

1. CODE OF PRACTICE FOR PROGRAMME ACCREDITATION

Section 1

An Overview of Quality Assurance of Malaysian Higher Education

INTRODUCTION

The Ninth Malaysia Plan (2006-2010) advocates the development of a world class human capital. The Ministry of Higher Education (MOHE) has incorporated this vision as one of its primary objectives under its Strategic Plan, in line with the national agenda to make Malaysia as a preferred centre to pursue higher education.

1. THE MALAYSIAN QUALIFICATIONS AGENCY

In December 2005, the Malaysian Cabinet decided to merge the National Accreditation Board (*Lembaga Akreditasi Negara*, LAN) and the Quality Assurance Division (QAD) of the MOHE. This merger created the Malaysian Qualifications Agency (MQA), the single quality assurance agency in the country, whose scope now covers both the public and private Higher Education Providers (HEP).

The Malaysian Qualifications Agency Act 2007 (MQAA 2007) assigns the responsibility for quality assuring higher education in Malaysia to the MQA. The responsibilities are:

- to implement the Malaysian Qualifications Framework (MQF) as a reference point for Malaysian qualifications;
- to develop, with the co-operation of stakeholders, standards, criteria and instruments as a national reference for the conferment of awards;
- to quality assure higher education providers and programmes;
- to accredit programmes that fulfil a set of criteria and standards;
- to facilitate the recognition and articulation of qualifications;
- to establish and maintain the Malaysian Qualifications Register (MQR);
and
- to advise the Minister on any matter relating to quality assurance in higher education.

2. RELEVANT COUNCILS AND COMMITTEES

2.1 THE MALAYSIAN QUALIFICATIONS AGENCY COUNCIL

The MQA is headed by a Council. It comprises a Chairman and 16 members. The functions of the Council are:

- to approve plans and policies for the management of the Agency;
- to approve amendments and updates of the MQF;
- to approve policies and guidelines relating to audit processes and the accreditation of programmes, qualifications and higher education providers;
- to receive and monitor reports, returns, statements and any other information relating to accreditation, institutional audit and evaluation; and;
- to continuously guide the Agency in its function as a quality assurance body and do all things reasonably necessary for the performance of its functions under the Act.

From time to time the Agency may establish committees for various purposes, including to provide input for policy decisions. These committees consist of resource persons who possess in-depth or specialized knowledge and experience in their respective disciplines to perform such duties as prescribed under the MQAA 2007.

2.2 THE MALAYSIAN OPTICAL COUNCIL

The Malaysian Optical Council (MOC), under the Optical Act 1991 is responsible for recognizing optometry/opticianry schools for the purpose of licensing their graduates for practice in Malaysia. Implicit is the role of setting standards and certifying the achievement of standards of optometry/opticianry programs awarded by all HEPs within and outside Malaysia.

2.3 JOINT TECHNICAL COMMITTEE

A Joint Technical Committee* responsible for the accreditation process and course approval in all HEP is set up under the MQA Act 2007 (Act 679), section 51. The Joint Technical Committee is responsible for constituting the evaluation panel, studying the report of the accrediting team and submitting the recommendations on

* henceforth referred to as the Joint Technical Committee

accreditation for ratification by the Council and the Accreditation Committee. The Joint Technical Committee is also responsible for reviewing the validity of the standards and procedures from time to time and to submit proposals for changes. The Joint Technical Committee is chaired by a member of Malaysian Optical Council from the Public Sector appointed by the Chairperson of the Council. Members include three representatives from the Malaysian Optical Council, two representatives from the Ministry of Health, one from MQA, one from MOHE, two from universities and one from JPA. Currently the secretariat of the Joint Technical Committee is at the Malaysian Optical Council.

The Joint Technical Committee will appoint a panel of assessors to evaluate the curriculum and to consider the HEP plans in principle and implementation details of at least the first two years of the programme. The Joint Technical Committee also has to review and make recommendations in relation to the application. A visit will be organized to the site where the program is intended to be offered. The panel will produce a final report which will be reviewed by the Joint Technical Committee before recommendation is made to MOC.

The Joint Technical Committee only judges whether the proposed school is likely to meet the accreditation standards. It does not decide on the need for a new HEP because the development of a new optometry/opticianry school is a complex undertaking. Decisions that need to be made about the workforce implications of the new school, how it will be resourced, and the educational needs it will serve are best left to other appropriate authorities other than the Joint Technical Committee. However, as the development of a new optometry/opticianry school will have an impact on the educational and clinical resources available to existing schools, the Joint Technical Committee may also advise MOC on how a new school will affect the overall standards of basic optometry/opticianry education.

Based on the recommendations of the MOC, an application to conduct an optometry/opticianry programme may be approved (provisional accreditation) or rejected by the Minister of Higher Education.

2.4 ACCREDITATION COMMITTEE

There are five Accreditation Committees covering the major fields of study, i.e., science and medicine, engineering and built environment, information technology and multimedia, arts and humanities, and the social sciences. The Accreditation Committees have the following functions:

- to evaluate and analyze programme accreditation reports;
- to make decisions on an HEP's application for Provisional or Full Accreditation of programmes and qualifications; and
- to grant, refuse, maintain or revoke Provisional Accreditation or Full Accreditation of programmes and qualifications.

2.5 INSTITUTIONAL AUDIT COMMITTEE

An Institutional Audit Committee has the following functions:

- to evaluate and analyze institutional audit reports;
- to determine the state of academic health of institutions of higher education;
- to recommend the awarding, or otherwise of an institutional self-accreditation status; and
- to make recommendations for the maintenance, suspension or revocation of self-accreditation status.

2.6 THE EQUIVALENCY COMMITTEE

All qualifications offered in Malaysia must establish their level vis-a-vis the MQF. However, there are qualifications, within as well as those originating from outside of Malaysia, whose level in the MQF is unclear and needs to be determined. The equivalency statement is generally used for purposes of admission, employment and recognition, although it is not legally binding on the authorities responsible for these.

The Equivalency Committee has the following functions:

- to receive and analyze equivalency assessment reports of programme and qualification; and
- to make decisions on the equivalency of qualifications for their placement in the level of qualifications in the MQF.

2.7 THE STANDARDS COMMITTEES

Standards is an essential component in a quality assurance system to determine the expected level of attainment. From time to time the MQA will establish standards committees, both permanent and ad hoc, consisting of experts in the various disciplines of study. The members of the committees come from academia, professional bodies and industry.

The Standards Committees have the following functions:

- to develop and review the guidelines, standards and criteria for programme accreditation and institutional audit;
- to develop and review standards for specific disciplines; and
- to develop and review guides to good practices.

The guidelines, standards and criteria are developed in consultation with principal stakeholders and various focus groups and approved by the MQA Council.

3. THE MALAYSIAN QUALIFICATIONS FRAMEWORK

The Malaysian Qualifications Framework (MQF) serves as a basis for quality assurance of higher education and as the reference point for national qualifications. It is an instrument that classifies qualifications based on a set of criteria that are approved nationally and benchmarked against international best practices. These criteria are accepted and used for all qualifications awarded by a recognized HEP. The Framework clarifies the academic levels, learning outcomes and credit systems based on student academic load. Hence, the MQF integrates all higher education qualifications. It also provides educational pathways through which it links these qualifications systematically. These pathways will enable the individual learner to progress through credit transfers and accreditation of prior experiential learning in the context of lifelong learning.

4. APPROACHES TO QUALITY ASSURANCE

The work of the MQA revolves around two major approaches to quality assure higher education in Malaysia. The first approach is to accredit programmes and qualifications. The second is to audit institutions or their components.

There are two levels in programme accreditation. The first level is Provisional Accreditation which indicates that the programme has fulfilled the minimum requirement for it to be offered. This level is connected to seeking approval from the MOHE to conduct the new programme. The second level is Full (or Final) Accreditation, i.e. a conferment to denote that a programme has met all the criteria and standards set for that purpose and in compliance with the MQF.

Institutional Audit takes many forms. It could be comprehensive or thematic; it could be by faculty or across faculties. It could take the form of periodic academic performance audit on institutions of higher learning or establishing the continuation or maintenance of programme accreditation status. It could take the form of an exercise for purposes of verifying data, for purposes of public policy input or for rating and ranking of institutions and programmes. The highest form of institutional audit is the self-accreditation audit, which can lead to a conferment of a self-accreditation status for the institution so audited, whereby it can accredit its own programmes.

The various approaches to quality assurance processes would generally include periodic monitoring to ensure that quality is maintained and continuously enhanced.

5. THE MALAYSIAN QUALIFICATIONS REGISTER

The Malaysian Qualifications Register (MQR) is a registry of all higher education qualifications accredited by the MQA. The MQR contains, among others, information on programmes, providers, levels and validity periods or cessation dates of these qualifications. It is meant to provide students, parents, employers, funding agencies and other related stakeholders with the necessary information about higher education qualifications in Malaysia. The MQR is accessible at www.mqa.gov.my/mqr/index.htm.

6. THE QUALITY ASSURANCE GUIDELINES

6.1 QUALITY ASSURANCE DOCUMENTS

The quality assurance evaluation would be guided by:

- The Malaysian Qualifications Framework (MQF);
- The Code of Practice for Programme Accreditation (COPPA);
- The Code of Practice for Institutional Audit (COPIA);
- Programme Discipline Standards; and
- Guides to Good Practices.

The *Code of Practice for Programme Accreditation (COPPA)* is adapted from the *Code of Practice for Quality Assurance in Public Universities of Malaysia (2002)* published by the Quality Assurance Division (QAD) of the MOHE. Also, *Lembaga Akreditasi Negara (National Accreditation Board, LAN)* -- the predecessor to the MQA -- had a series of guidelines for programme accreditation and good practices, which MQA will continue to utilize to complement COPPA and COPIA. From time to time, the MQA will develop new programme standards and guides to good practices to cover the whole range of disciplines and good practices. It will also review them periodically to ensure relevance and currency.

6.2 AREAS OF EVALUATION

The quality evaluation process covers the following nine areas:

1. Vision, mission, educational goals and learning outcomes;
2. Curriculum design and delivery;
3. Assessment of students;
4. Student selection and support services;
5. Academic staff;
6. Educational resources;
7. Programme monitoring and review;
8. Leadership, governance and administration; and
9. Continual quality improvement.

Each of these nine areas contains quality standards and criteria. These criteria have two distinct levels, i.e., benchmarked standards and enhanced standards. The degree of compliance to these nine areas of evaluation (and the criteria and standards accompanying them) expected of the HEP depends on the type and level of assessment.

Generally, the MQA subscribes to the shift from a fitness of purpose to a fitness for specified purpose. However, in the current stage of the development of Malaysian higher education and its quality assurance processes, there is a need to ensure that the HEPs fulfil the benchmarked standards. Nevertheless, the size, nature and diversity of the institutions call for flexibility wherever appropriate. Where necessary, HEPs may need to provide additional information to explain why certain standards are not applicable to their case when preparing their documents for submission to the MQA.

7. PROGRAMME ACCREDITATION

There are two levels of programme accreditation, i.e., Provisional Accreditation and Full (or Final) Accreditation.

The institution is required to submit all necessary documents to the Malaysian Qualification Agency for approval and provisional accreditation at least 9 months prior to the intended commencement of the programme. A school that is starting a new programme is assessed on its readiness and capacity to conduct and sustain an optometry/opticianry course. The HEP must have clear plans. The Joint Technical Committee decides whether the planned curriculum is likely to comply with the accreditation standards and whether the school has demonstrated the commitment and the capacity to manage the changed process.

The purpose of Provisional Accreditation is to establish whether the minimum requirements to conduct the programme have been met by the HEP in respect of the nine areas of evaluation and especially the curriculum design. Where necessary, a visit may be conducted to confirm the arrangement or the suitability of the facilities at the HEP premises. The evaluation is conducted by MQA's Panel of Assessors (POA) and their findings are tabled at the respective Accreditation Committee for their decision. The HEP uses the report from the Provisional Accreditation exercise as one of the requirements to seek approval from the MOHE to offer the programme, and, on obtaining it, to commence the programme.

The purpose of Full or Final Accreditation is to ensure that the programme has met the set of standards as in the *Code of Practice*, and is in compliance with the Framework. Full Accreditation is an external and independent assessment conducted

by MQA through its POA, who would evaluate the Programme Information and Self-Review Report submitted by the HEP.

The panel would also make an evaluation visit to the institution. This site visit is to validate and verify the information furnished by the HEP.

The panel will then submit the final report to the MQA.

7.1 THE ACCREDITATION REPORT

In the whole accreditation exercise, the feedback processes between the Agency and the HEP are communicated through the panel's oral exit report and written report in the spirit of transparency and accountability to reinforce continual quality improvement. The Accreditation Report will be made available to the HEP concerned. The most important purpose of the Report is for continual quality improvement of the HEP.

The Accreditation Report is a narrative that aims to be informative. It recognizes context and allows comparison over time. It discerns strengths and areas of concern as well as provides specific recommendations for quality enhancement in the structure and performance of the HEP, based on peer experience and the consensus on quality as embodied in the standards.

If the HEP fails to achieve the accreditation for the programme and it is unable to rectify the conditions of the rejection, the MQA will inform the relevant authority accordingly for its necessary action. In the case of a maintenance audit for programmes already accredited, the cessation date shall be effected on the MQR to indicate the revocation of the accreditation.

7.2 THE ACCREDITATION SUMMARY REPORT

A summary report summarizes the final evaluation report of the Panel. This report may be made accessible to the public. The report contains information that would be helpful to prospective students, parents, funding agencies and employers.

Accreditation adds value to the programme and qualification. It enhances public confidence and can become a basis of recognition nationally and internationally. The

accreditation reports can be used for benchmarking and for revising quality standards and practices. Benchmarking focuses on how to improve the educational process by exploiting the best practices adopted by institutions around the world.

7.3 FOREIGN SCHOOLS OF OPTOMETRY/OPTICIANRY

Malaysia has recognized many optometry/opticianry schools before the accreditation standards & procedures were evolved. For accreditation of foreign schools, the same standards and procedures must apply.

During the interim period when countries are setting up their accreditation system, schools that are identified on certain criteria (e.g. change in ranking in their own country, performance of graduates does not meet expected outcomes) will be invited to apply for reaccreditation.

8. INSTITUTIONAL AUDIT

A complete description about institutional audit in the MQA quality assurance processes is provided in its *Code of Practice for Institutional Audit* (Petaling Jaya, Agensi Kelayakan Malaysia, 2008).

However, in programme accreditation, there is an element of auditing in the form of Programme Maintenance Audit, whose purpose is to monitor and to ensure the maintenance and enhancement of programmes that have been accredited. The Programme Maintenance Audit is crucial given the new approach that makes the accredited status of a programme perpetual, that is, without an expiry provision. Programme Maintenance Audit, which applies to all accredited programmes and qualifications, must be carried out at least once in three years.

Section 2

Guidelines on Criteria and Standards for Programme Accreditation

INTRODUCTION

Higher Education Providers (HEP) are responsible for designing and implementing programmes that are appropriate to their missions and goals.

This *Code of Practice for Programme Accreditation* (COPPA) guides the HEP and the MQA in quality assuring programmes offered by the former. Unlike the *Code of Practice for Institutional Audit* (COPIA), COPPA is dedicated to programme evaluation for the purpose of programme accreditation. Both COPPA and COPIA utilize a similar nine areas of evaluation for quality assurance.

However, these nine areas will be adjusted accordingly to fit their distinct purposes. For example, while the item on vision is crucial at the institutional level, its fit at the programme level is more directed to see how a specific programme supports the larger institutional vision. Similarly, when COPIA talks about curriculum design its perspective is largely about institutional policies, structures, processes and practices related to curriculum development across the institution. In COPPA, it refers specifically to description, content and delivery of a particular programme.

This chapter discusses guidelines on criteria and standards for programme accreditation. It recommends practices that are in line with internationally recognized good practices. They are aimed at assisting HEPs attain at least benchmarked standards in each of the nine areas of evaluation for programme accreditation and to stimulate the HEP to continuously improve the quality of their programmes. All these are in support of the aspiration to make Malaysia the centre for educational excellence.

The guidelines are designed to encourage diversity of approach that is compatible with national and global human resource requirements. The guidelines define standards for higher education in broad terms, within which an individual HEP can creatively design its programme of study and appropriately allocate resources in accordance with its stated educational goals and learning outcomes.

The guidelines are divided into the following nine areas of evaluation:

1. Vision, mission, educational goals and learning outcomes;
2. Curriculum design and delivery;
3. Assessment of students;
4. Student selection and support services;
5. Academic staff;
6. Educational resources;
7. Programme monitoring and review;
8. Leadership, governance and administration; and
9. Continual quality improvement.

The programme standards define the expected level of attainment for each criterion and serve as a performance indicator. They are specified at two levels of attainment: benchmarked standards and enhanced standards. Benchmarking standards are standards that **must** be met and its compliance demonstrated during a programme accreditation exercise. Benchmarking standards are expressed as a “**must**”.

Enhanced programme standards are standards that **should** be met as the institution strives to continuously improve itself. Enhanced standards reflect international and national consensus on good practices in higher education. HEPs should be able to demonstrate achievement of some or all of these or that initiatives toward the achievement of these programme standards are underway. Achievement of these standards will vary with the stage of development of the HEPs, their resources and policies. Enhanced standards are expressed by a “**should**”.

The use of the two levels recognizes the fact that HEPs are at different stages of development and that quality improvement is a continual process. Thus, these levels are utilized by the MQA for purposes of evaluating applications for programme accreditation, both Provisional and Full Accreditation. In principle, an HEP must demonstrate that it has met all the benchmarking standards for its programme to be fully accredited, but nevertheless taking into account flexibility and recognition of diversity to facilitate the creative growth of education.

In the remaining pages of this chapter, specific criteria of the standards are spelt out for each of the nine areas of evaluation. These are operationally defined and serve as performance indicators of quality.

AREA 1: VISION, MISSION, EDUCATIONAL GOALS AND LEARNING OUTCOMES

The vision, mission and educational goals of the HEP guide its academic planning and implementation as well as bring together its members to strive towards a tradition of excellence. The general goal of higher education is to produce broadly educated graduates through the:

- provision of knowledge and practical skills based on scientific principles;
- inculcation of attitudes, ethics, sense of professionalism and leadership skills for societal advancement within the framework of the national vision;
- nurturing of the ability to analyze and solve problems as well as to evaluate and make decisions critically and creatively based on evidence and experience;
- development of the quest for knowledge and lifelong learning skills that are essential for continuous upgrading of knowledge and skills that parallel the rapid advancement in global knowledge and
- consideration of other issues that are relevant to the local, national and international context.

Academic programmes are the building blocks that support the larger vision and mission of the HEP. Hence, one must take into consideration these larger institutional goals when designing programmes to ensure that one complements the other.

The quality of the HEP and the programme that it offers is ultimately assessed by the ability of its graduates to carry out their expected roles and responsibilities in society. This requires a clear statement of the competencies, i.e., the practical, intellectual and soft skills that are expected to be achieved by the student at the end of programme. The main domains of learning outcomes cover knowledge, practical and social skills, critical and analytical thinking, values, ethics and professionalism. The levels of competency of these learning outcomes are defined in the Malaysian Qualifications Framework (MQF).

STANDARDS FOR AREA 1

1.1. Statement of Programme Aims, Objectives and Learning Outcomes

A programme's stated aims, objectives and learning outcomes reflect what it wants the learner to achieve. It is crucial for these aims, objectives and learning outcomes to be expressed explicitly and be made known to learners and other stakeholders alike.

1.1.1 Benchmarked Standards

- The programme **must** define its aims, objectives and learning outcomes and make them known to its internal and external stakeholders.
- The programme objectives **must** reflect the key elements of the outcomes of higher education that are in line with national and global developments.
- The programme aims, objectives and learning outcomes **must** be developed in consultation with principal stakeholders which should include the academic staff.
- The programme aims, objectives and learning outcomes **must** be consistent with, and supportive of, the HEP's vision and mission.

