of the lecturing methodology for learners to problem solve and learn from real life experiences.

Learners will be assessed on their activities in real and simulated practices and on the research, development, and analysis of cases which will be presented in class.

Learners will be expected to be conversant in giving First Aid at the workplace, therefore should undergo an accredited course of basic First Aid and achieve certification in such competence.

This unit gives the learner an introduction to primary care pharmacy services through a work experience in various primary care settings. This unit shall be considered as an introductory part to primary care pharmacy and should be carried out in the first year of studies. Continuation of a primary care pharmacy work experience shall take place in the second year of studies, through a unit named; Work Experience in the Primary Care Setting 2. Only upon successful completion of the two units (Work Experience in the Primary Care Setting 1 in the first year of studies and Part 2 in the second year of studies) in addition to the completion of mandatory placement hours can the learners be considered to have acquired enough skills, knowledge and experience to apply for a pharmacy technician status with the Pharmacy Council Malta.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Understand the various activities taking place in a primary care setting.*
- 2. Order and maintain pharmaceutical stock.*
- 3. Dispense non-medicinal items.*
- 4. Perform First Aid procedures.*

ASPHM-406-2001: Work Experience in the Primary Care Setting 2

Unit level (MQF/EQF): 4
Credits: 6
Delivery Mode: Face to Face
Total Learning Hours: 150

Unit Description

This unit has been designed to build on the existing knowledge and skills gained through 'Work Experience in the Primary Care Setting 1'. The learner will be supported whilst completing a practice placement within a primary health care pharmacy. The unit sets out to support the learner through the learning outcomes, competences, and assessments to continue to develop relevant behaviours expected within a primary care pharmacy setting.

The unit will provide the learner with skills in the professional aspects of their career. It will enable learners to develop effective communication skills which need to operate alongside their customer service knowledge. Learners will be given the underpinning knowledge to support their understanding of the nature of teamwork and how to work effectively within a pharmacy team.

Learners completing this unit will develop the knowledge required to communicate effectively with colleagues, clients, and healthcare professionals in a variety of different contexts. Learners will find out how to use different questions and techniques to obtain relevant information required for the safe supply of medicines, the provision of appropriate information and advice, and onward referral to an appropriate authority.

Learners will be required to use their knowledge of the uses and side effects of commonly used medicines including over the counter (OTC) products, and know how to advise clients to take their medicines in a way that ensures compliance, concordance and safe use.

The unit highlights the importance of working at all times within the limits of one's own role, following Standardized procedures. The unit also identifies the developing role of the pharmacy technician, how pharmacy contributes to medicines management, and how this fits in with local and national policy.

Learning from the unit will also be reinforced with a workbook, which will enable the learner to record their developing knowledge and skills and equip learners with the knowledge and skills that will enable them to dispense and supply medicines in the correct way. The role of the pharmacy technician is expanding, so learners must be able to demonstrate good communication skills in this regard. Learners will also be introduced to the laws and the underlying principles behind the dispensing and supply of medicines. The unit also highlights the need for pharmacy technicians to demonstrate that they are aware of the limitations of their own role and when they need to refer to a pharmacist, senior pharmacy technician or prescriber.

This unit also covers learning and development skills, helping learners to understand how they and others learn, and how they can pass on knowledge to others. It will also prepare them for qualification and registration and help them to understand the requirements of being a registered pharmacy professional.

Only upon successful completion of the two units (Work Experience in the Primary Care Setting 1 in the first year of studies and Part 2 in the second year of studies) in addition to the completion of mandatory placement hours in both units can the learners be considered to have acquired enough skills, knowledge and experience to apply for a pharmacy technician status with the Pharmacy Council Malta.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Communicate effectively with customers in a pharmacy.*
- 2. Provide relevant information and advice on medicines and products.*
- 3. Understand the process involved in the dispensing of prescriptions.*
- 4. Support own learning through continuing professional development.*

ASPHM-406-2002: Work Experience in the Secondary Care Setting 1

Unit level (MQF/EQF): 4
Credits: 6
Delivery Mode: Face to Face
Total Learning Hours: 150

Unit Description

The learner will gain knowledge about different pharmaceutical services in a secondary care hospital setting, mainly focusing on pharmacies in hospital care but also on other services such as preparation of medicines in the hospital setting. Learners will gain understanding of aseptic technique as required to be used for the compounding of injectable medicinal products and will be tested for competence in this technique.