1.1.2 Enhanced Standards

- The aims, objectives and learning outcomes of the programme **should** encompass qualities in the areas of social responsibility, research and scholarly attainment, community involvement, ethical values, professionalism, and knowledge creation.
- The department **should** consult relevant stakeholders, particularly potential employers, when formulating programme aims and objectives.
- The programme aims, objectives and learning outcomes **should** be periodically reviewed in consultation with a wide range of stakeholders that may include the alumni, industry, community, civil society organizations and international peers.

1.2 Learning Outcomes

The quality of a programme is ultimately assessed by the ability of the learner to carry out their expected roles and responsibilities in society. This requires the programme to have a clear statement of the learning outcomes to be achieved by the learner.

1.2.1 Benchmarked Standards

- The programme **must** define the competencies that the student should demonstrate on completion of the programme that cover mastery of body of knowledge; practical skills; social skills and responsibilities; values, attitudes and professionalism; problem solving and scientific skills; communication, leadership and team skills; information management and lifelong learning skills and managerial and entrepreneurial skills.

- The programme **must** demonstrate how the component modules contribute to the fulfilment of the programme's learning outcomes.
- The programme **must** show how the student is able to demonstrate the learning outcomes, for example, through summative assessments.

1.2.2 Enhanced Standards

- The programme **should** specify the link between competencies expected at completion of studies and those required during career undertakings and further studies.

AREA 2: CURRICULUM DESIGN AND DELIVERY

For the purpose of accreditation for programmes offered by the Higher Education Providers, the term 'curriculum design and delivery' in this code of practice is used interchangeably with the term 'programme design and delivery'. "Programme" means an arrangement of courses that are structured for a specified duration and learning volume to achieve the stated learning outcomes and usually leading to an award of a qualification.

STANDARDS FOR AREA 2

2.1 Academic Autonomy

An academic institution is expected to have sufficient autonomy over academic matters. Such autonomy should be reflected at the departmental level where the programme is being offered.

2.1.1 Benchmarked Standards

- The department **must** have sufficient autonomy to design the curriculum and to allocate the resources necessary for its implementation to ensure the achievement of learning outcomes.
- Where applicable, the above provision **must** also cover programmes franchised to, or from, other HEPs in accordance with national policies.
- The academic staff **must** be given sufficient autonomy to focus on areas of his expertise, such as curriculum development and implementation, academic supervision of students, research and writing, scholarly activities, and academically-related administrative duties and community engagement.

2.1.2 Enhanced Standards

- The HEP **should** have a clearly stated policy on conflict of interest, particularly in the area of private practice and part-time employment.
- The boundaries of academic autonomy for the department and the academic staff **should** continue to expand reflecting the intellectual maturity of the HEP.

2.2 Programme Design and Teaching-Learning Methods

2.2.1 Benchmarked Standards

- The department **must** have a defined process by which the curriculum is established, reviewed and evaluated.
- The process **must** involve the academic and administrative staff of the department.
- The programme **must** be considered only after an assessment has indicated that there is a need for the programme to be conducted.
- The programme **must** be considered only after the resources to support the programme have been identified.
- The programme content, approach, and teaching-learning methods **must** be appropriate and consistent, and supports the achievement of the programme learning outcomes.
- There **must** be a variety of teaching-learning methods in order to achieve the eight domains of the learning outcomes and to ensure that students take responsibility for their own learning.

2.2.2 Enhanced Standards

- The curriculum **should** encourage multi-disciplinary approaches to enhance the personal development of the student through electives, study pathways and other means, which should be monitored and appraised.
- The needs analysis for the programme **should** involve feedback from external sources including market, students, alumni, peers, and international experts whose commentaries **should** be utilized for purposes of curriculum improvement.
- There **should** be co-curricular activities that will enrich students' experiences, and foster personal development and responsibility.

2.3 Curriculum Content and Structure

A teaching-learning environment can only be effective when the curriculum content and structure of a programme continually keep abreast with the most current development in the field of study.

2.3.1 Benchmarked Standards

- The programme **must** incorporate the core subject matter essential for the understanding of the concepts, principles and methods that support the programme outcomes.
- The programme **must** fulfil the requirements of the discipline taking into account the appropriate discipline standards and international best practices for the field.
- The content of the programme **must** be periodically reviewed to keep abreast with scientific, technological and knowledge development of the discipline, and with the needs of society.

2.3.2 Enhanced Standards

- The department **should** establish mechanisms -- through the use of the latest technology and through global networking -- to access to real time information and to identify up-to-date topics of importance for inclusion in the curriculum and its delivery.

2.4 Management of the Programme

2.4.1 Benchmarked Standards

- Students **must** be provided with the most current written information about the aims, outline, learning outcomes, and methods of assessment of the programme.
- The programme **must** have an appropriate coordinator and team of academic staff (e.g. a programme committee) responsible for the planning, implementation, evaluation and improvement of the programme.
- The programme team **must** have authority and established procedures for planning and monitoring the programme.
- The programme team **must** have adequate resources to implement the teaching and learning activities, and conduct programme evaluation for quality improvement.

- The programme, especially its content and delivery, **must** be regularly reviewed and evaluated and the results utilized to assure quality. (At level 6 and above of the MQF, the review must involve external examiners.)
- The department **must** provide its student a conducive learning environment in which scholarly and creative achievements are nurtured.

2.4.2 Enhanced Standards

- Innovations to improve teaching and learning **should** be developed, supported, and evaluated.
- Innovations on improving teaching and learning **should** be done in consultation with principal stakeholders and experts, internally and externally.
- The review and evaluation of the programme **should** involve stakeholders as well as external expertise nationally and internationally.

2.5 Linkages with External Stakeholders

Linkages with stakeholders outside of the department, particularly at the operational level, are crucial for identifying, clarifying and improving key aspects of the programme and their interrelationships in the planning and implementation processes. The linkages are best developed and maintained at local, national, regional and global levels.

2.5.1 Benchmarked Standards

- The department **must** have linkages with all levels of stakeholders outside of the department for the purposes of curriculum planning, implementation and review.

2.5.2 Enhanced Standards

- The programme team **should** obtain feedback from employers and use the information for curriculum improvement, including for purposes of student placement, training and workplace exposure.
- Students **should** be given the opportunity to develop linkages with external stakeholders.

AREA 3: ASSESSMENT OF STUDENTS

Student assessment is a crucial aspect of quality assurance because it drives student learning. It is one of the most important measures to show the achievement of learning outcomes. The result of assessment is also the basis in awarding qualifications. Hence, methods of student assessment have to be clear, consistent, effective, reliable and in line with current practices and must clearly support the achievement of learning outcomes.

STANDARDS FOR AREA 3

3.1 Relationship Between Assessment and Learning

3.1.1 Benchmarked Standards

- Assessment principles, methods and practices **must** be aligned with learning outcomes and programme content.
- The assessment **must** be consistent with the levels defined in the MQF, the eight domains of learning outcomes and the programme standards.

3.1.2 Enhanced Standards

- The link between assessment and learning outcomes in the programme **should** be reviewed periodically to ensure its effectiveness.

3.2 Assessment Methods

3.2.1 Benchmarked Standards

- The frequency, methods, and criteria of student assessment -- including the grading criteria -- **must** be documented and communicated to students on the commencement of the programme.
- Assessment **must** be summative and formative.
- A variety of methods and tools **must** be used appropriately to assess the learning outcomes and competencies.
- There **must** be mechanisms to ensure the validity, reliability, consistency, currency and fairness of the assessment methods.
- The assessment system **must** be reviewed at appropriate scheduled intervals.

3.2.2 Enhanced Standards

- The methods of assessing **should** be comparable to international best practices.
- The review of the assessment system **should** be done in consultation with external experts, both locally and internationally.

3.3 Management of Student Assessment

The management of the assessment system is directly linked to the HEP's responsibility as a body that confers qualifications. The robustness and security of the processes and procedures related to student assessment are important in inspiring confidence in the quality of the qualifications awarded by the HEP.

3.3.1 Benchmarked Standards

- Student assessment results **must** be communicated to the student within reasonable time.
- Changes to student assessment methods **must** follow established procedures and regulations and communicated to the student prior to their implementation.
- There **must** be mechanisms to ensure the security of assessment documents and records.
- The programme grading, assessment, and appeal policies and practices **must** be publicized.

3.3.2 Enhanced Standards

- The department and its academic staff **should** have sufficient autonomy in the management of student assessment.
- There **should** be independent external scrutiny to evaluate and improve the management of student assessment, including formal certification of the processes.

AREA 4: STUDENT SELECTION AND SUPPORT SERVICES

In general, admission policies of the programme need to comply with the prevailing policies of the Malaysian Ministry of Higher Education (MOHE). There are varying views on the best method of student selection. Whatever the method used, the HEP

must be able to defend its consistency. The number of students to be admitted to the programme is determined by the capacity of the HEP and the number of qualified applicants. HEP admission and retention policies must not be compromised for the sole purpose of maintaining a desired enrolment. If an HEP operates geographically separated campuses or if the programme is a collaborative one, the selection and assignment of all students must be consistent with national policies.

STANDARDS FOR AREA 4

4.1 Admission and Selection

4.1.1 Benchmarked Standards

- The programme **must** have a clear statement on the criteria and processes of student selection, including that of transferring students.
- The number for each student intake **must** be stated and related to the capacity of the department to effectively deliver the programme.
- The criteria and processes of selection **must** be published and disseminated to the public, especially students.
- Prerequisite knowledge and skills for purposes of student entry into the programme **must** be clearly stated.
- If a selection interview is utilized, the process **must** be structured, objective and fair.
- The student selection **must** be free from all forms of discrimination and bias.
- There **must** be a clear policy on, and appropriate mechanisms for, appeal.
- The department **must** offer appropriate developmental or remedial support to assist students who need such support.
- Visiting, exchange and transfer students **must** be accounted for to ensure the adequacy of the department's resources to accommodate the additional students.
- The admission policy for the programme **must** be monitored and reviewed periodically to continuously improve the selection processes.

4.1.2 Enhanced Standards

Review of the admission policy and processes **should** be in consultation with relevant stakeholders, nationally and internationally.

- There **should** be a relationship between student selection, the programme, and the desired learning outcomes.

4.2 Articulation Regulations, Credit Transfer and Credit Exemption

4.2.1 Benchmarked Standards

- The department **must** have well-defined and effectively disseminated policies, regulations and processes concerning articulation practices, credit transfers and credit exemptions.

4.2.2 Enhanced Standards

- The department **should** always be in touch with the latest development and thinking about the processes of articulation, credit transfer and credit exemptions, including cross-border collaborative provisions.

4.3 Transfer of Students

In this age of increased cross-border education and student mobility, nationally and globally, the question of the transfer of students and credits and the articulation of accumulated learning has become a very important aspect of higher education. Thus, sufficient attention must be given to ensure that transfer students are smoothly assimilated into the institution without undue disruption to his studies.

4.3.1 Benchmarked Standards

- The department **must** have a well disseminated policy with clear criteria, mechanisms and processes, both academic and non-academic, to enable qualified students to transfer to another programme.
- Incoming transfer students **must** have comparable achievement in their previous institution of study.

4.3.2 Enhanced Standards

- The department **should** have in place policies and mechanisms that facilitate student mobility between programmes and institutions, within the country or cross-border, through articulation arrangements, joint degrees, exchange semesters, advanced standing arrangements, and the like.

4.4 Student Support Services and Co-curricular Activities

Student support services and co-curricular activities facilitate learning and wholesome personal development and contribute to the achievement of the learning outcomes. It includes physical amenities and services such as recreation, arts and culture, accommodation, transport, safety, food, health, finance, academic advice and counselling. Students with special needs and those facing personal, relationship or identity problems can be helped through special-purpose facilities and professional counselling. Career counselling can help students make more informed programme and career choices by examining students' approach to career planning and suggesting appropriate resources to guide them.

(Many of the components below apply at the institutional level and the students at the department level have access to these central services and facilities.)

4.4.1 Benchmarked Standards

- Students **must** have access to appropriate and adequate support services, such as physical, social, financial and recreational facilities, and counselling and health services.
- Student support services **must** be evaluated regularly to ensure their adequacy, effectiveness and safety.
- There **must** be a mechanism for students to air grievances and make appeals relating to student support services.
- There **must** be a designated administrative unit responsible for planning and implementing student support services staffed by individuals who have appropriate experience consistent with their assignments.
- Academic and career counselling **must** be provided by adequate and qualified staff and issues pertaining to counselling **must** remain confidential.
- An effective induction to the programme **must** be made available to students and evaluated regularly with special attention given to out of state and international

students as well as students with special needs.

4.4.2 Enhanced Standards

- Student support services **should** be given prominent organizational status in the HEP and a dominant role in supplementing programme learning outcomes.
- Student academic and non-academic counselling **should** include ongoing monitoring of the student's progress to measure the effectiveness of, and to improve, the counselling services.
- There **should** be a structured training and development plan to enhance the skills and professionalism of the academic and non-academic counsellors.

4.5 Student Representation and Participation

The participation of students in various departmental activities inculcates self-confidence for leadership and provides experience in education and related matters. By involving students, it will also be easier for the department to obtain their feedback. Student publications can also contribute to an atmosphere of responsible intellectual discourse.

4.5.1 Benchmarked Standards

- The department **must** adhere to the HEP's policy on student participation and representation as and when they apply to the departmental level.
- There must be a policy and programmes for active student participation in areas that affect their welfare, for example, peer counselling, co-curricular activities, and community engagement.

4.5.2 Enhanced Standards

- At the department level, student activities and student organizations **should** be facilitated to gain basic managerial and leadership experience, to encourage character building, to inculcate a sense of belonging and responsibility, and to promote active citizenship.
- Where student publications or other media exist, the HEP **should** provide a clear, formal and well publicized policy regarding such publications.
- The department **should** have adequate facilities to encourage students to be

involved in publication activities.

4.6 Alumni

4.6.2 Benchmarked Standards

Not applicable.

4.6.3 Enhanced Standards

- The department **should** foster active linkages with its alumni.
- The department **should** encourage the alumni to play a role in preparing the students for their professional future, and to provide linkages with industry and the professions.
- The department **should** encourage the alumni to play a role in the development of the programme.

AREA 5: ACADEMIC STAFF

The quality of the academic staff is one of the most important components in assuring the quality of higher education and therefore every effort must be made to establish proper and effective recruitment, service, development and appraisal policies that are conducive to staff productivity. It is important that every programme has sufficient number of appropriately qualified academic staff working in a conducive environment that encourages recruitment and retention.

Teaching, research, consultancy services and community engagement are the core interrelated academic activities. Nevertheless, it must be acknowledged that the degree of involvement in these areas varies between academic staff and between academic institutions.

Work and its equitable distribution is one of the ways the HEP recognizes meritorious contribution for the purpose of promotion, salary determination or other incentives. It is crucial for the HEP to provide training for its academic staff. The equitable distribution of work helps ensure that such training can be done systematically and fairly.

STANDARDS FOR AREA 5

5.1 Recruitment and Management

5.1.1 Benchmarked Standards

- The HEP **must** have a clear and documented academic staff recruitment policy where the criteria for selection are based on academic merit.
- The staff–student ratio for the programme **must** be appropriate to the teaching-learning methods and comply with the programme discipline standards.
- The department **must** determine the core academic staff responsible for implementing the programme, as well as those teaching the core subjects.
- The department **must** have an adequate number of full-time academic staff for the programme.
- The department **must** clarify the roles of the academic staff in teaching, research and scholarly activities, consultancy, community services and administrative functions.
- The policy of the department **must** reflect an equitable distribution of responsibilities among the academic staff.
- Recognition and reward through promotion, salary increment or other remuneration **must** be based on equitable work distribution and meritorious academic roles using clear and transparent policies and procedures.
- In playing a role in the HEP's academic appointment and promotion exercise -- for example, that of Professors and Associate Professors -- the department **must** be guided by considerations which are in line with national policy and international best practices.

5.1.2 Enhanced Standards

- The recruitment policy for a particular programme **should** seek a balance between senior and junior academic staff, between academic and non-academic staff, between academic staff with different approaches to the subject, and preferably between local and international academic staff with multi-disciplinary backgrounds.
- The department **should** have national and international linkages to provide for the involvement of well renowned academics and professionals in order to enhance teaching and learning of the programme.

5.2 Service and Development

5.2.1 Benchmarked Standards

- The institutional and departmental policy on the academic staff **must** complement each other and address matters related to service, development and appraisal.
- The department **must** provide mentoring and formative guidance for new academic staff as part of its staff development programme.
- The academic staff **must** be provided with the necessary training, tools and technology for self-learning, access to information and for communication.

5.2.2 Enhanced Standards

- The HEP **should** provide opportunities -- including funding -- for academic staff participation in professional, academic and other relevant activities, national and international. It **should** appraise this participation and demonstrate that it utilizes the results of this appraisal for improvement of the student experience.
- The HEP **should** have appropriate provision to allow for advanced enhancement for its academic staff through research leave, sabbatical, and sponsored participation in, and organization of, conferences.

AREA 6: EDUCATIONAL RESOURCES

Adequate educational resources are necessary to support the teaching-learning activities of the programme. These resources include finance, expertise, physical infrastructure, information and communication technology, and research facilities.

The physical facilities of a programme are largely guided by the needs of the specific field of study. These facilities include the space and the necessary equipment and facilities for administration, for large and small group learning (e.g., libraries, resource centers, lecture halls, auditoriums, tutorial rooms), for practical classes (e.g., science and computer laboratories, workshops, studios), and for clinical learning (e.g., hospitals, clinics).

Where appropriate, research facilities are included as part of educational resources because a research-active environment improves the quality of higher education. A research culture attracts high calibre academics that engender critical thinking and enquiring mind, contributing further to knowledge advancement. Active researchers are best suited to interpret and apply current knowledge for the benefit of academic

programmes and the community. Active researchers also attract grants that increase the number of staff and their morale. Interdisciplinary research has positive effects on academic programmes.

A research-active environment provides opportunities for students to observe and participate in research through electives or core courses. Exposure to an environment of curiosity and inquiry encourages students to develop lasting skills in problem-solving, data analysis and continuous updating of knowledge. Some students may develop interest in research as a career choice.

Educational experts are specialized staff from various disciplines who have been trained or who have considerable experience in effective teaching-learning methodologies and related matters of higher education. They would deal with problems and provide training as well as advice on teaching-learning processes and practices. The expertise can be provided by an education unit or division at the HEP or acquired from an external source.

Other equally important facilities, which are essential for supporting teaching-learning activities include dormitories, transport, security, recreation and counselling. A balanced and proportional increase in the direct and indirect educational resources supports effective teaching-learning.

Adequate quantity of physical and financial resources and services are crucial. Equally important, if not more so, is the quality, relevance, accessibility, availability and delivery of such resources and services, and their actual utilization by students. These considerations must be taken into account in evaluating the effectiveness of educational resources.

STANDARDS FOR AREA 6

6.1 Physical Facilities

6.1.1 Benchmarked Standards

- The programme **must** have sufficient and appropriate physical facilities and educational resources to ensure its effective delivery.
- The physical facilities **must** comply with the relevant laws, and with health and safety regulations.
- The library or resource centre **must** have adequate and up-to-date reference

materials and qualified staff that meet the needs of the programme and research amongst academic staff and students. This would include provisions for appropriate computer and information and communication technology-mediated reference materials.

- Equipments and facilities for training **must** be adequately provided for in practical-based programmes.
- For research-based programmes and programmes with a substantial research component, the department **must** provide adequate and suitable research facilities and environment.
- The HEP **must** have a policy regarding the selection and effective use of electronic devices, internal and external networks, and other effective means of using information and communication technology in the programme. This includes coordination with the library services.

6.1.2 Enhanced Standards

- The learning environment **should** be regularly improved through renovations, building new facilities and the acquisition of the latest and appropriate equipment to keep up with the development in educational practices and changes.
- The educational resources, services and facilities **should** be periodically reviewed to assess the quality and appropriateness for current education and training.
- Students **should** be provided with opportunities to learn how to access information in different mediums and formats.
- The facilities **should** be user friendly to those with special needs.

6.2 Research and Development

(These standards are largely directed to universities offering degree level programmes and above.)

6.2.1 Benchmarked Standards

- The department **must** have a policy and a programme on research and development and adequate facilities to sustain them.
- The interaction between research and education **must** be reflected in the curriculum, influence current teaching, and encourage and prepare students for engagement in research, scholarship and development.

6.2.2 Enhanced Standards

- There **should** be a link between research, development and commercialization.
- The department **should** periodically review research resources and facilities and take appropriate action to enhance its research capabilities and to keep up with latest technology.

6.3 Educational Expertise

6.3.1 Benchmarked Standards

- The department **must** have a policy on the use of educational expertise in the planning of educational programmes and in the development of new teaching and assessment methods.

6.3.2 Enhanced Standards

- There **should** be access to educational experts and the department should utilize such expertise for staff development and educational research.

6.4 Educational Exchanges

6.4.1 Benchmarked Standards

- The department **must** comply with the HEP policy on educational exchanges and disseminate it to students and faculty members.

6.4.2 Enhanced Standards

- The department **should** have collaboration with other relevant institutions, nationally and internationally, and a clear policy and future planning on such collaborative activities.
- The department **should** provide appropriate facilities and adequate financial allocation for exchanges of academic staff, students, and resources.

6.5 Financial Allocation

6.5.1 Benchmarked Standards

- The HEP **must** have a clear line of responsibility and authority for budgeting and resource allocation that take into account the specific needs of the department.
- The department **must** have budgetary and procurement procedures to ensure that its resources are sufficient and that it is capable of utilizing its finances efficiently and responsibly to achieve its objectives and maintain high standards of quality.

6.5.2 Enhanced Standards

- Those responsible for a programme **should** be given sufficient autonomy to appropriately allocate resources to achieve the programme goals and to maintain high educational standards.

AREA 7: PROGRAMME MONITORING AND REVIEW

Quality enhancement calls for programmes to be regularly monitored, reviewed and evaluated. This includes the monitoring, reviewing and evaluating of institutional structures and processes (administrative structure, leadership and governance, planning and review mechanisms), curriculum components (syllabi, teaching methodologies, learning outcomes) as well as student progress, employability and performance.

Feedback from multiple sources -- students, alumni, academic staff, employers, professional bodies, parents -- assist in enhancing the quality of the programme. Feedback can also be obtained from an analysis of student performance and from longitudinal studies.

Measures of student performance would include the average study duration, assessment scores, passing rate at examinations, success and dropout rates, students' and alumni's report about their learning experience, as well as time spent by students in areas of special interest. Evaluation of student performance in examinations can reveal very useful information. If student selection has been correctly done, a high failure rate in a programme indicates something amiss in the curriculum content, teaching-learning activities or assessment system. The programme committees need to monitor the performance rate in each course and investigate if the rate is too high or too low.

Student feedback, for example, through questionnaires and representation in programme committees, is useful for identifying specific problems and for continual improvement of the programme.

One method to evaluate programme effectiveness is a longitudinal study of the graduates. The department should have mechanisms for monitoring the performance

of its graduates and for obtaining the perceptions of society and employers on the strengths and weaknesses of the graduates and to respond appropriately.

STANDARDS FOR AREA 7

7.1 Mechanisms for Programme Monitoring and Review

7.1.1 Benchmarked Standards

- Various aspects of student performance and progression **must** be analyzed in relation to the objectives, the curriculum and the learning outcomes of the programme.
- There **must** be a programme evaluation, done periodically, using proper mechanisms and resources, including benchmark data, teaching-learning methods and technologies, administration and related educational services, as well as feedback from principal stakeholders.
- There **must** be a programme review committee in the department headed by a designated coordinator.
- In collaborative arrangements, the partners involved **must** share the responsibilities of the programme monitoring and review.

7.1.2 Enhanced Standards

- The department's self-review processes **should** be able to identify areas of concerns and demonstrate ways to improve the programme.

7.2 Involvement of Stakeholders

7.2.1 Benchmarked Standards

- Programme evaluation **must** involve the relevant stakeholders.

7.2.2 Enhanced Standards

- Stakeholders **should** have access to the report on programme review, and their views considered.
- Stakeholder feedback -- particularly that of the alumni and employers -- **should** be incorporated into a programme review exercise.
- For a professional programme, the department **should** engage the relevant professional body in its programme evaluation exercise.

AREA 8: LEADERSHIP, GOVERNANCE AND ADMINISTRATION

There are many ways of administering an educational institution and the methods of management differ between HEPs. Nevertheless, governance that reflects the leadership of an academic organization must emphasize excellence and scholarship. At the departmental level, it is crucial that the leadership provides clear guidelines and direction, builds relationships amongst the different constituents based on collegiality and transparency, manages finances and other resources with accountability, forges partnerships with significant stakeholders in educational delivery, research and consultancy and dedicates itself to academic and scholarly endeavours. Whilst formalized arrangements can protect these relationships, they are best developed by a culture of reciprocity, mutuality and open communication.

STANDARDS FOR AREA 8

8.1 Governance

8.1.1 Benchmarked Standards

- The policies and practices of the department **must** be consistent with the statement of purpose of the HEP.
- The department **must** clarify its governance structures and functions, the relationships within them, and their impact on the programme, and these **must** be communicated to all parties involved based on the principles of transparency, accountability and authority.
- The department board **must** be an active policy-making body with an adequate degree of autonomy.
- Mechanisms to ensure functional integration and comparability of educational quality **must** be established for programmes conducted in campuses that are geographically separated.

8.1.2 Enhanced Standards

- The department **should** have a comprehensive, interconnected and institutionalized committee system responsible for programmes that takes into consideration, among others, internal and external consultation, feedback, market needs analysis and employability projections.

- The governance principles **should** reflect the representation and participation of academic staff, students and other stakeholders.

8.2 Academic Leadership of the Programme

8.2.1 Benchmarked Standards

- The criteria for the appointment and the responsibilities of the academic leadership for the programme **must** be clearly stated.
- The academic leadership of the programme **must** be held by those with the appropriate qualifications and experience, and with sufficient authority for curriculum design, delivery and review.
- Mechanisms and processes **must** be in place to allow for communication between the programme and the HEP leaderships in relation to matters such as staff recruitment and training, student admission, and allocation of resources and decision making processes.

8.2.2 Enhanced Standards

- The academic leadership **should** be evaluated at defined intervals with respect to the performance of the programme.
- The academic leadership **should** take on the responsibility of creating a conducive environment to generate innovation and creativity.

8.3 Administrative and Management Staff

8.3.1 Benchmarked Standards

- The administrative staff of the department **must** be appropriate and sufficient to support the implementation of the programme and related activities, and to ensure good management and deployment of the resources.
- The department **must** conduct regular performance review of the programme's administrative and management staff.

8.3.2 Enhanced Standards

- The department **should** have an advanced training scheme for the administrative and management staff to fulfil the specific needs of the programme, for example, risk management, maintenance of specialized equipment, and additional technical skills.

8.4 Academic Records

8.4.1 Benchmarked Standards

- The departmental policies and practices concerning the nature and security of student and academic staff records **must** be consistent with that of the HEP.
- The department **must** implement policies that have been established by the HEP on the rights of individual privacy and the confidentiality of records.

8.4.2 Enhanced Standards

- The department **should** continuously review policies on security of records including increased use of electronic technologies and its safety systems.

AREA 9: CONTINUAL QUALITY IMPROVEMENT

Increasingly, society demands greater accountability from HEPs. Needs are constantly changing because of the advancements in science and technology and the explosive growth in global knowledge which is rapidly and widely disseminated.

In facing these challenges, HEPs have little choice but to become dynamic learning organizations that need to continually and systematically review and monitor the various issues so as to meet the demands of the constantly changing environment.

STANDARDS FOR AREA 9

9.1 Quality Improvement

9.1.1 Benchmarked Standards

- The department **must** support and complement the HEP's policies, procedures and mechanisms for regular reviewing and updating of its structures, functions, strategies and core activities to ensure continuous quality improvement.
- The department **must** develop a system to review its programmes from time to time.
- The department **must** initiate a review of the programme, implement its recommendations, and record the achievements accomplished in the quality improvement of the programme.

9.1.2 Enhanced Standards

- The person or unit responsible for internal quality assurance of the department **should** play a prominent role in the policy processes of the department.
- The department **should** embrace the spirit of continual quality improvement based on prospective studies and analyses. These should lead to the revisions of its current policies and practices, taking into consideration past experiences, present conditions, and future possibilities.

Section 3

Submission for Provisional and Full Accreditation

INTRODUCTION

This section contains information and reference to assist the Higher Education Provider (HEP) in the preparation of submission for Provisional and Full Accreditation of a programme. It is not a prescriptive tool; it is a general manual meant to assist the provider to understand and interpret the necessary information required for such a submission. The HEP should follow closely the requirements found in Section 3.1 below and clarify with the MQA from time to time should the need arise.

Although comprehensive, not all items in this section apply equally to all submissions; some are more relevant and applicable than others. The HEP should utilize the guidelines appropriately and customize their submission in accordance to the specific needs of their programme. They should, however, indicate -- and explain -- items that are not applicable to them.

The guidelines in this section cover all the main dimensions in the nine areas of evaluation. It also provides illustrative examples. The HEP is expected to provide appropriate information with evidences that support and best illustrate their specific case. The HEP is also welcomed to furnish additional information that may not be specifically covered by these guidelines.

The information provided by the HEP for its submission should be brief, concise and succinct.

3.1 The Documentation Required

HEPs are required to submit the documentations listed below for consideration for Provisional and Full Accreditation.

For Provisional Accreditation, the HEP must submit:

The MQA-01 – Part A: General Information on the HEP

This is an institutional profile of the HEP.

Part B: Programme Description

This describes the programme, including its name, level, credit value, duration of study, entry requirement, mode of delivery, and the awarding body.

Part C: Programme Standards

This provides the information pertaining to the nine areas of evaluation and the standards in each of them.

For Full Accreditation, the HEP must submit the MQA-02. This consists of an updated version of Part A, B and C as well as a Self-Review Report (Part D).

Submissions for both levels of accreditation may need to include relevant attachments, appendices and supporting documents.

The remaining pages of this section, consists of descriptions of templates for Part A, Part B and Part C, as well as the guidelines to a Self-Review Report (Part D).

PART A: GENERAL INFORMATION ON THE HIGHER EDUCATION PROVIDER

Part A of the MQA-01 and MQA-02 of this Code of Practice for Programme Accreditation (COPPA) seeks general information on the higher education provider (HEP). It is basically an institutional profile of the HEP.

There are 19 items listed below, most of which are self-explanatory.

Items 1 and 2 ask for the name of the HEP and the date of its establishment. Item 3 asks for the reference number to show that the institution has received formal approval of its establishment from relevant authority. Item 4 asks for the name and designation of the Chief Executive Officer of the HEP.

Items 5 to 9 require the HEP to furnish its address and contact details.

Item 10 asks for the names and addresses of departments of the HEP which are located outside of its main campus. Item 11 asks for the names and addresses of branch campuses, where applicable.

Items 12 and 13 require the HEP to list all the departments in the HEP, including its branch campuses and the number of programmes offered by them as well as details of these programmes.

Items 14, 15 and 17 ask for the details of the academic staff, students and administrative and support staff. Item 16 asks specifically about student attrition rate.

Item 18 requires the HEP to provide the organizational chart of the HEP.

Item 19 asks for the name and details of the contact person in the HEP.

PART A: GENERAL INFORMATION ON THE HIGHER EDUCATION PROVIDER

1. Name of the higher education provider (HEP):
2. Date of establishment:
3. Reference No. of the Approval for Establishment:
4. Name, title and designation of the chief executive officer:
5. Address:
 - Address:
 - Correspondence (if different from above):
6. Tel.:
7. Fax:
8. Email:
9. Website:

10. Names and addresses of Faculties/Schools/Departments/Centres (if located outside the main campus):
 - i.
 - ii.
 - iii.

11. Names and addresses of branch campuses (if applicable):
 - i.
 - ii.
 - iii.

12. List of Faculties/Schools/Departments/Centres in the HEP (and its branch campuses) and number of programmes offered:

No.	Name of Faculties/Schools/Departments/ Centres	Number of programmes offered

13. Details of all programmes currently conducted by the HEP (and its branch campuses):

No.	Name of Programme	Level	Awarding Body	Approval Date	Accreditation Date	Recognition (by PSD/JPA) Date	Types of Programme (Collaboration/ Home-grown)	No. of Students

PSD: Public Services Department, JPA: Jabatan Perkhidmatan Awam

14. Total number of academic staff:

Status	Academic Qualification	Number of staff		
		Local	Foreign	Total
Full-time	PhD			
	Masters			
	Bachelors			
	Diploma			
	Professional			
	Others			
	Sub-total			
Part-time	PhD			
	Masters			
	Bachelors			
	Diploma			
	Professional			
	Others			
	Sub-total			
	Total			

15. Total number of students:

	Number of students		Total
	Local	Foreign	
Male			
Female			
Total			

16. Student attrition rate:

	Year	Number of students leaving the institution	Reasons for leaving
Current year			
Past 1 year			
Past 2 years			
Past 3 years			

17. Total number of administrative and support staff:

No.	Designation	Number of staff

18. Provide the organisational chart of the HEP:

19. Contact person:

- Name (Title):
- Designation:
- Tel.:
- Fax.:
- Email:

Part B: PROGRAMME DESCRIPTION

Part B of the MQA-01 and MQA-02 requires the higher education provider (HEP) to furnish information on the programme to be accredited. The information required includes the name of the programme, its level, the credit value, the duration of study, entry requirement, mode of delivery and the awarding body.

There are 18 items listed in this section. Many of these items may require the HEP to refer to the Malaysian Qualifications Framework, programme standards, guidelines to good practices, and rules, regulations and policies of the Ministry of Higher Education.

Item 1 asks for the name of the qualification as in the scroll to be awarded. For example, Bachelor of Science (Software Engineering).

Item 2 asks for the level of the qualification as per the Malaysian Qualifications Framework. For example, level 6 – Bachelor degree.

Item 3 asks for the credit value of the programme. For example, 126 credits.

Item 4 asks for the type of award. For example, single major, double major, generic degree/award.

Item 5 asks for the field of study. For example, social sciences, law, pharmacy.

Item 6 asks for the medium of instruction of the programme. For example, English, Bahasa Malaysia.

Items 7 to 9 ask for the mode and method of programme. For example, full-time, part-time, distance learning, face-to-face, online, lecture, tutorial, lab work, field work, studio, practical training, etc.

Item 10 asks for the duration of the study of the programme.

Item 11 asks for the minimum entry requirement of the programme.

Items 12, 13 and 14 ask for the estimated date of the first intake, the projected intake and enrolment and the estimated date of the graduation of the first cohort.

Item 15 asks for the expected areas of the graduate's employment, both nationally and internationally.

Item 16 asks for who awards the qualification and for relevant supporting document.

Item 17 asks for a sample of the scroll to be awarded.

Item 18 asks for details where applicable of a similar programme that has been approved to be conducted in other sites of the HEP.

Item 19 asks for the location where the programme is to be conducted, in the case of Provisional Accreditation, or where the programme is currently being conducted, in the case of Full Accreditation.

PART B: PROGRAMME DESCRIPTION

1. Name of the award (as in the scroll to be awarded):
2. MQF level:
3. Credit value:
4. Type of award (e.g., single major, double major, etc.):
5. Field of study:
6. Language of instruction:
7. Mode of study (e.g., full-time/part-time, etc.):
8. Mode of delivery (lecture/tutorial/lab/field work/studio, etc.):
9. Method of delivery (Conventional/Distance learning, etc.):
10. Duration of study:

	Full-time		Part-time	
	Long Semester	Short Semester	Long Semester	Short Semester
No. of Weeks				
No. of Semesters				
No. of Years				

11. Entry requirements:
12. Estimated date of first intake: month / year
13. Projected intake and enrolment:

	Intake	Enrolment
Year 1		
Year 2		
Year 3		
Year 4		
Year 5		
Total		

14. Estimated date of pioneer graduation: month/year
15. Expected areas of graduate employment:
16. Awarding body:
 - Own
 - Others

(For awards by other HEP or Examination bodies, please attach the relevant documents)

- i. Proof of collaboration between Higher Education Provider and the partner HEP such as copy of the Validation Report and the Memorandum of Agreement (MoA), or Memorandum of Understanding (MoU)
- ii. Approval letter from Higher Education Department (*Jabatan Pendidikan Tinggi*, JPT) for programmes in collaboration with Malaysian public universities
- iii. Proof of approval and supporting letter to conduct course of study from certification bodies/awarding bodies/examination bodies
- iv. A copy of the programme specification for the programme as conducted by the partner HEP
- v. Name of the Quality Partners of the HEP, where applicable
- vi. For programmes subjected to a recognition body or relevant authorities, please attach approval letters
- vii. For programmes which require clinical training, proof of approval, MoA or MoU from the relevant authority
- viii. Any other document where necessary

17. A sample of scroll to be awarded should be attached.

18. Indicate the following details of this programme that have been approved and conducted in other sites (if applicable):

	Name and location of the site	Approval status	Provisional Accreditation Status	Accreditation Status
1				
2				
3				

19. Location of the programme for this application:

PART C: PROGRAMME STANDARDS

Programme accreditation covers standards in nine areas of evaluation. There are two levels of these standards, i.e., benchmarked standards and enhanced standards. The former is expressed by a “must” which means that the Higher Education Provider (HEP) must comply, whilst the latter is expressed by a “should” which means that the HEP is encouraged to fulfil them.

Part C of the MQA-01 and MQA-02 requires the HEP to furnish information on all the standards in the nine areas of evaluation for quality assurance on the programme to be accredited. The following pages provide a series of questions and statements that guide the HEP in furnishing such information.

Area 1 is on vision, mission, educational goals and learning outcomes. There are seven questions and statements on the seven benchmarked standards and three on the four enhanced standards.

Area 2 on curriculum design and delivery has 18 questions and statements on the 19 benchmarked standards and 10 questions and statements on the 11 enhanced standards.

Area 3 on assessment of students has 19 questions and statements on the 11 benchmarked standards and six questions and statements on the five enhanced standards.

Area 4 on student selection and support services has 23 questions and statements on the 21 benchmarked standards and 12 questions and statements on the 13 enhanced standards.

Area 5 on academic staff has 22 questions and statements on the 11 benchmarked standards and five questions and statements on the four enhanced standards.

Area 6 on educational resources has 23 questions and statements on the 12 benchmarked standards and nine questions and statements on the 10 enhanced standards.

Area 7 on programme monitoring and review has nine questions and statements on the five benchmarked standards and five questions and statements on the four enhanced standards.

Area 8 on leadership, governance and administration has 19 questions and statements on the 11 benchmarked standards and six questions and statements on the six enhanced standards.

Area 9 is on continual quality improvement. There are five questions and statements on the three benchmarked standards and two questions and statements on the two enhanced standards.

INFORMATION ON AREA 1: VISION, MISSION, EDUCATIONAL GOALS AND LEARNING OUTCOMES

1.1 Statement of Programme Aims, Objectives and Learning Outcomes

Information on Benchmarked Standards

1.1.1 State the aims, objectives and the learning outcomes of the programme. How are these aims, objectives and learning outcomes made known to the department's internal and external stakeholders? Who were consulted in developing the aims, objectives and learning outcomes of the programme?

1.1.2 What is the vision and mission of the HEP? Show how the aims, objectives and learning outcomes of the programme are in line with, and supportive of, the vision and mission of the HEP.