Current services in Malta will be explained and discussed and examples from current services, particularly substantiated from experience during the learners' work placement in the secondary care setting and simulations of services and activities will be used. Learners will practice in life and simulated services within the hospital environment.

Learners will practice the steps involved in standard operating procedures for processes for different activities in a hospital setting.

Role play will be used to enable learners to practice communication and other behavioral aspects including communication with patients and carers, communication with other employees in pharmacies and other hospital settings and the role of the pharmacy technician as part of the multidisciplinary team.

Learners will use knowledge and skills acquired from all units and combine them with cases/ experiences encountered during work Placement and / or simulated practices.

Learners are to use cases from their workbook and assignment and from the simulated cases and present aspects applicable to the different units of this course during this unit and discuss them in class. The discussions will be based on the schedule for the workbook for the work placement.

Learners will be mainly assessed on their activities at the work placement, in simulated practices and on the presentation of cases from their placement workbook.

This unit gives the learners an introduction to hospital pharmacy through a work experience in various secondary care settings. This unit shall be considered as an introductory part to hospital pharmacy and should be carried out in the first year of studies. Continuation of a hospital pharmacy work experience unit shall take place in the second year of studies, through a unit named; Work Experience in the Secondary Care Setting 2.

Only upon successful completion of the two units: *Work experience in the Secondary Care Setting 1* completed in the first year of studies and *Work Experience in the Secondary Care Setting 2* in the second year of studies and in addition to the completion of mandatory placement hours can the learners be considered to have acquired enough skills, knowledge and experience to apply for a pharmacy technician status with the Pharmacy Council Malta.

Learning Outcomes

On completion of this unit the student will be able to

1. Recognise the various activities taking place in a secondary care setting.
2. Understand the organization of the various sections of a pharmacy in a secondary care setting.
3. Practice effective communication and interaction with colleagues and other hospital staff.
4. Perform as part of an effective team.

ASPHM-406-2003: Work Experience in the Secondary Care Setting 2

Unit level (MQF/EQF): 4
Credits: 6
Delivery Mode: Face to Face
Total Learning Hours: 150

Unit Description

The learner will gain knowledge about different pharmaceutical services in a secondary care hospital setting, mainly focusing on pharmacies in hospital care but also on other services such as preparation of medicines in the hospital setting etc. Learners will gain an understanding of aseptic technique as required to be used for the compounding of injectable medicinal products and will be tested for competence in this technique.

Current services in Malta will be explained and discussed and examples from current services, particularly substantiated from experience during the learners' work placement in the secondary care setting and simulations of services and activities will be used. Learners will practice in life and simulated services within the hospital environment.

Learners will practice drawing up the steps involved in standard operating procedures for processes for different activities in a hospital setting.

Role play will be used to enable learners to practice communication and other behavioral aspects including communication with patients and carers, communication with other employees in pharmacies and other hospital settings and the role of the pharmacy technician as part of the multidisciplinary team.

Learners will use knowledge and skills acquired from all units and combine them with cases/ experiences encountered during work placement and / or simulated practices. Learners are to use cases from their workbook and assignment and from the simulated cases and present aspects applicable to the different units of this course during this unit and discuss them in class. The discussions will be based on the schedule for the workbook for the work placement.

Learners will be mainly assessed on their activities at the work placement, in simulated practices and on the presentation of cases from their placement workbook.

This unit is a continuation to the next level in hospital pharmacy practice for pharmacy technicians following the unit *Work Experience in the Secondary Care Setting 1* - (part 1, delivered in the first year of studies). This unit should be delivered in the second year of studies, only learners who have successfully completed the unit *Work Experience in the Secondary Care Setting 1*, will be considered as eligible learners.

Only upon successful completion of both units; (1) *Work Experience in the Secondary Care Setting 1* (in the first year of studies) and (2) *Work Experience in the Secondary Care Setting 2* (during the second year of studies) and in addition to the completion of mandatory placement hours can learners be considered to have acquired enough skills, knowledge, and experience to apply for a pharmacy technician status with the Pharmacy Council Malta.