1.1.3 Provide the justification for the proposed programme. How does this programme fulfil the market needs and contribute to the social and national development? How does this programme relate to other programmes offered by the department?

Information on Enhanced Standards

1.1.4 How does the programme aims, objectives and learning outcomes incorporate issues of leadership, social responsibility, scholarship, community involvement, ethical values and professionalism?

1.1.5 Indicate those who are consulted -- and the degree of their involvement -- in both the formulation and periodic review of programme aims, objectives and learning outcomes.

1.2 Learning Outcomes

Information on Benchmarked Standards

1.2.1 State the programme learning outcomes according to the level of study based on the following eight MQF learning outcomes domains:

- i. Knowledge
- ii. Practical skills
- iii. Social skills and responsibilities
- iv. Ethics, professionalism and humanities
- v. Communication, leadership and team skills
- vi. Scientific methods, critical thinking and problem solving skills
- vii. Lifelong learning and information management
- viii. Entrepreneurship and managerial skills

- 1.2.2 Map the learning outcomes of the individual courses to the eight MQF domains. (Matrix of Programme and Module Learning Outcomes)
- 1.2.3 Show how the achievement of the learning outcomes are measured.
- 1.2.4 Describe how the learning outcomes relate to the existing and emergent needs of the profession and the discipline.

Information on Enhanced Standards

- 1.2.5 Explain how the competencies are related to the needs of the students' future workplace.

INFORMATION ON AREA 2: CURRICULUM DESIGN AND DELIVERY

2.1 Academic Autonomy

Information on Benchmarked Standards

- 2.1.1 Describe the provisions and practices that ensure the autonomy of the department in curriculum design and delivery, and in allocation of resources. Provide supporting documents where appropriate.
- 2.1.2 Show the relationship between the departmental board and the senate.
- 2.1.3 How does the department ensure that the academic staff have sufficient autonomy in areas of his expertise?

Information on Enhanced Standards

- 2.1.4 State the departmental policies and practices to address conflict of interest, for example, staff involvement in private practice, part-time employment and consultancy services.
- 2.1.5 What are the HEP's plans to expand the autonomy of the academic staff? What is the department's role and how does it support this?

2.2 Programme Design and Teaching-Learning Methods

Information on Benchmarked Standards

- 2.2.1 Describe the processes, procedures, and mechanisms for curriculum development. How are the academic and administrative staffs involved in this process?
- 2.2.2 What are the various teaching and learning methods used in curriculum delivery to achieve the programme learning outcomes? Describe them.
- 2.2.3 Show evidence that the department have considered market and societal demand for the programme as well as sufficient resources to run it.
- 2.2.4 Explain how the programme promotes critical enquiry, develop

problem solving, decision making, and analytical thinking skills, as well as encourages students to take active responsibility for their learning, and prepares them for lifelong learning.

- 2.2.5 Describe the diverse learning methods and sources, within and outside the classroom, where students acquire knowledge, mastery of skills, and develop attitudes and behaviour in preparation for their learning, individual growth, future work and responsible citizenry (e.g., co-curriculum).

Information on Enhanced Standards

- 2.2.6 Show how the programme encourages a multi-disciplinary approach and co-curricular activities in enhancing and enriching the personal development of the learner.
- 2.2.7 How are external sources engaged in the needs analysis for this programme? How are their commentaries utilized to improve the programme?
- 2.2.8 What are the co-curricular activities that enrich student learning experience, and foster personal development and responsibility?

2.3 Curriculum Content and Structure

The department is required to complete Table 1 and 2 to highlight the core subject matter essential for the understanding of the concepts, principles and methods that support the programme outcomes, as well as the requirements of the discipline for an award taking into account the appropriate discipline standards and international best practices for the field.

Information on Benchmarked Standards

- 2.3.1 Classification of subjects (Provide information where applicable in Table 1):

Table 2.1: Components of the programme and its value

	Subject Classification	Credit Value	Percentage
1.	Compulsory modules		
2.	Core/Major/Concentration: <ul style="list-style-type: none"> • Courses/modules • Projects/ thesis /dissertation 		
3.	Optional / elective courses/modules		
4.	Minor courses/modules		
5.	Industrial training		
6.	Practicum		
7.	Others (specify)		
	Total Credit Value		100%

- 2.3.2 List the subjects offered in the programme. Include their classification. Please arrange the information by year / semester as in Table 2.2.

Table 2.2. List of course/module offered in the programme

	Semester / Year Offered	Name and Code of Course/Module	Classification (Major/Minor/ Elective/Audit)	Credit Value	Name(s) of Lecturer
1					
2					
3					
4					
5					

- 2.3.3 Basic information of each course/module (Provide information where applicable in Table 3)

Table 2.3: Summary of information on each course/module

1.	Name of Course/Module					
2.	Course Code					
3.	Name(s) of academic staff					
4.	Rationale for the inclusion of the course/module in the programme					
5.	Semester and Year offered					
6.	Total Student Learning Time (SLT)	Face to Face				Total Guided and Independent Learning
	L = Lecture T = Tutorial P = Practical O = Others	L	T	P	O	
7.	Credit Value					
8.	Prerequisite (if any)					
9.	Learning outcomes					
10.	Transferable Skills: Skills and how they are developed and assessed, Project and practical experience and Internship					
11.	Teaching-learning and assessment strategy					
12.	Synopsis					
13.	Mode of Delivery Lecture, Tutorial, Workshop, Seminar, etc.					
14.	Assessment Methods and Types					
15.	Mapping of the course/module to the Programme Aims					
16.	Mapping of the course/module to the Programme Learning Outcomes					
17.	Content outline of the course/module and the SLT per topic					
18.	<ul style="list-style-type: none"> • Main references supporting the course • Additional references supporting the course 					
19.	Other additional information					

- 2.3.4 What are the department's plans to periodically review the programme in order to keep abreast with scientific, technological and knowledge development within the discipline, and with the needs of society?

Information on Enhanced Standards

2.3.5 Show evidence that the department has the mechanism in place to access the latest developments in the field of study.

2.4 Management of the Programme

Information on Benchmarked Standards

2.4.1 Provide a sample of the Student Study Guide, Student Handbook and Student Project Handbook, where applicable.

2.4.2 State the manner in which the academic management of the programme is carried out, including those pertaining to curriculum development, programme management and student feedback.

2.4.3 State the designation, responsibility and authority of the main academic officer and committee responsible for the programme. Indicate whether they have adequate resources? Show evidence.

2.4.4 Describe the review and evaluation processes for the programme as well as the utilization of the results.

2.4.5 Show how the learning environment nurtures scholarly and creative achievements.

Information on Enhanced Standards

2.4.6 Describe the department's initiative to encourage innovations to teaching-learning processes.

2.4.7 Show how the department engages external expertise in the review and evaluation of the programme.

2.5 Linkages with External Stakeholders

Information on Benchmarked Standards

2.5.1 Describe the links that exist between the department and its external stakeholders for the purpose of curriculum improvement.

Information on Enhanced Standards

2.5.2 State the existing mechanism to obtain and utilize feedback from employers for the improvement of the curriculum, training and workplace exposure.

2.5.3 Indicate the opportunities available to students to have linkages with external stakeholders.

INFORMATION ON AREA 3: ASSESSMENT OF STUDENTS

3.1 Relationship Between Assessment and Learning

Information on Benchmarked Standards

- 3.1.1 Explain how assessment principles, methods and practices are aligned to the learning outcomes and programme content.
- 3.1.2 State how assessment of students is consistent with the levels defined in the MQF and its eight domains of learning outcomes (e.g., critical thinking, problem solving, integrated learning, lifelong learning, etc.)
The HEP may provide the information in a matrix form similar to what is required for 1.2.2 as well as Table 3 in 2.3.3.
- 3.1.3 Indicate how the department monitors student assessment to reduce curriculum overload and encourage integrated learning.
- 3.1.4 Describe how the department ensures that appropriate attitudes are inculcated and assessed (e.g., respect for socio-cultural diversity, sensitivity to rights of others, cost effectiveness, teamwork, lifelong learning).

Information on Enhanced Standards

- 3.1.5 Describe how the link between assessment and learning outcomes are periodically reviewed to ensure its effectiveness.

3.2 Assessment Methods

Information on Benchmarked Standards

- 3.2.1 Describe the student assessment methods in terms of its duration, diversity, weightage, criteria and coverage, and how these are documented and communicated to the students.
- 3.2.2 Describe how the assessment methods, including that of practical training, clinical training, studio projects, demonstrations and the like, can measure the students' achievement of the learning outcomes.
- 3.2.3 Indicate how assessment methodologies are reviewed periodically to ensure currency with developments in best practices.
- 3.2.4 Explain how the HEP monitors the reliability and validity of student assessment over time and across sites.
- 3.2.5 Describe how the review of the assessment methods in the programme is conducted (e.g. through a permanent review committee on assessment, or in consultation with external assessors and examiners, students, alumni, industry).

Information on Enhanced Standards

- 3.2.6 Describe how the internal assessments are comparable to that of external best practices (e.g., through evaluation by external examiners, through comparisons with student assessments held in reputable institutions).
- 3.2.7 Describe how external expertise, locally and internationally, are accessed in the review of the assessment system.

3.3 Management of Student Assessment

Information on Benchmarked Standards

- 3.3.1 Describe the authority responsible for assessment policy and their terms of reference.
- 3.3.2 Explain the mechanisms used to ensure the credibility, reliability and fairness of the assessment system (for example, the use of external expertise, consultants, internal and external vetting, continuous monitoring) in accordance with established procedures and regulations.
- 3.3.3 Indicate the committees and processes for:
 - i. verification and moderation of summative assessments; and
 - ii. benchmarking academic standards of assessment.
- 3.3.4 Describe how confidentiality and security are ensured in student assessment processes and maintenance of academic records.
- 3.3.5 Explain how assessment performance and results are made available to students.
- 3.3.6 Explain how the department provides feedback to the students on their academic performance to ensure that they have sufficient time to undertake remedial measures.
- 3.3.7 Describe how records are made available to students for purposes of feedback on performance, review and corrective measures.
- 3.3.8 Specify whether students have the right to appeal. Provide information on the appeal policy and processes. How are appeals dealt with?
- 3.3.9 Explain the mechanism for reviewing and implementing new methods of assessment.
- 3.3.10 Append a copy of the Regulations of Examination.

Information on Enhanced Standards

- 3.3.11 How are student representatives, academic staff and stakeholders involved in improving the system of student assessment?
- 3.3.12 How autonomous is the department and its academic staff in the management of student assessment?

- 3.3.13 Explain the nature of the independent external scrutiny of student assessment to improve the management of the assessment system.

INFORMATION ON AREA 4: STUDENT SELECTION AND SUPPORT SERVICES

4.1 Admission and Selection

Information on Benchmarked Standards

- 4.1.1 Indicate the persons / agents is responsible for student selection. State the academic criteria and the mechanisms for admission to the programme and any other additional requirements. Show evidence that the admission policy and mechanism are free from discrimination and bias.
- 4.1.2 Provide evidence that prove the students selected fulfil the admission policies.
- 4.1.3 Describe the admission mechanisms and criteria for students with other equivalent qualifications (where applicable).
- 4.1.4 Show how the criteria and mechanisms are published and disseminated.
- 4.1.5 Describe the appeal mechanism.
- 4.1.6 Describe the characteristics of students admitted. Provide a copy of any technical standards that have been specified for the admission of students with special needs.
- 4.1.7 Indicate the forecast student intake for the next five years. (Refer also to item 13 of Part B). Describe how the size of student intake is determined in relation to the capacity of the department and explain the mechanisms that exist for adjustments, taking into account the admission of visiting, exchange and transfer students.
- 4.1.8 Describe how the selection methods comply with the HEP's social responsibilities, human resource requirements and needs for further studies and lifelong learning.
- 4.1.9 If a selection interview is utilized, describe it.
- 4.1.10 State what special programmes are provided for those who are selected but need additional remedial assistance.
- 4.1.11 Describe how the department continuously monitors and periodically reviews student selection processes.

Information on Enhanced Standards

- 4.1.12 Indicate how does the department engages the relevant stakeholders in the review of its admission policy and processes.

- 4.1.13 Show the relationship between student selection, the programme, and the learning outcomes.

4.2 Articulation Regulation, Credit Transfer and Credit Exemption

Information on Benchmarked Standards

- 4.2.1 Describe the policies, regulations and processes of credit transfer, credit exemption and articulation practices, and how this information is disseminated.

Information on Enhanced Standards

- 4.2.2 Describe how the department keeps abreast of latest developments with regards to articulation, credit transfer and cross-border provisions.

4.3 Transfer of Student

Information on Benchmarked Standards

- 4.3.1 Explain the policy, criteria and mechanisms to enable qualified students to transfer to another programme. Indicate if there are appropriate mechanisms such as a bridging course for students who need it.
- 4.3.2 Indicate how students accepted for transfer demonstrate comparable achievements in their previous institution of study. Provide the relevant data to support this.

Information on Enhanced Standards

- 4.3.3 Describe how the department facilitates student mobility, exchanges and transfers, nationally and internationally.

4.4 Student Support Services and Co-curricular Activities

(Many of the components of the student support services below apply at the institutional level. Students at the department level have access to these central services and facilities.)

Information on Benchmarked Standards

- 4.4.1 What are the support services made available to students? Show evidence to prove that those who provide these services are qualified. What other additional support programmes provided by other organizations are accessible to students?
- 4.4.2 Describe the accessibility, confidentiality and effectiveness of the academic, non-academic and career counselling services available to

students.

- 4.4.3 What mechanism is available for students to complain and to appeal on matters relating to student support services?
- 4.4.4 How are the adequacy, effectiveness and safety of these services evaluated and ensured?
- 4.4.5 Describe the roles and responsibilities of those responsible for student co-curricular activities.
- 4.4.6 Describe the management of the activities and maintenance of student records.
- 4.4.7 How are students orientated into the programme?

Information on Enhanced Standards

- 4.4.8 Describe the relationship between the student support services and co-curricular activities and the learning outcomes of the programme.
- 4.4.9 How are the effectiveness of the counselling services measured, and the progress of those who seek its services monitored? What plans are there to improve the services, including that of enhancing the skills and professionalism of the counsellors?
- 4.4.10 Describe the mechanisms that exist to identify students who are in need of spiritual, psychological, social and academic support.

4.5 Student Representation and Participation

Information on Benchmarked Standards

- 4.5.1 How are student representation organized at the institutional and departmental levels?
- 4.5.2 How are students encouraged to actively participate in curriculum development, teaching-learning processes as well as in other areas that affect their welfare?

Information on Enhanced Standards

- 4.5.3 How are student activities and student organizations -- through which they acquire skills and experiences to build character, leadership and responsibility -- supported by the department?
- 4.5.4 What is the policy regarding student publication? What facilities are available to encourage student involvement in publication?

4.6 Alumni

Information on Benchmarked Standards

Not applicable.

Information on Enhanced Standards

- 4.6.1 How does the department network with its alumni?
- 4.6.2 How does the department encourage the alumni to assist the students in preparing their professional future?
- 4.6.3 Describe the role of the alumni in curriculum development, the achievement of the learning outcomes and the future direction of the programme.

INFORMATION ON AREA 5: ACADEMIC STAFF

5.1 Recruitment and Management

Information on Benchmarked Standards

- 5.1.1 State the policy and procedures for the recruitment of academic staff.
- 5.1.2 State the terms and conditions of service.
- 5.1.3 State the minimum qualification of the academic staff required for the delivery of this programme.
- 5.1.4 State other requirements which would be the basis for the decision in the appointment of an academic staff for this programme.
- 5.1.5 Provide data to show that the staffing profile matches the range and balance of teaching skills, specializations and qualifications required to deliver the programme.

- **Current Academic Staff Listing and Responsibilities**

- 5.1.6 Provide a summary information on every academic staff involved in conducting the programme:

Table 2.4. Summary information on academic staff involved in the programme

	Name and designation of academic staff	Appointment status (full-time, part-time, contract, etc.)	Nationality	Modules taught in this programme	Modules taught in other programmes	Academic Qualifications		Past Work Experience		
						Qualifications, Field of Specialization, Year of Award	Name of awarding institution and Country	Positions held	Employer	Years of Service (Start and End)
1										
2										
3										
4										
5										

- 5.1.7 For each academic staff teaching this programme, provide his/her Curriculum Vitae including the following information:
- i. Full Name
 - ii. Academic Qualifications
 - iii. Current Professional Membership
 - iv. Current Teaching and Administrative Responsibilities
 - v. Previous Employment
 - vi. Conferences and Training
 - vii. Research and Publications
 - viii. Consultancy
 - ix. Community Service
 - x. Other Relevant Information
- 5.1.8 State the mechanisms and procedures for monitoring and appraising academic staff performance, for ensuring equitable distribution of duties and responsibilities among the academic staff, and for determining the distribution of rewards.
- 5.1.9 Describe the processes and procedures in managing the discipline of the academic staff.
- 5.1.10 Describe the policies, criteria and processes in the appointment, and promotion to, academic positions, such as associate professorship and professorship.

- **Future Academic Staff Requirements**

- 5.1.11 Provide the following information:
- Staff—student ratio for this programme
 - Academic staff needs analysis
(including Timetabling and Scheduling of Staff)
 - Student number projections
 - New academic staff acquisition plan
- 5.1.12 Describe how the HEP improves its recruitment of staff to meet its goals and show how this has contributed to the overall quality of the programme.

Information on Enhanced Standards

- 5.1.13 Describe how the HEP balances its recruitment between all levels of academic and non-academic staff and between local and international academic staff with multi-disciplinary backgrounds.
- 5.1.14 Describe the nature and extent of the national and international

linkages to enhance teaching and learning of the programme.

5.2 Service and Development

Information on Benchmarked Standards

- 5.2.1 Provide information on the departmental and institutional policy on service, development and appraisal of the academic staff.
- 5.2.2 Indicate the mechanisms that are in place for academic staff training in teaching and learning.
- 5.2.3 Describe the mechanism used to identify the manpower needs of the programme and training of the staff.
- 5.2.4 Do the expertise of the current academic staff match with what is needed to deliver the programme? Provide information of the compatibility between the teacher and the module in a matrix form.
- 5.2.5 Provide information on the research focus areas of the academic staff and show how they relate to, or support, teaching-learning of the programme.
- 5.2.6 State the mechanisms and procedures for professional development and career advancement of the academic staff (e.g., study leave, sabbatical, advanced training, specialized courses, re-tooling, etc.)
- 5.2.7 Describe the policy on consultancy and private practice.
- 5.2.8 Describe the mentoring system for new academic staff.
- 5.2.9 Describe the engagement of the academic staff in community service activities. Evaluate the extent to which the activities are taken into consideration in appointment and promotion exercises.
- 5.2.10 Give evidence of national and international recognition of academic staff members (e.g., journal editorship, service as peer reviewers, consultancy, and expert group and committee membership).

Information on Enhanced Standards

- 5.2.11 Describe how the academic staff are given the opportunity to participate in professional, academic and other relevant activities at national and international levels. How is this participation appraised and its results utilized for purposes of enhancing the student experience?
- 5.2.12 Provide information on the involvement of the academic staff in research activities.
- 5.2.13 Describe the provisions for allowing advanced enhancement for academic staff.

INFORMATION ON AREA 6: EDUCATIONAL RESOURCES

6.1 Physical Facilities

Information on Benchmarked Standards

6.1.1 List all the physical facilities and indicate those specifically related to the programme.

Table 2.5 List of physical facilities

	Facilities	Current		Projection of Addition			
		No	Capacity	Year 1		Year 2	
				No	Capacity	No	Capacity
1.	Lecture Halls						
2	Tutorial Rooms						
3.	Discussion Rooms						
4	Laboratories and Workshops						
	- IT Lab						
	- Science Lab						
	-Engineering workshop						
	-Processing workshop						
	Manufacturing workshop						
	Studio						
	Others						
5	Library and Information Centers						
	Learning Support Centers						
6.	Learning Resources Support						
7.	Student Social Spaces						
8.	Other Facilities						

6.1.2 Describe the adequacy of the physical facilities and equipments (such as workshop, studio, laboratories) as well as human resources (for example, laboratory professionals, technicians).

6.1.3 Identify current unmet needs and needs that may arise within the next several years.

6.1.4 Provide information on the clinical and practical facilities for programmes which require such facilities. State the location.

6.1.5 Demonstrate arrangement procedures that meet the programmes' specific requirements in practical and industrial training.

- **Library and Information Centre**

- 6.1.6 State the database system used in the library and information centre.
- 6.1.7 State the number of staff in the library and information centre and their qualifications.
- 6.1.8 Describe resource sharing and access mechanisms that are available to extend the library’s capabilities. Comment on the extent of use of these facilities by academic staff and students. Comment on the adequacy of the library to support the programme.
- 6.1.9 List the reference materials related to the programme:

Table 2.6. Reference materials supporting the programme

Resources supporting the programme (e.g., books, online resources, etc)		Number of Journals		State other facilities such as CD ROM, Video and electronic reference material
Number of Title	Number of Collection	Number of Title	Number of Collection	

- 6.1.10 Describe the mechanism to obtain feedback from students and staff on the library policy, services and procedures.

- **Information and Communication Technology (ICT)**

- 6.1.11 State the policy on the use of ICT in the department. Describe the ICT infrastructure that supports the department and the programme.
- 6.1.12 List the ICT staff and their qualifications that support the implementation of the ICT policy at the departmental level.
- 6.1.13 State the specific ICT requirement of this programme and how they are provided.
- 6.1.14 Indicate what plans exist to improve the educational facilities -- physical, library and ICT -- in line with the developments in teaching practice.

Information on Enhanced Standards

- 6.1.15 Explain how the HEP periodically reviews the adequacy, currency and quality of its educational resources and the role of the department in these processes.
- 6.1.16 Describe how students are provided with opportunities to learn the various and most current methods of accessing information.
- 6.1.17 How are these facilities user friendly to those with special needs?

6.2 Research and Development

(Please note that the standards on Research and Development are largely directed to universities offering degree level programmes and above.)

Information on Benchmarked Standards

- 6.2.1 Describe the facilities and the budget allocation available to support research.
- 6.2.2 Describe the major research programmes of the department and the academic staff involved in them.
- 6.2.3 Describe how the HEP encourages interaction between research and learning. Show the link between the HEP's policy on research and development and the teaching-learning activities in the department.
- 6.2.4 State any initiatives taken by the department to engage students in research.

Information on Enhanced Standards

- 6.2.5 Show the link between research, development and commercialization.
- 6.2.6 Describe the processes whereby the department reviews its research resources and facilities and the steps taken to enhance its research capabilities.

6.3 Educational Expertise

Information on Benchmarked Standards

- 6.3.1 Describe the policy and practice on the use of appropriate educational expertise in the planning of educational programmes and in the development of new teaching and assessment methods. (Refer to the preamble to Area 6: Educational Resources)

Information on Enhanced Standards

- 6.3.2 Describe the access to educational expertise, both internal and external, and its utilization for staff development and research.

6.4 Educational Exchanges

Information on Benchmarked Standards

- 6.4.1 Describe the department's practice in collaborating and cooperating with other providers, nationally and internationally, in compliance with the HEP's policy.
- 6.4.2 Indicate how these are disseminated to students and faculty.

Information on Enhanced Standards

- 6.4.3 Describe the future plans to strengthen national and international collaborative activities.
- 6.4.4 Describe the facilities and financial allocation to support these exchanges.

6.5 Financial Allocation

Information on Benchmarked Standards

- 6.5.1 Indicate the responsibilities and line of authority in terms of budgeting and resource allocation in the HEP.
- 6.5.2 Demonstrate how the financial allocation dedicated to the programme -- and its utilisation -- is sufficient for it to achieve its purpose.

Information on Enhanced Standards

- 6.5.3 Describe how those responsible for the programme enjoy sufficient autonomy to allocate and utilise resources to achieve the programme objective.

INFORMATION ON AREA 7: PROGRAMME MONITORING AND REVIEW

7.1 Mechanisms for Programme Monitoring and Review

Information on Benchmarked Standards

- 7.1.1 Explain how the department evaluates this programme.
- 7.1.2 How are the student performance and progression analysed in relation to the objective of the programme?
- 7.1.3 Describe the processes, procedures and mechanisms for monitoring and reviewing the curriculum.
- 7.1.4 Describe the relationship between the process of curriculum monitoring and review and the achievement of programme learning outcomes.
- 7.1.5 Describe how the HEP utilizes the feedback from programme review in programme development.
- 7.1.6 Describe the structure and workings of the programme review committee.
- 7.1.7 Describe the responsibilities of the parties involved in collaborative arrangements.

Information on Enhanced Standards

- 7.1.8 How does the self-review process assist in identifying weaknesses and in improving the programme?
- 7.1.9 Describe the mechanism utilised by the HEP to monitor the performance of its graduates. How does this impact the curriculum review process?

7.2 Involvement of Stakeholders

Information on Benchmarked Standards

- 7.2.1 Who are the stakeholders who are consulted in programme monitoring and review? Describe the involvement of these stakeholders.
- 7.2.2 Show how the views of these stakeholders are taken into consideration.

Information on Enhanced Standards

- 7.2.3 Explain how the department informs the stakeholders of the result of the programme assessment and how their views on the report are taken into consideration in future programme development.
- 7.2.4 Show how feedbacks obtained from stakeholders are incorporated into a programme review exercise.
- 7.2.5 How are professional bodies and associations engaged in programme monitoring and review?

INFORMATION ON AREA 8: LEADERSHIP, GOVERNANCE AND ADMINISTRATION

8.1 Governance

Information on Benchmarked Standards

- 8.1.1 Show how the policies and practices of the department are consistent with the larger purpose of the HEP.
- 8.1.2 Describe the governance structure and functions, and the main decision-making components of the department, as well as the relationships between them. How are these relationships made known to all parties involved? What effect do these relationships have on the programme?
- 8.1.3 Indicate the type and frequency of meetings held during the past academic year.
- 8.1.4 Show evidence that the governing body of the department is an effective policy-making body with adequate autonomy.

- 8.1.5 Describe the extent of autonomy and responsibilities agreed upon by the HEP and its campuses or partner institutions to assure functional integration and educational quality.

Information on Enhanced Standards

- 8.1.6 Describe the committee system in the department and how it utilises consultation and feedback, and considers market needs analysis and employability projections in the programme development and review.
- 8.1.7 Describe the representation and role of the academic staff, students and other stakeholders in the various governance structures and committees of the department.

8.2 Academic Leadership of the Programme

Information on Benchmarked Standards

- 8.2.1 Explain the selection process and job description of the academic leader of the programme. State his name, qualification and experience.
- 8.2.2 Describe the management structure of the academic programme by showing the responsibilities of each individual involved in the structure.
- 8.2.3 State the procedures and criteria for selection, appointment and evaluation of academic leadership in the programme.
- 8.2.4 Describe the relationship between the programme and the HEP leadership in matters such as recruitment and training, student admission, and allocation of resources and decision-making processes.

Information on Enhanced Standards

- 8.2.5 Describe how the performance of the programme leader is periodically evaluated.
- 8.2.6 Show how the programme leader creates a conducive environment for generating innovation and creativity in the department.

8.3 Administrative and Management Staff

Information on Benchmarked Standards

- 8.3.1 Describe the structure of the administrative staff which supports the programme.
- 8.3.2 Explain how the number of the administrative staff is determined in accordance with the needs of the programme and other activities.

Describe the recruitment processes and procedures. State the terms and conditions of service.

- 8.3.3 State the numbers required and available, job category and minimum qualification of non-academic staff for this programme.

Table 2.7. Non-academic staff for the programme

	Job Category	Numbers required	Current numbers	Minimum qualification
1				
2				
3				

- 8.3.4 Provide details of each staff assisting in this programme including their name, academic qualifications, current responsibilities and other relevant information.
- 8.3.5 State the mechanisms and procedures for monitoring and appraising staff performance for ensuring equitable distribution of duties and responsibilities among the staff and for determining the distribution of rewards.
- 8.3.6 Describe the processes and procedures in managing the discipline of the staff.
- 8.3.7 State the mechanisms for training and career advancement that are available in the department.
- 8.3.8 Describe how the department conducts regular performance review of the programme's administrative and management staff.

Information on Enhanced Standards

- 8.3.9 Describe the training scheme for the administrative and management staff and show how this scheme fulfils the current and future needs of the programme.

8.4 Academic Records

Information on Benchmarked Standards

- 8.4.1 State the policies on the secure retention and disposal of student and academic staff records at the departmental level and show its consistency with that of the HEP.
- 8.4.2 Describe how the department ensures the rights of individual privacy and safeguards the confidentiality of records.

Information on Enhanced Standards

- 8.4.3 Describe the department's review policies on security of records and its plans for improvement.

INFORMATION ON AREA 9: CONTINUAL QUALITY IMPROVEMENT

9.1 Quality Improvement

Information on Benchmarked Standards

- 9.1.1 Show how the department supports and complements the HEP's policies, procedures and mechanisms for regular reviewing and updating of its structures, functions, strategies and core activities to ensure continuous quality improvement. Identify those responsible for continual quality improvement within the department.
- 9.1.2 Describe the contribution and participation of stakeholders towards improvement of the programme.
- 9.1.3 What are the policies, strategies, plans, procedures and mechanisms of the department for reviewing and updating its mission, structures and activities?
- 9.1.4 Explain the frequency of reviews undertaken and the resulting improvements.
- 9.1.5 Describe the recent activities undertaken and those projected for the future in order to ensure that the department remains responsive to its changing environment.

Information on Enhanced Standards

- 9.1.6 Describe the role and the effectiveness of the person or unit responsible for internal quality assurance of the department. What is his/its status in the department?
- 9.1.7 What steps are being taken by the department to build a culture of quality?

PART D: PROGRAMME SELF-REVIEW REPORT

In its application for Full Accreditation of a programme, the HEP through the department concerned needs to prepare a Programme Self-Review Report (PSRR). The Report is a narrative of the findings of the internal quality audit conducted by the department. In doing the PSRR the department is guided by Section 4.1, Programme Accreditation. The department may also want to refer to Section 6, Guidelines for Preparing the Programme Accreditation Report.

In summary, the Self-Review Report should include the following:

- Strengths of the programme in meeting its goals;
- Areas of concern that need to be addressed;
- Strategies for maintaining and enhancing the strengths of the programme;
- Steps that have been taken to address the problem areas; and
- Conclusions and recommendations for improvement.

Section 4

Programme Accreditation

INTRODUCTION

There are two levels of programme accreditation: Provisional and Full Accreditation.

For Provisional Accreditation, the Higher Education Provider (HEP) must complete and submit Programme Information (MQA-01), as outlined in Section 3.

To achieve Full Accreditation, each programme must be subjected to a programme self-review (internal) and programme evaluation (external). The HEP must complete and submit the MQA-02, which are the Programme Information and the Self-Review Report as outlined in Section 3.

4.1 The Programme Self-Review

To apply for Full Accreditation, the HEP -- through the relevant department -- must conduct programme self-review, which is also known as an internal quality audit, for each individual programme or a group of programmes. This is an important part of the quality assurance process. The departmental head and other senior staff involved in the running of the programme must be totally committed to, and supportive of, the self-review and its purposes. A senior person with appropriate experience is appointed to coordinate and lead the self-review process supported by the HEP's quality committee or its equivalent. The self-review builds as much as possible on current relevant activities and materials.

Following the conferment of the Full Accreditation of the programme, the department is expected to continue to carry out a self-review exercise every one to three years, or as specified in the conditions of the programme accreditation. This is for the purpose of continual quality improvement as well as for Programme Maintenance Audit, which is an audit to maintain the accredited status of the said programme. A copy of all self-review exercises must be submitted to the MQA.

A programme self-review is concerned with the programme's own goals and with the success of the department in achieving those goals. The self-review must be widely understood and owned so that the results and implications of the review are followed through.

For a self-review exercise, the department will bring together representatives of the administration, the academic staff, students and other stakeholders to:

- i. collect and review data on the educational programme;
- ii. analyze the data to identify the programme strengths, areas of concern and opportunities;
- iii. develop strategies to ensure that the strengths are maintained and problems are addressed and
- iv. make specific recommendations for further quality enhancement.

This internal quality audit is concerned with the objectives of the programme, and with the success of the department in achieving those objectives and learning outcomes based on the guidelines on good practices and the general requirements in the nine areas of evaluation as described in Section 2.

Specific self-questioning might be structured to address these questions vis-a-vis each of the nine areas of evaluation:

- i. What actions are we taking in relation to this area?
- ii. Why were these actions chosen?
- iii. How do we check their effectiveness? What performance indicators do we have?
- iv. Are the indicators effective?
- v. What do we do as a result of the review?
- vi. Can we measure the degree of achievements? What are the actual outcomes?
- vii. Can we improve on the existing actions, even on those that are already effective?

An internal quality audit has several merits, including:

- i. the recognition of departmental autonomy and responsibility;
- ii. the maintenance of a process of critical self-development and
- iii. the production of information, and reflection on it, some of which is not normally evident.

4.1.1 The programme self-review task force

A programme self-review exercise requires time and effort. A self-review task force is formed and a chairperson is appointed. Members of the task force should include people who are able to make an objective assessment and could give useful information on the programme. They may include external

examiners, heads of departments and programmes or programme coordinators, senior and junior academics, administrative staff, students and alumni, and others associated with the programme.

For each of the nine areas of evaluation that the Self-Review Report (SRR) covers, it is recommended that a person most familiar with the relevant area is appointed as the head of that area. The chairperson is responsible for coordinating data collection and systematization, overseeing issues that emerge during database preparation, preparing the final unified version of the database, coordinating the self analysis report and writing the final unified SRR. The department and the HEP generally, must ensure that the views of the students are appropriately included in the SRR.

4.1.2 The programme self-review process

The programme self-review process involves three main activities, namely, data collection, data review and reporting.

i. Data Collection

Data, completed by the most appropriate and knowledgeable person for that particular section, should be compiled by the head of the section appointed. Care should be taken to ensure the accuracy and consistency of data across sections. Wherever possible, references should be made to documents that are already published, which could be attached or made available to the Panel of Assessors (POA) during the programme accreditation or monitoring visits.

The department should provide an overall factual description of the programme, and not just provide brief answers to the specific questions listed under each heading. Information on the processes by which decisions are made and its rationale should also be included.

A self-review carried out with respect to a programme or a group of programmes should be built on the department's existing quality system. It should incorporate information and conclusions obtained from a variety of sources, which allows for cross-checking of data and a broader scope of perspectives.

When collecting data, the internal review committee should:

- i. plan and carry out assigned responsibilities effectively and efficiently;
- ii. comply with the applicable audit requirements;
- iii. communicate and clarify audit requirements;
- iv. document the observations;
- v. retain and safeguard documents pertaining to the audit;
- vi. ensure such documents remain confidential;
- vii. treat privileged information with discretion; and
- viii. cooperate with, and support, the chairperson.

They should also:

- i. work within the audit scope;
- ii. act in an ethical manner at all times;
- iii. exercise objectivity;
- iv. collect only data that is relevant;
- v. remain alert to any indications that can influence the audit results and possibly require further investigation;
- vi. treat all personnel involved in a way that will best achieve the audit purpose; and
- vii. be able to answer such questions as:
 - a. Are all documents and other information used to describe the quality system adequate to achieve the required quality objectives?
 - b. Are the procedures and documents supporting the required elements of the quality system available, understood and utilized by the department?

ii. Reviewing the data collected

Reviewing the data collected can be in terms of asking questions about processes and their consequences, and about structures and their effects. Thus it could generate a critique which is both objective and effective. The internal review committee undertakes an analysis of strengths, weaknesses, and opportunities of the programme and assesses them against the quality standards.

The head of every section forwards his report of the analysis to the chairperson of the task force. The chairperson synthesizes and summarizes the findings, presents them to the relevant department

and publishes the findings as a Programme Self-Review Report (PSRR).

When reviewing the data, internal reviewers are responsible to:

- i. comply with the applicable audit requirements;
- ii. plan and carry out assigned responsibilities effectively and efficiently;
- iii. analyze and report the audit results;
- iv. retain and safeguard documents pertaining to the audit;
- v. submit the report as required;
- vi. ensure the report remains confidential and treat privileged information with discretion;
- vii. cooperate with, and support, the chairperson; and
- viii. liaise with the department for further data.

They should also:

- i. work within the audit scope;
- ii. exercise objectivity;
- iii. analyze evidence that is relevant and sufficient to draw conclusions regarding the internal quality system;
- iv. remain alert to any indications of evidence that can influence the audit results that may require further inquiry;
- v. act in an ethical manner at all times;
- vi. constantly evaluate the observations and the personal interactions during the audit;
- vii. be able to answer such questions as:
 - a. Are all documents and other information used to describe the quality system adequate to achieve the required quality objectives?
 - b. Are the procedures and documents supporting the required elements of the quality system available, understood and utilized by the department?
- viii. arrive at objective conclusions based on the audit observations; and
- ix. remain true to the conclusions irrespective of internal and external pressures to change them without objective basis.

4.1.3 Guidelines for the Programme Self-Review Report

Where the HEP is applying for a group of related programmes, it only needs to submit one Self-Review Report (SRR). However, it must identify programme specific matters and clearly indicate how the different learning outcomes of each programme are met.

The Report outlines the findings of the internal task force, which will include commendations, affirmations and recommendations. The task force comes to its conclusions through its interpretation of the evidences gathered. The extent and weight of the recommendations are determined by the observed facts.

The Programme Self-Review Report should contain objective and substantiated statements. The Report should focus on the policies, processes, documentation and strength and weakness relating to the programme. The Report should not include comments on individuals, positively or negatively.

The findings of the task force deal with all the nine areas of evaluation for quality assurance. However, the Report should not go into excessive details, such as listing all possible strengths. The Report draws special attention to the commendable practices of the department.

In writing recommendations, the following should be kept in mind. Areas for improvement should be prioritized and stated briefly and concisely. The Report will address issues, identify the areas of concern, and determine the most appropriate activities that need to be undertaken. It will make constructive comments on aspects of the department's plan to achieve its goals and objectives.

4.2 The External Programme Evaluation

All applications for programme accreditation will be subjected to an independent external evaluation coordinated by the MQA.

The MQA advocates no fixed interpretation of the concept of an effective programme design. It does, however, expect each programme provider to develop its own context and purpose, and to use the purpose statement as the foundation of planning and evaluation of the programme. The department should employ a variety of assessment methods, and demonstrate use of the results of the planning and evaluation process for the improvement of the programme and its support activities. The quality of the programme will be judged by how effectively the programme achieves its stated objectives and the external evaluation panel will make judgments based on the evidence provided by the department and its own investigations.

The following describes the role players, processes and stages involved in the conduct of the programme accreditation.

4.3 The Role Players

i. The Liaison Officer

The HEP or the department should appoint a liaison officer to act as the key link between it and the MQA to coordinate the programme evaluation exercise. The MQA should be informed of the name of the officer and will contact him on the arrangements for the programme evaluation.

Where there is a need for a site visit by the evaluation team, the liaison officer may be requested to assist in making arrangements for appointments, and in arranging accommodation and ground transportation for the team. The location of the accommodation should be close to the HEP wherever possible to minimize travel time.

The liaison officer can also assist in arranging the tentative agenda for the visit and informing all the relevant people of the evaluation schedule.

The liaison officer shall also ensure that the evaluation team will be provided with the necessary facilities to carry out its assignment. This will include the HEP providing a base room and meeting rooms for the team.