Learning Outcomes

On completion of this unit the student will be able to

1. *Understand the process involved during dispensing.*
2. *Store and maintain pharmaceutical stock.*
3. *Practice making medicines in a pharmacy.*
4. *Monitor clinical cases.*

ASPHM-406-2101: Biological Science and Human Physiology

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

This unit provides a framework for learners to understand the biological systems and human physiology which is necessary to understand the action and uses of medicines (Unit 4-8).

Learners will understand the organisation of the human body by studying the structure of cells with an emphasis on parts of the cell where medicines action can occur including major types of receptors. They will also learn the basic concepts of genetics including genetic diseases.

Learners will be exposed to various cell types as well as to various tissues. There will also be a focus on various systems individually. It is important that learners appreciate the interaction between all various systems and that important concepts of homeostasis are elucidated. Description of anatomy and physiology of all systems will be anchored into practice with particular reference to the system in question and diseases of that particular system.

Learners will be exposed to the anatomy and physiology of the respiratory system and the cardiovascular system including the heart, the blood vessels, and the role of the blood including components of the blood. Learners will be exposed to the immune system as well as to the lymphatic system.

Learners will be exposed to the anatomy and physiology of the digestive system and genito-urinary system.

Learners will be exposed to the anatomy and physiology of the endocrine system including hormones as well as the anatomy and physiology of the nervous system including cells of the nervous system, the synapse and neurotransmitters; divisions within the nervous system including the central nervous system and the peripheral nervous system. The functions of the sensory organs will also be studied.

Learners will be exposed to the anatomy and physiology of the musculoskeletal system including major bones, muscles, cartilage, tendons and joints.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Understand the structure and function of cells, tissues and organ systems as well as basic concepts of genetics.*
- 2. Recognise the anatomy and physiology of the respiratory system, cardiovascular system as well as the structure and function of the lymphatic system and the immune system.*
- 3. Analyse the anatomy and physiology of the gastrointestinal system and the genito-urinary system.*
- 4. Evaluate the anatomy and physiology of the endocrine system, the nervous system and sensory organs as well as the musculoskeletal system.*

ASPHM-406-2102: Actions and Uses of Medicines A

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

This unit provides a framework for learners to understand the most important processes involved in pharmacokinetics and will familiarise themselves with the clinical relevance of pharmacokinetic parameters. They will also be able to describe the relationships between dose, concentration, response and toxic effects of medicines.

Learners will become aware of how medicines act (pharmacodynamics) at a molecular level and also understand key aspects of action of medicines including therapeutic equivalence, therapeutic index, potency and efficacy.

This unit will also focus on essential features and different types of adverse drug reactions and will help learners understand which patients have an increased susceptibility to ADRs and what factors to take into account when assessing causality. They will also learn ways of minimising them.

Learners will be able to define and distinguish different types and mechanisms of interactions as well as appreciate the importance of interactions involving Cytochrome P450. They will also learn to predict interaction and learn also ways of reducing the risks of interactions.

The learners will familiarise themselves with the clinical assessment and parameters that are monitored in the management of the main cardiovascular disorders with a particular emphasis on ischaemic heart disease (including hyperlipidaemia), hypertension, congestive heart failure, arrhythmias and thrombosis. For each cardiovascular disorder learners will be able to appreciate significance of each condition, medications used, and principles of therapy and management goals as well as develop the necessary skills and confidence to be able to assess effectiveness of medication used and monitor patient progress.

Learners will familiarise themselves with the treatment of various conditions affecting gastrointestinal system. They will understand what may contribute to diarrhoea and constipation, understanding their management and also identify signs which may warrant referral. Learners will also appreciate different causes of nausea and vomiting

and medical options available in a variety of different scenarios. The learner will also develop skills to manage patients presenting with upper gastrointestinal disorders, will understand the role of *Helicobacter pylori* and will become cognisant of properties of antacids and ulcer-healing medications. The learner will also be familiarised with inflammatory bowel disease and chronic bowel disorders and with relevant medication, monitoring and evaluation.

In the last part of this unit the learner will also focus on the treatment of respiratory disorders with an emphasis on medications utilised in the treatment of asthma and chronic obstructive pulmonary disease.

Learners will understand all the above utilising a case-based interactive approach.