Base room

- The base room serves as the team's office for the sole use of its members and the liaison officer, and should be provided with the necessary office equipment.
- All forms of information in the base room should be accessible to the evaluation team.

This is where the evaluation team will work, share evidence, check judgments, read documentary evidence and draft reports. It is an important place for the team to share ideas and to analyze findings. Because of the confidential nature of information and discussion in the base room, access to it must be restricted.

Meeting rooms

Individual meetings with members of the department or the HEP may take place in the base room but generally it is better if such meetings can be held in separate meeting rooms. This is to provide privacy and avoid anxiety and pressure.

The liaison officer may be requested to join the meeting of the evaluation team should there be a need for clarification of issues.

ii. Representatives of the HEP

The HEP will identify representatives of appropriate stakeholders to meet the POA to discuss the programme. The HEP will be advised as to the groups of people the panel will interview after the panel's reading and discussion of the PSRR. The POA may request to meet the following people or categories of people:

- The Chief Executive Officer, alone or together with the senior management. It is preferable that the first and the last formal meeting be with the Chief Executive Officer
- Key persons in the HEP responsible for the policy, management and operation of the quality system and subsystems
- The head of department
- The programme leader
- Members of the internal review committee
- Members of the board of the department

- Clinical Supervisors/Preceptors
- Student leaders
- Academic staff and a cross-section of students of the programme
- A selection of graduates, where appropriate
- Leaders from industry and government, relevant to the programme

It is important for the panel of assessors to meet representatives of each of the above categories to obtain a cross-sectional perspective of the programme and its quality, each contributing its views from their specialized perspective. In relation to the effectiveness of teaching-learning and the achievement of learning outcomes, two key constituents would be the students and academic staff.

Students should be selected and briefed on their role to provide representative student input. Student opinion will be sought regarding the quality and adequacy of the academic programme and the provision of the student support services, as well as their role in providing feedback to the department on these matters. Students can also be requested to serve as guides in the visits to the library, classroom, laboratories and other teaching-learning facilities.

Representatives of the academic staff should also be briefed on their roles so that they may provide representative input as well. Their opinion is sought regarding staff development, promotion and tenure, workload distribution, teaching skills, their understanding of the programme aims and learning outcomes, their perception of the programme, students, the academic culture of the department and appropriateness and sufficiency of available facilities.

iii. The Chairperson

The MQA will appoint a chairperson for the evaluation panel who will be responsible for the overall conduct of the external programme evaluation exercise. Further details on the roles and responsibilities of the chairperson are given in Section 5.

iv. The Panel Members

The MQA will appoint the members of the POA. Further details on the roles and responsibilities of the Panel members are given in Section 5.

4.4 The Programme Evaluation Timeline

There are two levels of programme evaluation that is Provisional Accreditation and Full Accreditation. Although both share many common processes, there are nevertheless many differences. The following discussion on the timeline takes into consideration these differences.

When the HEP submits the relevant documents for purposes of evaluation -- MQA-01 in the case of Provisional Accreditation, and MQA-02 in the case of Full Accreditation -- the MQA will scrutinize the documents to ensure that they are complete. The MQA will then form a panel of assessors and prepare to commence the evaluation exercise. Where a visit is necessary, the MQA will provide the HEP with the evaluation timeline. The evaluation timeline is a normal schedule outline for the conduct of such a visit. It is usual for the timeline of the evaluation to be determined together by the HEP and the MQA secretariat. The schedule is in three segments:

- i. weeks before the Programme Evaluation Visit;
- ii. the week of the Programme Evaluation Visit; and
- iii. weeks after the Programme Evaluation Visit.

4.4.1 Provisional Accreditation Timeline

There is a close link between the Provisional Accreditation of a programme by MQA and the approval to conduct it which is granted by the MOHE.

Upon receipt of a complete application for Provisional Accreditation of a programme from an HEP, the MQA will commence the evaluation process. At the successful completion of the evaluation process, the MQA will grant the Provisional Accreditation to the programme.

A typical timeline for a Provisional Accreditation process is shown in the table below.

Table 2.8 A typical timeline for Provisional Accreditation

Week	Activities and Responsibilities
1	<ul style="list-style-type: none"> • HEP submits a complete application to MQA • MQA: <ul style="list-style-type: none"> - records the application - assigns the application to the relevant officer - checks whether the information submitted is complete - notifies the HEP that the evaluation process will commence
2	<ul style="list-style-type: none"> • MQA: <ul style="list-style-type: none"> - appoints members of panel of assessors (POA) - forwards the application to the POA
3–6	<ul style="list-style-type: none"> • POA prepares the evaluation report • <i>(MQA, HEP and the POA agree on a date for a coordination meeting, if necessary)</i> • POA sends the evaluation report to MQA
7–8	<p><i>(If a site visit is necessary, the visit will be carried out at this point)</i> <i>(Coordination meeting of HEP, MQA and the POA, if necessary)</i></p> <ul style="list-style-type: none"> • Chairman of the POA: <ul style="list-style-type: none"> - collates the report of the panel members - sends the evaluation report to MQA • MQA verifies the evaluation report and sends it to the HEP
9–10	<ul style="list-style-type: none"> • HEP sends feedback on the evaluation report to MQA
11–14	<ul style="list-style-type: none"> • MQA sends the feedback to Panel Chairman • Chairman verifies the feedback • MQA Special Committee reviews the report for purposes of submission to the Accreditation Committee • MQA tables the report and the recommendation to the Accreditation Committee Meeting
	<ul style="list-style-type: none"> • MQA grants Provisional Accreditation

4.4.2 Full Accreditation Timeline

Typically, an application for Full Accreditation is made when the first cohort of students reaches their final year. Full Accreditation requires a site visit by the POA. The Full Accreditation process can be divided into three main components: before, during and after the site evaluation visit.

Before the Evaluation Visit

Table 2.9 A typical timeline prior to evaluation visit

Weeks before	Activities and Responsibilities
8	<ul style="list-style-type: none"> • HEP submits a complete Full Accreditation application to MQA • MQA: <ul style="list-style-type: none"> - records the application - assigns the application to the relevant officer - checks whether the information submitted is complete - notifies the HEP that the evaluation process will commence
7	<ul style="list-style-type: none"> • MQA submits the list of proposed assessors to the HEP
6	<ul style="list-style-type: none"> • HEP sends response to MQA on the list of proposed assessors • MQA: <ul style="list-style-type: none"> - appoints the members of the POA - forwards the application to the POA
5–1	<ul style="list-style-type: none"> • POA prepare the preliminary evaluation report • MQA, HEP and the POA agree on a date for evaluation visit to the HEP • POA preparatory meeting (refer to Section 4.5) • POA sends the preliminary evaluation report to MQA

During the Evaluation Visit

The design of the actual timetable for the visits by the evaluation team to the HEP may differ. Visits can be between two to five days' duration depending on the scope of the visit as agreed between the MQA and the HEP. The table below describes a typical 2-day visit schedule.

Table 2.10. A typical schedule for an evaluation visit

Day	Time	Activity	Persons Involved
1	0900 - 0930	POA Coordination Meeting	POA and HEP Liaison Officer
	0930 - 1100	Meeting of Key Players Briefing by HEP	POA and HEP Senior Management and Programme Staff
	1100 - 1130	POA Meeting	POA
	1130 - 1230	Campus Tour /Facilities Survey	POA and Student Guide
	1230 - 1400	Lunch and Document Review	POA
	1400 - 1600	Meeting with Key Programme Staff	POA and Programme Staff
	1600 -1700	Review of Documents	POA
2	0900 - 0930	POA Review Meeting	POA and the Liaison Officer
	0930 - 1100	Meeting with Programme Team, Counsellors and Other Support Staff	POA, Counsellors and Support Staff, Programme Team
	1100 - 1230	Class Observations	POA
	1230 - 1430	Lunch Meeting with Students	POA and Students
	1430 - 1530	POA Review Meeting	POA
	1530 - 1600	Additional Meeting with the HEP Staff, if required. Review of Additional Documents	POA and Relevant HEP Staff

	1600 -1630	POA Finalizes Findings	POA
	1630 - 1700	Exit Meeting	POA and HEP Representatives
The MQA acts as the secretariat to the POA. An MQA officer will be involved in all the above activities in that capacity as a resource person.			

After the Evaluation Visit

Table 2.11 A typical timeline post evaluation visit

Weeks After	Activities and Responsibilities
1–2	<ul style="list-style-type: none"> • Chairman of the POA: <ul style="list-style-type: none"> - collates the report of the panel members - sends the final report to MQA
3–4	MQA verifies the final report and sends it to the HEP
5–6	HEP sends feedback on the evaluation report to MQA
7–10	<ul style="list-style-type: none"> • MQA sends the feedback to Chairman • Chairman verifies the feedback • MQA Special Committee reviews the report for submission to the Accreditation Committee • MQA tables the report and the recommendation to the Accreditation Committee Meeting
11–12	<ul style="list-style-type: none"> • MQA: <ul style="list-style-type: none"> - notifies the HEP of the accreditation results - grants Accreditation

4.5 The Panel of Assessors Preparatory Meeting

After preliminary reports of each member of the panel has been submitted to MQA, there will be a Preparatory Meeting of the POA, ideally two weeks before the scheduled visit. In this meeting, the POA will:

- share each other's views of the HEP's submission in MQA-02;
- determine the main issues for evaluation;
- review the evaluation procedures;
- identify any further information, clarification or documentation required from the HEP; and
- draft a timetable for the programme evaluation visit.

Following the Preparatory Meeting, the MQA will advise the HEP if there is any further information, clarification or documentation required from it.

4.6 The Programme Evaluation Visit

The principal purpose of the site evaluation visit by the POA is to test the statements, descriptions, conclusions and proposed improvement activities as presented in the PSRR and to acquire further insight into the programme's operations through first-hand investigation and personal interaction. A visit allows a qualitative assessment of

factors that cannot be easily documented in written form and may include inspection of facilities.

There will be an opening meeting in which the HEP provides background information. The purpose of the meeting is to introduce the assessors as individual people and fellow professionals.

The panel conducts interviews with staff, students and other relevant stakeholders of the department to clarify issues to assist it in reviewing the effectiveness of the quality system of the programme in order to achieve its aim and objectives. The POA, already equipped with the background information of the programme, reaches its final conclusions through interviews and observations, and through its consideration of the additional documentary evidence supplied.

The panel normally takes advantage of every appropriate opportunity to triangulate with various groups. To this end, few meetings with groups are likely to be single-purpose meetings. Interviewees may, within reason, expect to be asked about anything within the scope of the programme evaluation.

After the interviews are concluded, the panel meets to formalize its preliminary findings which are then reported orally to the HEP.

4.7 The Oral Exit Report

At the end of the visit, the Chairperson delivers an oral report to the HEP on behalf of the panel. The oral report highlights the programme's areas of strengths and emphasizes the areas of concern and opportunities for improvement. All key elements must be covered at the oral exit report so that the final written report is consistent with the oral report.

The Chairperson provides opportunities for the members of the department to seek clarifications on points raised in the oral report. He should advise the members of the HEP that the findings given in the oral report are tentative. The findings will be presented in more detail in the written Final Evaluation Report.

4.8 The Draft Evaluation Report

The aim of the programme evaluation is to produce a report that is of assistance to the department and the HEP in continual quality improvement. The Chairperson is responsible for drafting the report, in full consultation with, and cooperation of, the panel members, to ensure that it represents the consensus view of the panel of assessors.

Approximately a month after the evaluation visit, the MQA sends the HEP a copy of the draft report for corrections of errors of facts and emphasis.

4.9 The Final Evaluation Report

The panel comes to its conclusions and recommendations through observed facts and through its interpretation of the specific evidences received from the department or gathered by itself. The panel report will generally include **commendations** (aspects of the provision of the programme that are considered worthy of praise), **affirmations** (proposed improvements by the department on aspects of the programme, which the panel believes significant and which it welcomes) and **recommendations** to improve the programme.

In relation to accreditation, the panel may propose one of the following:

- i. **Grant the Accreditation without Conditions**
- ii. **Grant the Accreditation with Conditions:**
 - Requirements
Actions specified by the evaluation panel or proposed actions as specified by the department itself, which do not prevent or delay accreditation but completion of which, must be confirmed to the MQA by a date to be agreed between the HEP and the MQA.
 - Conditions
Actions that must be taken and reported to the MQA before accreditation can be effected and therefore accreditation is not yet granted until these have been fulfilled to the satisfaction of the MQA.

All accredited programmes will be registered in the Malaysian Qualifications Register (MQR).

iii. **Denial**

- Denial is where the evaluation panel recommends accreditation is not granted. The panel will provide reasons for the denial.

Note

Accreditation

Full Accreditation is awarded subject to a continuous monitoring of between two to five years on the basis that:

- i. the optometry/opticianry education provided is relevant to the eye care needs of the country and there is evidence that the objectives are being met;
- ii. the intellectual components and the educational dimensions of the curriculum and its supporting system meet the standards set by the Joint Technical Committee and the global consensus on quality;
- iii. there is appropriate balance between the size of the enrolment in each class and the total resources of the programme, including the size and variety of academic fields of the optometry/opticianry school, physical facilities and equipment, the budget and a spectrum of clinical resources sufficiently under the control of the school; and
- iv. there is evidence of quality management for sustainability of the programme and the embrace of changes.

The Higher Education Provider (HEP) is required to notify MQA when changes are made to the approved curriculum. The Joint Technical Committee may decide to allow the changes or (where substantial changes are made), consider the curriculum as new. In approving a new curriculum introduced in an optometry/opticianry school that is already established, the Joint Technical Committee may either approve the introduction of the new course within the current period of accreditation of the school or require separate accreditation of the changed course.

- Accreditation may be awarded subject to certain conditions being addressed within specified periods. The optometry/opticianry school is required to submit periodic reports. The Joint Technical Committee may appoint a panel of assessors to revisit an optometry/opticianry school in this category during the period of accreditation, depending on the periodic reports. If the optometry/opticianry school does not achieve the required progress, the accreditation status may be reduced to a shorter period of time. It may also impose additional conditions.
- Accreditation may be granted for shorter periods of time with conditions if the Joint Technical Committee identifies significant deficiencies and non compliance with the standards. Before the period of accreditation ends, or sooner if the school considers that it has already addressed its deficiencies, the Joint Technical Committee shall conduct a review. The optometry/opticianry school may request:
 - a) either a full evaluation of the school and the course, with a view to granting accreditation for a further maximum period; or
 - b) a more limited review, concentrating on the areas where deficiencies were identified, with a view to extending the current accreditation to the full period.
- Accreditation may be refused where the Joint Technical Committee considers that the deficiencies are so serious as to warrant that action.

The date of accreditation will be from the last day of the visit. For new schools the survey visit should be done one year before graduation. The application for accreditation should be done 1 ½ years before.

PERIODIC REPORTS

During the period of accreditation, the Joint Technical Committee requires reports from the optometry/opticianry school about any curriculum changes, any new issues that may affect the optometry/opticianry school's ability to deliver the curriculum, and

of the school's response to issues raised in the Accreditation Report. This requirement should not inhibit new initiatives or changes in curriculum.

Optometry/opticianry schools with accredited programme must submit a report at least once in two years. Reports are formally considered by the Joint Technical Committee, which may ask an optometry/opticianry school to clarify or amplify information in a report and conduct a special visit to the school.

UNSATISFACTORY PROGRESS

The Joint Technical Committee may decide, on the basis of an optometry/opticianry school's reports or other evidence available to it, that it has concerns in relation to the continued accreditation of the school. The Joint Technical Committee will inform the optometry/opticianry school of its concerns and the grounds on which they are based. It will set up a small team to visit the school and prepare a report. It will also inform the relevant government health authority of its concerns, the grounds on which they are based, and the process to be implemented.

The team's report will indicate:

- (i) that the conditions are being met or are likely to be met in the near future.

OR

- (ii) that the conditions are not met or unlikely to be met in the near future. In this case the Joint Technical Committee may:
 - a) place additional conditions, for example specify actions to be taken or issues to be addressed by the optometry/opticianry school in a fixed period of time. A school in this position may apply for re-instatement of accreditation at any time after the allocated fixed period of time subject to the fulfilment of all the additional conditions prescribed by the Joint Technical Committee.
 - b) withdraw accreditation from the optometry/opticianry school, if it considers that the school is unable to deliver the optometry/opticianry course at a standard or in a manner compatible with the accreditation standards. In this case, the Joint Technical Committee will submit the

recommendation to MOC. If approved, MOC will make known the decision to the MQA and MOHE.

- c) based on the decision, the relevant authorities (MOHE) should work with the optometry/opticianry school to facilitate transfer arrangements for the enrolled students to complete an accredited optometry/opticianry course in another institution.

4.10 Appeal

Appeals to the MQA can be made in relation to:

- i. factual contents of the reports;
- ii. substantive errors within the report; or
- iii. any substantive inconsistency between the oral exit report, the final evaluation report, and the decision of the MQA.

4.11 Follow Up

The department will inform MQA as to the progress arising from the Evaluation Report. The purpose of the ongoing interaction is:

- i. to get feedback on the Evaluation Report and the evaluation process, and on the extent to which the department considers the Report to be authoritative, rigorous, fair and perceptive;
- ii. to ensure corrective actions are taken if so required; and
- iii. to have a dialogue with those responsible for follow up action as to how the recommendations will be integrated into the HEP and department's continual quality improvement plan.

Section 5

The Panel of Assessors

INTRODUCTION

Submissions by the Higher Education Providers (HEP) will be for the purpose of their application, either for a Provisional Accreditation or for a Full Accreditation of programmes. Assessment by the Panel of Assessors (POA) for Provisional Accreditation will be based on MQA-01. For Full Accreditation, it will be based on MQA-02, as well as other documents submitted, and further supported by observation, written and oral evidences, and personal interaction during the evaluation visit. Provisional Accreditation also involves a site visit.

For the purposes of this section, the terms assessment and evaluation are used interchangeably. Programmes are assessed or evaluated for the purpose of accreditation.

The HEP and the department are expected to have the necessary checking mechanisms in place and to be able to demonstrate to the POA that the procedures are effectively utilized and that there are plans to address shortfalls.

The primary task of the POA is to verify that the processes, mechanisms, and resources are appropriate for the effective delivery of the programme. To evaluate the effectiveness of the quality assurance procedures, the assessors must investigate the application of these procedures, and the extent to which the programme achieves the expected learning outcomes. The need to ensure that the programme learning outcomes are met should be particularly emphasized.

5.1 Appointing Members of the Panel of Assessors

The selection of members of the POA is guided by the type, level and discipline of the programme to be assessed, and by the availability, suitability, expertise and experience of the prospective panel members.

5.1.1 Personal and General Attributes of Assessors

Assessors should be competent, open-minded and mature. They should be good speakers and good listeners. They should possess sound judgment, analytical skills and tenacity. They should have the ability to perceive

situations in a realistic way, understand complex operations from a broad perspective, and understand the role of individual units within the overall organization.

Equipped with the above attributes the assessors should be able to:

- obtain and assess objective evidence fairly;
- remain true to the purpose of the assessment exercise;
- evaluate constantly the effects of observations and personal interactions during the visit;
- treat personnel concerned in a way that will best achieve the purpose of the assessment;
- commit full attention and support to the evaluation process without being unduly distracted;
- react effectively in stressful situations;
- arrive at generally objective conclusions based on rational considerations; and
- remain true to a conclusion despite pressure to change that is not based on evidence.