Towards the end of the unit, they will conduct a final personal self-assessment to identify the strengths they have enhanced during the unit and areas for development in the future.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Recognise the basic principles of pharmacokinetics and pharmacodynamics.*
- 2. Identify different types of adverse drug reactions and drug interactions in practice.*
- 3. Explain the pharmacology of medications used to treat cardiovascular diseases.*
- 4. Evaluate the medications used to treat patients with gastrointestinal diseases.*
- 5. Illustrate the actions and uses of medications used to treat respiratory disorders including asthma and chronic obstructive airway disease.*

ASPHM-406-2103: Pharmaceutics

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

Pharmaceutics includes various aspects. This unit will focus on biopharmaceutics, principles of pharmaceutics, pharmaceutical formulation and pharmaceutical technology.

Learners will learn principles of pharmaceutics and will apply them to the vast variety of dosage forms that pharmacy technicians encounter in professional practice. The learner will gain knowledge of the formulation of different dosage forms, the properties of different types of excipients used for different dosage forms and the applicability, advantages and disadvantages of different dosage forms.

Learners will learn how to prepare different product types and will be able to compound extemporaneous preparations required in different pharmacy settings. The learners will be able to apply their knowledge of different ingredients for pharmaceutical preparations and the methods to be adopted for the preparation of different formulations. Learners will be able to do calculations of the ingredients required for preparations and choose the appropriate containers. Learners will be able to apply this knowledge to compound pharmaceutical preparations in the pharmacies within the primary care and also hospital pharmacies.

Learners will understand the importance of the aseptic technique when handling sterile pharmaceutical preparations. Learners will learn about handling, reconstituting and diluting parenteral preparations including chemotherapy, Centralised Intravenous Additives (CIVAS), radiopharmaceuticals, total parenteral nutrition (TPN). Learners will be able to apply this knowledge and skill when working in preparation units.

Learners will be able to apply this knowledge in practice, for the preparation and labelling of different preparations and to give advice to patients and information to be included on the labels and to be given during dispensing.

Learners will gain knowledge of the manufacturing of different dosage forms of medicinal products at an industrial level. Learners will be able to apply this knowledge when working in an industrial setting. It is important for learners to understand that all those employed within the pharmaceutical field must have the knowledge and skills to

undertake these activities safely for the safety of both themselves and of the patient. This is important as factors such as poor skills and inaccuracy can lead to poor medicinal products that could result in harm to the patient.

Learning Outcomes

On completion of this unit the student will be able to

1. *Recognise the principles of pharmaceutical formulation and pharmaceutical technology.*
2. *Solve pharmaceutical calculations for correct dispensing and preparation of pharmaceutical preparations.*
3. *Prepare extemporaneous preparations as required in a pharmacy in line with established standards.*
4. *Identify the principles of sterile compounding.*

ASPHM-406-2104: Actions and Uses of Medicines B

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

This unit provides a framework for learners to understand various disorders and areas of therapeutics.

The first part of the unit will deal with diseases of the central nervous system and their management and treatment. Learners will also be exposed to anxiolytics and hypnotics and the treatment of anxiety disorders and sleep disorders. The learners will also learn to understand most important psychiatric conditions and various treatment options available for depression and mood disorders, psychoses, bipolar disorders and schizophrenia. Learners will be exposed to the management of epilepsy and exposure to the most important antiepileptic medications. The treatment of dementia and Alzheimer's disease and use of anticholinesterase inhibitors will be examined.

Learners will also be introduced to medications used for the relief of pain as well as anaesthetic medications. In this context they will be also exposed to palliative care and to different types of analgesics used to treat different types of pain. Different types and classes of anaesthetics will be reviewed.

The next section to be dealt in detail is nutrition and blood, with learners being exposed to blood, various blood products, anaemia and its treatment. This section will also expand on various essential ions and vitamins as well as specialised nutrition required in particular disease states.

Malignant disease and immunosuppression will be the focus of this part of the unit. Learners will appreciate different medications utilised for the treatment of various forms of malignancies. Learners will also be exposed to utility and most important issues relating to various types of immune suppressants.