It is not expected that each panel member possesses all the characteristics and experience required of an assessor, but as a group, the panel should possess qualities which may include some or all of the following:

i. Higher education qualification or further education and training aspects:

- Appropriate subject knowledge and teaching experience
- Knowledge of curriculum design and delivery
- Programme leadership or management experience
- Knowledge of higher education or further education and training, including the understanding of current responsibilities and requirements and organizational features relevant to particular programmes
- Experience in research and scholarly activities
- Clinical experience

ii. Quality evaluation aspects:

- An understanding of the context and environment within which the department operates
- Commitment to the principles of quality and quality assurance in higher education
- Knowledge of quality assurance, methods and terminologies

- Experience and skills in quality reviews and accreditation processes
- Ability to relate processes to outputs and outcomes
- Ability to communicate effectively
- Ability to focus knowledge and experience to evaluate quality assurance procedures and techniques, and to suggest good practices and ways for improvements
- Ability to work in a team

iii. Personal aspects:

- Integrity
- Discretion
- Timeliness
- Breadth and depth of perspective
- Commitment and diligence

5.1.2 Responsibilities of the assessors

Assessors are responsible for:

- complying with the evaluation requirements;
- communicating and clarifying evaluation requirements;
- planning and carrying out assigned responsibilities effectively and efficiently;
- documenting observations;
- reporting the evaluation findings;
- safeguarding documents pertaining to the accreditation exercise;
- ensuring documents remain confidential;
- treating privileged information with discretion; and
- cooperating with, and supporting, the Chairperson.

Assessors should:

- remain within the scope of the programme accreditation;
- exercise objectivity;
- collect and analyze evidence that is relevant and sufficient to draw conclusions regarding the quality system;
- remain alert to any indications of evidence that can influence the results and possibly require further assessment; and
- act in an ethical manner at all times.

5.2 Conflicts of Interest

Prospective assessors must declare their interest in the assignment. If the prospective assessor has a direct interest, the MQA may exclude him from consideration. The MQA will send the list of prospective assessors to the HEP concerned to allow it to register objections, if any. If an HEP disagrees with a prospective assessor, it is obliged to furnish reasons for its objection. However, the final decision whether to select a particular person as an assessor rests with the MQA.

Conflicts of interest may be categorized as personal, professional or ideological.

- **Personal conflicts** could include animosity or close friendship between an assessor and the Chief Executive Officer or other senior manager of the HEP, or being related to one, or being a graduate of the HEP, or if an assessor is excessively biased for or against the HEP due to some previous event.
- **Professional conflicts** could occur if an assessor had been a failed applicant for a position in the HEP, was a current applicant or a candidate for a position in the HEP, was a senior adviser, examiner or consultant to the HEP, or is currently attached to an HEP that is competing with the one being evaluated.
- **Ideological conflicts** could be based on differing world views and value systems. An example of this type of conflict would be an assessor's lack of sympathy to the style, ethos, type or political inclination of the HEP.

5.3 Members of Evaluation Team

Potential members for the POA are selected from the MQA's Register of Assessors. The selection of assessors depends on the type of the programme, the characteristics of the HEP, and the need to have a panel that is coherent and balanced in background and experience.

It is crucial that the members of the POA work together as a team, and not attempt to apply pre-conceived templates to their consideration of the programme being evaluated, nor appear to address inquiries from entirely within the perspective of their own specialty or the practices of their own HEP. Unless otherwise arranged, all communications between the HEP and members of the panel must be via the MQA.

5.3.1 The Chairperson

The Chairperson is the key person in an accreditation process and should have experience as an assessor. It is the Chair's responsibility to create an atmosphere in which critical professional discussions can take place, where opinions can be liberally and considerately exchanged, and in which integrity and transparency prevail. Much of the mode and accomplishment of the accreditation exercise depends on the Chairperson's ability to facilitate the panel to do its work as a team rather than as individuals, and also to bring out the best in those whom the panel meets.

The Chairperson presents the oral exit report that summarizes the tentative findings of the team to the representatives of the HEP. The Chairperson also has a major role in the preparation of the written report and in ensuring that the oral exit report is not materially different from the final report.

The Chairperson is expected to collate the reports of the members of the panel and to work closely with them to complete the draft report shortly after the visit. He is responsible for organizing the contributions from the other team members and to ensure that the overall report is coherent, logical, and internally consistent.

If important areas have been omitted from a team member's write-up, it is the responsibility of the Chairperson either to contact that member for additional details, or to supply the missing content himself.

It is important for the Chairperson to compare his final draft report with the set of strengths and concerns identified by the panel members to ensure that all areas are well documented in the text of the report. Attention should be paid so that comments made are based on due compliance to the quality assurance standards as contained in this *Code of Practice for Programme Accreditation*.

The Chairperson is responsible to ensure that the oral exit report accurately summarizes the outcomes of the visit and is consistent with the reporting framework. He is also responsible to ensure that the department's plan of action for programme improvement is considered and endorsed by the panel.

5.3.2 The MQA Officer

The MQA officer has the following responsibilities:

- To keep copies of handouts, database pages, evaluation reports, organizational charts, for incorporation, as appropriate, in the Final Report;
- To act as a resource person for policy matters;
- To ensure that the panel conducts itself in accordance with its responsibilities;
- To liaise with the department liaison officer;
- To coordinate and liaise with the panel members;
- To ensure that the MQA processes the report effectively and in a timely manner; and
- To provide other relevant administrative services.

5.4 The Roles and Responsibilities of the Programme Evaluation Panel

The relevant documents submitted by the HEP to the MQA when applying for Provisional or Full Accreditation of a programme, will be distributed to the members of the POA.

In evaluating the HEP's application for Provisional or Full Accreditation of a programme, the panel will:

- assess the programme for compliance with the Malaysian Qualifications Framework (MQF), discipline standards and the nine areas of evaluation, as well as against the educational goals of the HEP and the programme;
- verify and assess all the information about the programme submitted by the HEP, and the proposed improvement plans;
- highlight aspects of the Programme Self-Review Report which require attention that would assist it in its effort towards continuous quality improvement; and
- reach a judgment.

Panel members are selected so that the panel as a whole possesses the expertise and experience to enable the accreditation to be carried out effectively. Members may translate their different perspectives into different emphases in their attention to the evaluation process, and on certain aspects of the report.

5.4.1 Before the Evaluation Visit

Before the Evaluation Visit, panel members must have read thoroughly the HEP's Programme Information and Self-Review Report to familiarize themselves with the HEP and the department's policies, procedures and criteria for assuring the quality of the programme. Adequate exploration of the issues and thorough understanding of the Self-Review Report by the POA will ensure the credibility of, and confidence in, the accreditation process.

The Programme Information and Self-Review Report should be read at two levels. At one level, the assessors should read its contents for information on the HEP's quality management systems and the plan of the programme to achieve its objectives, and form preliminary views on them. At another level, the assessors construct an opinion on the quality and depth of the department's self-review of the programme.

The following are some of the questions which the assessors would want to consider in critically examining the Programme Self-Review Report (PSRR):

- How thorough is the PSRR?
- Does it show that the HEP and the department have a strong process of ongoing self-review?
- How perceptive is the PSRR?
- Does it clearly identify the strengths and weaknesses of the programme?
- Does it propose appropriate actions to enhance the strengths and remedy the weaknesses?
- Does it clearly indicate the capability and capacity of the department to achieve the objectives of the programme?

An assessor's analysis of the Programme Information and the Self-Review Report should result in:

- an understanding of the major characteristics of the HEP and department relevant to the programme evaluation;
- the identification of broad topics for investigation that arise from these characteristics; and
- the generation of other ideas about the strengths, concerns, quality system and proposed improvement plans of the programme.

The assessors may also find it helpful to record thoughts about the following:

- To request the department for further information before the site visit to clarify the SRR, to assist in planning the visit, and to save time during the visit;
- To request the department to furnish further information to be made available during the evaluation visit, particularly when the information sought would be voluminous;
- To alert the department before the evaluation visit of issues that may be raised during the visit; and
- To identify relevant persons or groups to be interviewed during the evaluation visit.

Each assessor is expected to produce a preliminary evaluation report to be submitted to the MQA and circulated to other panel members at least a week before the Preparatory Meeting. These reports highlight the major topics or concerns detected by the assessors. This advance information saves time at the Preparatory Meeting, and assists the meeting to focus quickly on substantive matters.

5.4.2 The Preparatory Meeting of the Panel of Assessors

At the Preparatory Meeting, panel members consider each other's comments on issues of particular interest or concern, and list out the further information that they may need to request from the department. These comments and requests guide the preparation of an initial programme for the evaluation visit. The Preparatory Meeting also provides an opportunity for the panel members to develop into a team with a common purpose rather than a group of individuals with divergent goals.

The purpose of the Preparatory Meeting is to ensure that all panel members:

- understand the purpose, context, parameters and constraints of the evaluation process in general and of any particular aspects of it;
- understand the sort of judgments and recommendations expected of them;
- are familiar with the MQA's procedures for conducting a programme evaluation exercise;
- recognize that any preliminary judgments formed during the reading of the PSRR may change following the evaluation visit,

- with the final conclusions based on explicit and secure evidence;
- avoid judging the programme primarily in terms of their own home campus or organization; and
- have an opportunity to share ideas, get acquainted and recognize the need to contribute their own ideas, experiences, expertise and knowledge with sensitivity to each other's views and contributions.

5.4.3 During the Evaluation Visit

At the Preparatory Meeting, issues may have been raised or have been resolved. However, there could still be significant disagreements between panel members on some issues. Such differences must be resolved by the end of the evaluation visit, and plans should be made for questioning and verifying the issues raised.

While this may require some lively debate in public meetings, it is important that the assessors maintain their professionalism. This is to avoid a public presentation of the lack of unanimity and to avoid wasting the short time available for interaction with members of the department and the HEP.

In group discussions, panel members should work with and through the Chair without being excessively formal. Members should respect the agenda agreed by the panel for the various meetings, and support the Chairperson as he matches the pace of the meeting to the size of its agenda.

During interviews with members of the department, the panel should clarify issues, and seek explanations, justifications and further information. It is extremely important to create an atmosphere for genuine dialogue. Questioning should be rigorous but fair and consistent. In particular, panel members need:

- to explore discrepancies between what is written and what is said;
- to seek clarification and confirmation when required;
- to listen as well as ask;
- to concentrate on major rather than minor issues;
- to participate in a collaborative manner;
- to be aware that the dynamics of the panel and of its relation to the staff of the department will change and develop during the visit; and
- to put interviewees at ease to ensure their full and active

contributions.

Panel members may also offer occasional suggestions where appropriate, but without slipping into the role of a consultant. The panel must do its utmost to unearth and consider all information that is relevant to its conclusions. A panel uses a variety of questioning styles to gather the information it requires, ranging from discursive to directive.

To pursue a particular issue, the panel might begin by seeking information through an open-ended question, and then investigate the issue further by probing through asking other questions based on the answer to the first question. This often leads to the use of closed questions, and finally checking to confirm the impression obtained.

The panel considers both quantitative and qualitative data, looking for specific strengths or areas for improvement and highlighting examples of good practice. Within the scope of the evaluation, the panel's work depends on well-chosen sampling. The selection of samples occurs at two levels. The first arises from the assessors' analysis of the Programme Information and Self-Review Report, during which particular areas may be identified as, for example, significant or problematic, and therefore selected for further investigation. This process is sometimes called scoping. At the second level, the panel decides what documentary or oral evidence is needed to sample within these areas. Some sampling may be done to check information already presented in the PSRR. If this verifies the information, the panel may use the rest of the report with confidence in its correctness and completeness, and avoid the repetition of collecting for itself information that is already available in the HEP's written documents.

Although a panel cannot cover all issues in depth, it delves into some issues through a process known as tracking, or trailing. This form of sampling focuses on a particular issue and pursues it in depth through several layers of the organization. For example, to check that procedures are being implemented, a selection of reports relating to a particular programme might be sought, and the way in which an issue arising in them had been dealt with would be tracked. Another instance would be the investigation of a system-wide issue, such as the way in which student evaluations of teaching are handled. A department may need to be informed in advance of the areas in

which this approach is to be used, so that the necessary documentation and personnel are available to the panel. Some of the materials may be able to be supplied in advance of the visit.

Triangulation is the technique of investigating an issue by considering information on it from sources of different types, such as testing the perceptions held about it by different individuals in the organization. For example, selected policies and their implementation may be discussed with the senior management, with other staff and with students to see if the various opinions and experiences of the policy and its workings are consistent.

Aspects of a programme may be checked through committee minutes, courses and teaching evaluations, programme reviews, reports of professional association accreditation, and external examiners' reports. The panel must determine where inconsistencies are significant, and are detracting from the achievement of the programme's objectives. The panel may also attempt to detect the reasons for such inconsistencies.

If an interviewee makes a specific serious criticism, the panel should verify whether this is a general experience.

Panel members must plan and focus their questions. They should avoid:

- asking multiple questions;
- using much preamble to questions;
- telling anecdotes or making speeches;
- detailing the situation in their own organization; and
- offering advice (suggestions for improvement and examples of good practice elsewhere can be included in the Evaluation Report).

A good discipline before asking any question is to ask oneself:

How can I ask this question in the fewest possible words?

The questioning and discussion must always be fair and polite. It must, however, be rigorous and incisive, as the Evaluation Report must reflect the panel's view of the programme, in respect of both achievements and weaknesses, and not merely describe a well-constructed facade. The panel

must collect convincing evidence during the evaluation visit. The evidence-gathering process must be thorough.

The panel must reach clear and well-founded conclusions within the terms of reference of the programme accreditation.

5.4.4 After the Evaluation Visit

After the evaluation visit, panel members read, comment on and, as desired, contribute to the draft or drafts of the Evaluation Report. Panel members should be satisfied that the report is accurate and balanced. On the submission of the report, the MQA will conduct an evaluation of the effectiveness of the POA and will give feedback to the panel on the evaluation. A report on the whole accreditation process will be prepared by the Chairperson, and will be submitted to the Joint Technical Committee to make the necessary recommendation to the Malaysian Optical Council

5.5 The Accreditation Report

The accreditation report outlines the panel's findings and recommendations. The panel comes to its conclusions through its interpretation of the specific evidence it has gathered, and the extent and weight of the recommendations are determined by the evidence.

The accreditation report should not contain vague or unsubstantiated statements. Firm views are stated categorically, avoiding excessive subtlety. The report does not comment on individuals nor appeal to irrelevant standards.

The panel's findings include the identification of commendable practices observed in the HEP and the department, and the report draws attention to these. The report deals with all relevant areas, but without excessive detail or trying to list all possible strengths. In writing the conclusions and recommendations, the following factors are kept in mind:

- Conclusions should be short, brief and direct to the point.
- Conclusions will address issues and not provide details of processes.
- Conclusions will be prioritised to provide direction to the department.
- Conclusions will:

- take into account the department's own plans of improvement;
- make recommendations for improvement in aspects not covered by the Self-Review Report; and
- make constructive comment on plans of improvement for the programme that will push the department and the HEP towards achieving its goals and objectives.

Section 6

Guidelines for Preparing the Programme Accreditation Report

INTRODUCTION

In preparing the accreditation report of a programme, the Panel of Assessors (POA) is guided by the format discussed below. This format is meant for Full Accreditation. With respect to Provisional Accreditation some changes may need to be made accordingly. This option applies particularly to information required on the nine areas of evaluation.

THE REPORT FORMAT

1. The Cover Page

Title : Report of a Full (or Provisional) Accreditation, No: XYZ0123
Name of HEP:
Name of Programme:

Date of site visit: (date)

Prepared by : The panel of assessors for the Malaysian Qualifications Agency

Note : This privileged communication is the property of the Malaysian Qualifications Agency

2. Table of Contents

3. Memorandum

This should include a signed statement from the POA composed as follows:

To : Malaysian Qualifications Agency

From : The Panel of Assessors that visited (name of HEP) on (date)

The panel of assessors that visited the (name of HEP) on (date) is pleased to provide the following report of its findings and conclusions.

Signature _____
Name:.....(Chairperson)

Signature _____
Name:.....(member)

Signature _____
Name:.....(member)

Signature _____
Name:.....(member)

4. Introduction and Composition of the Panel of Assessors

A typical example:

An assessment of the HEP was conducted with regard to the following (Programme(s)) on (date) by a panel of assessors representing the Malaysian Qualifications Agency. The panel expresses its appreciation to the Chief Executive Officer (name), academic staff, administrative staff and students for their interest and candour during the evaluation visit. The team also expresses a special thank you to (name) who acted very efficiently as the liaison officer and attended to all the needs of the team.

After the paragraph of introduction, list the members of the POA, giving their names, titles and designation and their roles in the panel. For example:

Chair	:	Name Designation and Affiliation
Member	:	Name Designation and Affiliation
Member	:	Name Designation and Affiliation
Member	:	Name Designation and Affiliation

5. Abstract

Provide an abstract of the evaluation report.

6. Conclusions of the Report

6.1 Full Accreditation

Summarize the assessment team's conclusion under the following headings:

1. **Commendation:** Aspects of the provision of the programme that are considered worthy of praise.
2. **Affirmation:** Proposed improvements by the department to aspects of the programme which the panel believes significant and welcomes.
3. **Recommendation:** Proposals by the POA for improvement of the

programme

With respect to status of the application for accreditation of the programme, the panel will propose one of the following:

i. Grant the Accreditation without Conditions

ii. Grant the Accreditation with Conditions:

- Requirements

Actions specified by the Evaluation Panel or proposed action as specified by the department itself, which do not prevent or delay accreditation but completion of which, must be confirmed to the MQA by a date to be agreed between the HEP and the MQA.

- Conditions

Actions that must be taken and reported to the MQA before accreditation can be effected and therefore accreditation is not yet granted until these have been fulfilled to the satisfaction of the MQA.

iii. Denial

Denial is where the evaluation panel recommends accreditation is not granted. The panel will provide reasons for the denial.

The report on the evaluation findings, together with recommendations for improvement, is presented to the Joint Technical Committee for its consideration. The Report is then finalized and a summary of it is released as a public document, usually a couple of weeks after the final version has been sent to the HEP.

In general, the report should adhere to the points presented orally in the exit meeting with the HEP and it is best to follow the sequence in which the items were listed in the oral exit report. For the areas of concerns (or problems), the panel should indicate their relative urgency and seriousness, and express recommendations in generic or alternative terms, and avoid giving prescriptive solutions.

6.2 Provisional Accreditation

The types of recommendations in the conclusion of the report of the evaluation for Provisional Accreditation will be largely similar to that of the Full Accreditation as outlined above. However, apropos of its provisional status and as an interim phase before Full Accreditation, there will be differences in emphasis and the degree of compliance in the nine areas of evaluation.

7. Previous Quality Assurance or Accreditation Assessment and Progress Report

If available, summarize the key findings and recommendations of the most recent assessment of the HEP or its programmes, including any progress report addressing any problems identified previously.

Give the dates of the previous assessment and report. Conclude this by summarizing the areas of concern in the assessment that the HEP has addressed and any issues that still remain.

8. The Programme Self-Review Report

Comment on the organization, the completeness and the internal consistency of the Programme Self-Review Report (PSRR). Were the numerical data (applicant, admissions, financial, etc.) updated to the current year?

Comment on the self-review in terms of the degree of participation by members of the HEP (academic staff, administrators, students, etc.), the comprehensiveness and depth of analysis; and the organization and quality of the conclusions and recommendations. Mention the degree to which the major conclusions of the POA reflect those of the self-review.

9. History of the HEP and the Programme

Briefly summarize the history of the HEP (begin from HEP, to the programme level) and supply figures of enrolment as documented.

Briefly describe the setting of the HEP, its mission and goals as well as its role in the state and local community. Describe also the relationship of the HEP with other centers, and if relevant, geographically separated campuses, and principal sites.

10. Report on the HEP's Programme in Relation to the Criteria and Standards for Programme Accreditation

This section of the report should contain a summary narrative of what has been found during the programme evaluation exercise. It should be structured around the nine areas of evaluation (programme quality standards) as in Section 2. All comments must be based on sound evidence submitted by the HEP or discovered by the Panel during its evaluation visit. The narrative should address each of the areas and questions as listed below.