Learning Outcomes

On completion of this unit the student will be able to

1. *Assess how medicines are used to treat disorders of the central nervous system.*
2. *Explain the uses of various medications used in anaesthesia and in the treatment of pain.*
3. *Identify medications relating to blood and nutrition.*
4. *Guide patients on medications used for cancer treatment and immune suppressants.*

ASPHM-406-2107: Pharmacy Practice

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

Learners will achieve knowledge of the legislation and standards relevant to pharmacy practices and to pharmacies and equipment within pharmacies. Learners will receive a comprehensive knowledge of different areas of pharmacy practice and different activities particularly as relevant to dispensing practice, supply of medicines, use of medicines and administration of medicines.

The unit will enable the application of knowledge from different areas which cut across other units such as bio-pharmaceutics and pharmaceutical technology, principles of good practice, knowledge of physiology and different disease states and pharmacology to the practice of dispensing and provision of advice to patients.

A major component of this unit is the information about symptoms of minor illnesses, application of information from diagnostics tests and the use of this information to give recommendations to patients.

The unit will consider supply and use of medicinal products, non-medicinal products as well as health education, health promotion and disease prevention as a holistic approach to healthcare.

The unit will support the practice which will be addressed more specifically in practice and during work experience. The assessment of this unit is mainly aimed at ensuring that the knowledge gained in this basic subject as relevant to the practice of pharmacy technicians is utilised and applied in different areas of practice.

Learning Outcomes

On completion of this unit the student will be able to

1. *Apply legislation and standards related to pharmacy practice.*
2. *Assist in the provision of appliances, dressings and other nonmedicinal products.*
3. *Apply behavioural and sociological concepts relevant to pharmacy during practice.*
4. *Provide advice on minor ailments.*

ASPHM-406-2105: Actions and Uses of Medicines C

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

This unit provides a framework for learners to understand various endocrinological conditions in particular diabetes. The learner will understand its implications as well as its long-term complications plus prophylaxis and treatment options available for this condition which is particularly prevalent in Malta. Learners will also appreciate presentation of hypothyroid and hyperthyroid states and also understand the management of patients with thyroid disorders.

Learners will also have an opportunity to understand the actions and uses of corticosteroids as well as sex hormones including oestrogens and hormone replacement therapy. The learners will also appreciate characteristics of the menopause and appreciate risk and benefits as well as patient monitoring essential in hormone replacement therapy.

This unit will also deal with other medications important in endocrinology including progestogens and gonadorelin analogues; androgens and anabolic steroids (including the misuse of such substances amongst other in sports] as well as antiandrogens and selective oestrogen receptor modulators and aromatase inhibitors. This unit will also elucidate the role of the naturally occurring peptide hormones somatostatin and its analogues.

Various menstrual cycle disorders [including premenstrual syndrome, dysmenorrhoea, menorrhagia, endometriosis and polycystic ovary syndrome] will be reviewed and learners will understand the management of each condition. This unit will describe some important medications used in obstetrics including prostaglandins and oxytocin and different types of contraception. In this unit learners will appreciate the characteristics of important genitourinary disorders and appreciate characteristics and principles of therapy of benign prostatic hyperplasia and urinary frequency and incontinence.

This unit will also deal with the presentation and management of rheumatoid arthritis including safety issues and patient monitoring related to various medications used in its management (including disease-modifying antirheumatic medications and biological

agents). The learner will also understand the rationale and medications utilised in the management of osteoarthritis, osteoporosis, Paget's disease and gout.

Learners will also have the opportunity to explore and understand immunological products and vaccines including immunoglobulins, interferon and vaccines.

Learning Outcomes

On completion of this unit the student will be able to

1. *Analyse the actions and uses of medications used in the management of diabetes and thyroid disorders.*
2. *Indicate the medications used for treating various endocrinological conditions.*
3. *Practice the management of various gynaecological and genitourinary disorders as well as medications used in obstetrics.*
4. *Identify medications used for a wide variety of rheumatological, musculoskeletal and joint diseases.*
5. *Recognise issues regarding immunological products and vaccines.*

ASPHM-406-2106: Actions and Uses of Medicines D

Unit level (MQF/EQF): 4

Credits: 6

Delivery Mode: Face to Face

Total Learning Hours: 150

Unit Description

This unit provides a framework for learners to understand various disorders and areas of therapeutics.

The first part of the unit will deal with diseases of the central nervous system and their management and treatment. Learners will also be exposed to anxiolytics and hypnotics and the treatment of anxiety disorders and sleep disorders. The learners will also learn to understand most important psychiatric conditions and various treatment options available for depression and mood disorders, psychoses, bipolar disorders and schizophrenia. Learners will be exposed to the management of epilepsy and exposure to the most important antiepileptic medications. The treatment of dementia and Alzheimer's disease and use of anticholinesterase inhibitors will be examined.

Learners will also be introduced to medications used for the relief of pain as well as to anaesthetic medications. In this context they will be also exposed to palliative care and to different types of analgesics used to treat different types of pain. Different types and classes of anaesthetics will be reviewed.

The next section to be dealt in detail is nutrition and blood, with learners being exposed to blood, various blood products, anaemia and its treatment. This section will also expand on various essential ions and vitamins as well as specialised nutrition required in particular disease states.

Malignant disease and immunosuppression will be the focus of this part of the unit. Learners will appreciate different medications utilised for the treatment of various forms of malignancies. Learners will also be exposed to utility and most important issues relating to various types of immune suppressants.

Learning Outcomes

On completion of this unit the student will be able to

1. *Assess how medicines are used to treat disorders of the central nervous system.*
2. *Explain the uses of various medications used in anaesthesia and in the treatment of pain.*
3. *Identify medications relating to blood and nutrition.*
4. *Guide patients on medications used for cancer treatment and immune suppressants.*

CDKSK-402-2104: Community Social Responsibility

Unit Level (MQF/EQF): 4

Credits: 2

Delivery Mode: Fully Face-to-Face Learning

Total Learning Hours: 50

Unit Description

This unit focuses on Community Social Responsibility and provides an opportunity for learners to better understand themselves and the others and to establish goals in life. Community social responsibility enables learners to understand their strengths and areas for improvement and prepares them for life, employment and to become active citizens in society.

Moving away from traditional delivery of other units, learners will be empowered to take ownership of their learning process. Hence, community social responsibility will be delivered through a combination of workshops, small-group sessions with mentors and various opportunities to reflect.

The set of sessions will tackle community social responsibility skills and will mostly focus on the self, the ability to work independently and important values in life. The second set of sessions will address interpersonal skills and will focus on working with others, dealing with diversity and conflicts. Furthermore, at the end of the sessions, the learners will be introduced to the importance of active citizenship in life.

Learning Outcomes

On completion of this unit the learner will be able to:

- 1. Identify personal goals through self-reflection.*
- 2. Evaluate how collaboration with others can be more effective.*
- 3. Explain the importance of giving and receiving feedback.*
- 4. Contribute actively to make a difference in society.*

CDKSK-404-1915: Employability and Entrepreneurial Skills

Unit Level (MQF/EQF): 4

Credits: 4

Delivery Mode: Fully Face-to-Face Learning

Total Learning Hours: 100

Unit Description

This unit complements the vocational and key skill units at Level 4 and provides an opportunity for learners to enhance their employability and entrepreneurial skills.

Quite often, learners tend to focus most on technical skills and competences required in a certain trade which enable them to access employment. On the other hand, employers expect employees to be appropriately skilled to follow instructions, take initiative, work effectively in a team, take a lead when necessary and more. In view of this the unit starts with an introduction to the 4th industrial revolution and proceeds to the transversal skills necessary to find employment, retain employment and advance at the place of work. Learners will be able to highlight their strengths and identify the areas that require improvement.

The rest of the unit focuses on entrepreneurial skills, a skill which is one of the most important transversal skills identified by UNESCO. Learners are introduced to methods which can be used to generate new and innovative business ideas and methods which help them evaluate ideas and choose the most feasible. Furthermore, learners will cover the various stages of product and/or service development, including market analysis, processes, pricing strategy, promotion and resources required.

Learners will work in a small team and by the end of the unit they will have the opportunity to develop a business idea which is commercially viable. Furthermore, they will present the idea to prospective investors/stakeholders.

CDKSK-406-2001: English

Unit Level (MQF/EQF): 4

Credits: 6

Delivery Mode: Fully Face-to-Face Learning

Total Learning Hours: 150

Unit Description

The main objective of this unit is to prepare students to use the English language to understand, analyse, organise and communicate specific technical knowledge by inferring meaning from, and using, embedded information, being able to evaluate information critically and communicate through different types of texts, as required by various but often specific technical contexts within the selected field of study.

The emphasis is on the processes needed to transition from use of the English language in General Education to that required for access to Higher Education.

In particular, L4 Key Skills English is targeted at learners who have completed Foundation College programmes (Levels 1 to 3) and seek to further their studies at Technical or Degree level.

In this respect, this unit recognises the necessity to meet two linguistic demands at this threshold level; strengthening students' linguistic competences to be able to communicate more specifically within their vocational area and stream and to prepare them for more rigorous academic thinking, research and writing as necessitated by degree courses.

Being introduced at this level are core and elective unit outcomes. Reading and writing outcomes are core components in this syllabus while listening and speaking are elective components. Every L4 programme must deliver the two core outcomes and any one of the two elective learning outcomes. The elective criteria to be assessed cannot be selected from and across both outcomes.

Learning Outcomes

On completion of this unit the learner will be able to:

1. *Read technical texts effectively to improve knowledge of the subject area;*
2. *Understand information presented orally in the form of recordings, or talks, discussions, seminars, interviews or presentations;*
3. *Demonstrate own understanding of the subject matter via oral presentation, mock interviews or similar oral delivery;*
4. *Write a research paper or technical report demonstrating cohesion, structure and appropriate style.*

CDKSK-406-2007: Mathematics

Unit Level (MQF/EQF): 4

Credits: 6

Delivery Mode: Fully Face-to-Face Learning

Total Learning Hours: 150

Unit Description

This unit provides a framework for students to develop mathematical thinking skills further to the level 3-unit specification to solve problems related to real-life situations. Students also develop skills, attributes and knowledge that contribute to their personal growth and effectiveness within their training and work environment and also within the community.

The unit is designed to adapt for the needs of a particular field of study (business & finance or engineering & transport and others).

To reach this goal the unit was divided into four learning outcomes which are related to statistics, graphical representation, game theory and finance. Through these different areas students will be able to develop the effective skills for information processing, reasoning, evaluation creative thinking and enquiry, all fundamental skills for the problem solving process. This will prepare students in applying and evaluating a range of strategies to solve real-life problems. Through this unit the learner will also learn to present and communicate results and conclusions effectively.

On successful completion of the unit the learner will be equipped with mathematical thinking skills which make them aware of and understand their thought process, to reassess and identify areas for development. Students learn to evaluate, reflect about their strategies, understand and verify results to solve problems. These skills will equip students with managerial skills, to further their studies and for work employability.

Learning Outcomes

On completion of this unit the student will be able to

1. *Demonstrate visual and logical techniques in evaluating graphical representations and communication skills in presenting the results effectively.*
2. *Apply information processing skills to solve problems in a relevant statistical context.*

3. *Demonstrate evaluation and communication skills in solving and presenting problems applied to costing methods and techniques.*
4. *Apply creative thinking skills and demonstrate evaluation skills to solve problems in a relevant (game theory) context.*

CDKSK-406-2002: Individual and Social Responsibility

Unit Level (MQF/EQF): 4

Credits: 6

Delivery Mode: Fully Face-to-Face Learning

Total Learning Hours: 150

Unit Description

Since time immemorial, humanity always had to face challenging questions and situations, related to the responsibilities, each individual and society at large, had to carry along their existence. In this unit, learners will understand what existing in today's world really means by reflecting on themselves, their roots, past, and their place in the community.

Learners will also have the possibility to build or enhance their sense of duty and obligation, as well as personal leadership. This will engage the student in forging own moral and ethical framework and *raison d'être*.

This process will then be linked to the various ideas and theories that developed throughout different historical epochs - which reflect man's commitment to better understand his and society's commitment to mould life according to chosen values, such as peace, helping those in need, promoting and implementing human rights, freedom of speech, movement and cult, protecting vulnerable members of society, as well as eliminating unfair discrimination against women, refugees and people with disabilities.

Learning Outcomes

On completion of this unit the student will be able to

- 1. Identify the challenges faced in today's society, which impact own existence and social context.*
- 2. Discuss the impact of today's challenges vis a vis current events.*
- 3. Reflect about own values within today's social and cultural realities.*
- 4. Debate the relevance of a moral framework in today's society.*