At the end of each subsection, the narrative should indicate the extent to which the Benchmarked Standards and the Enhanced Standards for that specific aspect of the quality of the Programme have been met. For accreditation to be granted, it would normally be expected that all Benchmarked Standards for each of the nine quality areas would have been substantially met or the panel will specify requirements or recommendations to ensure that they are so met.

The following provides guidance on reporting the findings of the Panel in relation to each of the nine areas of evaluation for quality assurance.

Evaluation on Area 1: Vision, Mission, Educational Goals and Learning Outcomes

10.1.1 Statement of Programme Aims, Objectives and Learning Outcomes

Evaluation on Benchmarked Standards

- What are the vision, mission and educational goals of the HEP? How do these relate to the aims, objectives and learning outcomes of the programme?
- How are all these effectively made known to the HEP's internal and external stakeholders?
- How do the objectives of the programme reflect national goals and global developments?
- What are the processes involved in formulating the programme aims and objectives? How are they developed in consultations with stakeholders? Do these involve the academic staff and potential employers? In what form?

- How does the HEP ensure that the educational goals of the programme are consistent with its institutional purpose?

Evaluation on Enhanced Standards

- In what ways do the mission and goals encompass leadership qualities in the areas of social responsibility, research attainment, community involvement, ethical values, professionalism, and knowledge creation?
- Are the programme aims and objectives periodically reviewed? Is this done in consultations with stakeholders including the alumni, industry, the community, civil society and international peers?

10.1.2 Learning Outcomes

Evaluation on Benchmarked Standards

- How does the programme define the competencies that the student should demonstrate on completion of the programme? In what way do the component modules contribute to the fulfillment of the learning outcomes? How does the programme demonstrate that the student has achieved the learning outcomes?

Evaluation on Enhanced Standards

- In what way does the programme specify the link between the student's competencies expected at the end of the programme and those required by the market as well as for purposes of higher studies?

Note: The process of programme evaluation is to see if the HEP has set appropriate goals and whether the curriculum, the educational resources and the management processes are designed to achieve learning outcomes. Do not get misled by the general statements of mission and vision, and about the structure, goals and aspirations of the HEP. These provide a context and establish strategic directions, but they are not substitutes for statements of learning outcomes that should be translated down to departments and programmes.

Evaluation on Area 2: Curriculum Design and Delivery

10.2.1 Academic Autonomy

Evaluation on Benchmarked Standards

- Describe the level of autonomy given to the department in curriculum

design and the resources available to the department to facilitate this and to achieve the programme outcomes. Does the above involve franchise programmes as well?

- Illustrate how much autonomy is given to the academic staff in order to focus on areas of expertise such as curriculum development, supervision of student, research and writing, scholarly activities, administrative duties and community engagement.
- If there are programmes conducted in campuses that are geographically separated, comment on the mechanisms that exist to assure functional integration and to achieve comparability of educational quality and the evaluation of students across various sites of delivery.

Evaluation on Enhanced Standards

- Comment on the HEP's policies in relation of conflict of interest, especially in the area of private practice and part-time employment.
- Is the realm of academic autonomy of the department and the academic staff expanding, and in what way?

10.2.2 Programme Design and Teaching Learning Methods

Evaluation on Benchmarked Standards

- Describe the processes by which the curriculum is established, reviewed and evaluated. How do the academic and administrative staff get involved in this process?
- How was the needs assessment for the programme done? How are resources to support the programme identified?
- Show how appropriate and consistent are the programme content, approach and teaching learning methods, and how they support the achievement of the programme learning outcomes.
- Show whether there are diverse teaching learning methods that can help achieve the eight domains of the learning outcomes and that can ensure that students take responsibility for their own learning.

Evaluation on Enhanced Standards

- How does the curriculum encourage a multi disciplinary approach that can enhance personal development through electives, study pathways and other means? How are the effectiveness of the approaches monitored and appraised?
- How does the needs analysis for the programme involve feedback from external sources? What are these sources and how are the feedback obtained and utilized to improve the programme?
- Comment on the co-curricular activities available to students to enrich their experience and to foster personal development and responsibility.

10.2.3 Curriculum Content and Structure

Evaluation on Benchmarked Standards

- How is the core subject-matter incorporated into the curriculum to enhance student understanding of the concepts, principles and methods that support the programme outcomes?
- How does the programme fulfil the core requirements of the discipline and appropriate standards in line with international best practices of the field?
- How current are the contents and how are these updated to keep abreast with the advances in the discipline and to meet the current needs of society? What is the frequency of curriculum review of the programme?

Evaluation on Enhanced Standards

- How does the department access the latest developments in the field of study?

10.2.4 Management of the Programme

Evaluation on Benchmarked Standards

- How are students informed about the programme's learning outcomes, curriculum, and methods of assessment?
- Who is responsible for the planning, implementation and improvement of the programme? What authority does it have in establishing

procedures for planning and monitoring the programme?

- How adequate are the resources provided to the programme team to implement the teaching learning activities, and to conduct the programme evaluation for quality improvement?
- Comment on the review and the evaluation process of the programme and how the results are being utilized for programme improvement.
- Is the learning environment conducive for scholarly and creative achievement? How so?

Evaluation on Enhanced Standards

- Comment on the innovative efforts made by the department to improve teaching-learning. Who does it consult in this process and to what effect?

10.2.5 Linkages with External Stakeholders

Evaluation on Benchmarked Standards

- How are appropriate mechanisms put in place to link the department with the stakeholders outside of it for the purposes of curriculum development?

Evaluation on Enhanced Standards

- How is employer feedback obtained and utilized for curriculum development?
- Comment on opportunities given to students to develop linkages with external stakeholders.

Evaluation on Area 3: Assessment of Students

10.3.1 Relationship Between Assessment and Learning

Evaluation on Benchmarked Standards

- How are students evaluated? Comment on the alignment between assessment and programme aims and learning outcomes.
- How effective are the methods used in assessing learning outcomes and competencies?
- How are the assessments reflective of the MQF level of the programme?

Evaluation on Enhanced Standards

- How does the programme ensure the effective link between assessment and learning outcomes is maintained?

10.3.2 Assessment Methods

Evaluation on Benchmarked Standards

- How frequent and at what point are the methods of student assessment documented and communicated to students?
- Is the assessment method both summative and formative? Does that cover both theoretical and practical components of the programme?
- How does the department ensure the validity, reliability, consistency and fairness of the assessment system?
- How and how often are the methods of assessment reviewed?

Evaluation on Enhanced Standards

- Comment on the external sources referred to improve the methods of assessment.

10.3.3 Management of Student Assessment

Evaluation on Benchmarked Standards

- How promptly do students receive feedback on tests of their performance?
- How are changes to student assessment methods made? How are they communicated to the students?
- How is student assessment supervised? How does the department protect the confidentiality of the assessment system? How is the security of assessment documents and records ensured?
- Are the programme grading, assessment, and appeal policies and practices publicized? How widely is this carried out?
- How does the department ensure due process as well as opportunities for fair and impartial hearing?
- Where are the grading, assessment and appeal policies published and are the practices consistent with these policies? How are these made

known to students?

Evaluation on Enhanced Standards

- Comment on the autonomy of the department and the academic staff in student assessment and the role of independent external scrutiny of the student assessment system.

Evaluation on Area 4: Student Selection and Support Services

10.4.1 Admission and Selection

Evaluation on Benchmarked Standards

- How clear are the HEP's policies on student selection and student transfer, including those in relation to students with special needs? How are these published and disseminated?
- How does the HEP ensure that the selected students have capabilities that are consistent with the admission policies?
- Comment on the size of student intake (for each session over the recent period) in relation to the department's capacity to effectively deliver the programme. Comment also on the proportion of applicants to intake. Comment on the main characteristics of the students admitted.
- How well are the prerequisite knowledge and skills for the programme defined?
- Where the interview mode of selection is utilized, how objective and fair has it been?
- How does the department ensure that the student selection process is free from discrimination and bias?
- Comment on the policies and mechanisms for appeal.
- What developmental and remedial support are made available to students who needs such support?
- How does the HEP ensure the availability of adequate resources to take into consideration visiting, exchange, and transfer students?
- How often is the admission policy monitored and reviewed?

- How is the link between student selection and student performance monitored to improve student selection processes?
- Comment on the rate of student attrition and the reasons for it.

Evaluation on Enhanced Standards

- How are the relevant stakeholders engaged by the department in the review of its admission policy and processes?
- Comment on the relationship between the selection process, the programme and the learning outcomes.

10.4.2 Articulation Regulations, Credit Transfer and Credit Exemption

Evaluation on Benchmarked Standards

- How are the policies, regulations and processes of credit transfer, credit exemption and articulation practices defined and disseminated?
- Evaluate the implementation of the policies, regulations and processes above.

Evaluation on Enhanced Standards

- Comment on how the department keeps itself up-to-date on processes of articulation, credit transfer and credit exemptions, including cross-border collaborative provisions.

10.4.3 Transfer of Students

Evaluation on Benchmarked Standards

- Appraise the criteria and mechanisms to enable students to transfer to another programme.
- Comment on the evaluation procedures to determine the comparability of achievement of incoming transfer students.

Evaluation on Enhanced Standards

- Comment on how the department facilitates national and transnational student mobility.

10.4.4 Student Support Services and Co-curricular Activities

Evaluation on Benchmarked Standards

- Evaluate the adequacy and quality of student support services. How

do they contribute to the quality of student life?

- Comment on the operation and accessibility of the loan office. Are students' needs met by loans and scholarships? Does the HEP provide financial aid through its own resources?
- How are health services and professional counselling made available and information about them disseminated to the students?
- How and how frequently are student support services evaluated?
- If there are programmes conducted in campuses that are geographically separated, how is student support supplied at the branch campuses? How well do these mechanisms work?
- Appraise the mechanisms for complaints and appeals on student support services.
- Which unit is responsible for planning and implementing student support services? How does it fit into the overall structure of the organization in terms of hierarchy and authority? How qualified are the staff of this unit? Who does the head of this unit report to?
- Comment on the measures to ensure that adequate personal and academic counselling are provided and confidentiality maintained. Comment on the availability of an early warning system to detect students facing academic difficulty. Are these measures effective?
- Appraise the orientation of incoming students.

Evaluation on Enhanced Standards

- How prominent are the student support services compared to other major administrative areas within the HEP?
- How does counselling monitor student progress and address personal and social needs? How is the effectiveness of student counselling and support programmes measured?
- Analyze the development plans to upgrade the skills and professionalism of counsellors.

10.4.5 Student Representation and Participation

Evaluation on Benchmarked Standards

- How does the department ensure that student participation and representation are in tandem with the HEP's policy?
- How are students encouraged to participate in matters affecting their welfare? What are the opportunities made available to students to participate in academic and non-academic activities?

Evaluation on Enhanced Standards

- How is the acquisition of student skills and experiences promoted through student activities and organizations, and how are they facilitated by the department?
- Comment on the policy regarding student publication.
- Are the facilities to encourage student involvement in publication activities adequate? How does the department ensure this?

10.4.6 Alumni

Evaluation on Benchmarked Standards

- Not applicable.

Evaluation on Enhanced Standards

- Comment on how the department networks with its alumni.
- Indicate how the alumni assist the students in preparing for their professional future, in providing the linkages with industry and the profession. How involved is the alumni in curriculum development?

Evaluation on Area 5: Academic Staff

10.5.1 Recruitment and Management

Evaluation on Benchmarked Standards

- Comment on the policies on qualifications, responsibilities, expertise and incentives.
- Appraise the academic staff selection policy. How does staff selection include recognition of academic and non-academic achievements, work experience, and peer recognition?
- Assess the appropriateness of the ratio of the academic staff to

student. Confirm whether the department has enough academic staff necessary to implement the programme.

- How does the department clarify the varied roles of the academic staff in teaching, research, consultancy, community service and administrative functions?
- Comment on the policies and procedures on work distribution. Is the workload fairly distributed?
- Evaluate the policies and procedures for recognizing and rewarding the academic staff. How are they implemented?
- How are the academic staff appraised? How does this appraisal take into account their involvement in professional, academic and other relevant activities, at national and international levels?
- What role does the department play in the academic appointment and promotion exercise of the HEP, for example, in the appointment of Professors and Associate Professors? In playing that role, how does the department take into account national policy and international best practices on such matters?

Evaluation on Enhanced Standards

- How does the department ensure and encourage diversity among the academic staff in terms of experience, approaches, and backgrounds?
- Evaluate the nature and extent of the national and international linkages and how these enhance teaching and learning of the programme.

10.5.2 Service and Development

Evaluation on Benchmarked Standards

- How does the department's policy on service, development and appraisal of the academic staff complement that of the HEP's?
- Evaluate the suitability of the academic staff appraisal. Does the appraisal take into account participation in all relevant activities?
- Comment on the extent and effectiveness of the academic staff development scheme.

- Do the academic staff members participate in departmental decision-making? How?
- Comment on the opportunities for communication among academic staff members and on activities that promote collegiality.
- How is formative guidance and mentoring provided for new academic staff? How effective is it?
- Comment on the organized support available to assist academic staff to develop teaching skills in line with current trends in pedagogy, curriculum design, instructional materials, and assessment.
- Evaluate the mechanisms available for training academic staff to use information and communication technology for self-learning, for access to information and for communication.
- How does the department ensure that part-time academic staff possesses the required skills to teach and evaluate students?

Evaluation on Enhanced Standards

- How does the department support participation of academic staff in national and international activities?
- How useful is this participation for the enrichment of the learning experience?
- Comment on the extent of research activities in the department by looking into the number of academic staff members who are principal investigators, the value of research grants, and the priority areas for research.
- Evaluate the provisions on advanced development for academic staff.

Evaluation on Area 6: Educational Resources

10.6.1 Physical Facilities

Evaluation on Benchmarked Standards

- What measures are taken to ensure that the academic staff has sufficient and appropriate physical facilities for effective delivery of

the curriculum?

- How do the physical facilities correspond with health and safety needs of the programme and comply with the relevant laws?
- Evaluate the mechanism that ensures student and academic staff input to the administration on matters of library policy and procedures.
- Evaluate the adequacy of the library hours, services, holdings, staff and facilities. Does it meet the needs of students and academic staff?
- Evaluate the adequacy and suitability of study and small-group discussion space in and around the library.
- Comment on the quality of the library's automated databases and bibliographic search, computer and audio-visual capabilities in relation to the programme.
- Evaluate how adequately stocked the library is in relation to the programme.
- Comment on the adequacy on equipments and facilities provided for practical-based programmes and how are these adequately met.
- Comment on the policies regarding the selection and effective use of computers, internal and external networks and other effective means of using information and communication technology in the educational programme.
- Are there adequate information communication technology facilities to support the student and the academic staff in teaching and learning activities? How effective is the use of computer assisted learning as an integral part of the programme delivery?
- What resources are available to assist the academic staff identify or develop educational software?

- To what extent are the resources utilized to cultivate self-learning behaviour?

Evaluation on Enhanced Standards

- How is the students' learning environment regularly improved to keep up with the developments in educational practices and changes in society?
- Assess how suitable and up-to-date are the facilities and services provided to ensure its quality and appropriateness for current education and training.
- Evaluate how students are provided access to various and most current methods to obtain information.
- How appropriate are the facilities provided for students with special needs?

10.6.2 Research and Development

(Please note that the standards on Research and Development are largely directed to universities offering degree level programmes and above.)

Evaluation on Benchmarked Standards

- State if there is policy and programme on research and development. How does the department policy foster the relationship between research and scholarly activity and education?
- What are the research priorities and facilities provided?
- How is the interaction between research and education reflected in the curriculum? How does it influence current teaching, and prepare students for engagement in research, scholarship and development?

Evaluation on Enhanced Standards

- How does the HEP link between research, development and commercialization?
- How does the department review its research resources and facilities? Comment on the steps taken to enhance its research capabilities.

10.6.3 Educational Expertise

Evaluation on Benchmarked Standards

- Appraise the policies and practices on the use of educational expertise in the development of curriculum and new teaching and assessment methods.

Evaluation on Enhanced Standards

- Comment on how expert access is provided and utilized by the department for staff development and educational research in the programme.

10.6.4 Educational Exchanges

Evaluation on Benchmarked Standards

- Evaluate the policy compliance of the department on educational exchanges. Comment on the dissemination of the policy to the student and faculty.

Evaluation on Enhanced Standards

- Comment on the effectiveness of the policies, arrangements and support by the department to promote educational exchanges. How do the educational exchanges benefit the students and the department?

10.6.5 Financial Allocation

Evaluation on Benchmarked Standards

- Comment on the guidance given by the HEP to the department on its responsibilities and line of authority with respect to budgeting and resource allocation.
- Evaluate the budgetary policies and procurement procedures to maintain high quality of the programme.
- Are there indications that the quality of the programme is being compromised by budgetary constraints?
- If there is a current or potential fiscal imbalance in this regard, does the HEP have a credible plan to address it?

Evaluation on Enhanced Standards

- Comment on the extent of the autonomy given to those responsible for the programme to appropriately allocate the resources.

Evaluation on Area 7: Programme Monitoring and Review

10.7.1 Mechanisms for Programme Monitoring and Review

Evaluation on Benchmarked Standards

- How are various aspects of student performance and progression analyzed in relation to the objectives, curriculum and the learning outcomes of the programme?
- Evaluate the effectiveness of the processes, procedures and mechanisms for monitoring and reviewing the curriculum.
- How do the findings from curriculum review utilized in the improvement of the programme?
- Comment on the structure and workings of the programme review committee. Does the review involve teachers and students?
- In collaborative arrangements, evaluate the relationship between the HEPs involved in aspects of programme monitoring and review.

Evaluation on Enhanced Standards

- How are stakeholders' feedback reviewed and implemented?
- How do the HEP's internal self-review processes and mechanisms improve the programme?

10.7.2 Involvement of Stakeholders

Evaluation on Benchmarked Standards

- How does the department ensure the involvement of principal stakeholders in programme review and communicate the outcomes to them?
- Comment on the extent of stakeholder involvement in programme evaluation and development and the mechanisms used by the department to consider their views.

Evaluation on Enhanced Standards

- How are programme reviews made accessible to stakeholders and their views used for future programme development?

- Comment on the involvement of professional bodies and associations in programme monitoring and review.

Evaluation on Area 8: Leadership, Governance and Administration

10.8.1 Governance

Evaluation on Benchmarked Standards

- How does the department ensure that its official policies and practices are consistent with the statements of purpose of the HEP?
- Comment on the governance structures and functions of the department and their relationships within the department defined. How are these communicated to all levels of management based on principles of transparency, accountability and authority?
- Comment on the structure and composition of the committee responsible for the educational programmes.
- How is the effectiveness of the principal standing committees evaluated?
- Describe the role of the academic leadership and its relationship with the academic staff and students in the department. Evaluate the effectiveness of these relationships and note any problems.
- Describe the leadership support for, and commitment to, the programme. Are the academic staffing adequate and the division of responsibility reasonable, effective and understood by the academic staff members and students?
- If this programme is conducted in campuses that are geographically separated, comment on the administrative relationship between the main campus and the branch campuses.
- If this programme is conducted in campuses that are geographically separated, what mechanisms exist to assure functional integration and achieve comparability of educational quality and the evaluation of students across various sites of instruction?

Evaluation on Enhanced Standards

- Comment on the comprehensiveness and effectiveness of the

committee system in the department and how it utilizes consultation and feedback for programme development.

- How are relevant stakeholders represented in committees in the department?

10.8.2 Academic Leadership of the Programme

Evaluation on Benchmarked Standards

- Evaluate the criteria for the appointment of academic leadership and their responsibilities for the programme.
- Appraise the academic leadership of the programme and comment on the appropriateness and suitability of its credentials and its authority for programme design and delivery.
- Comment on the tenure for academic leaders and its periodic review. Note vacancies or long-standing acting or interim arrangements.
- Comment on the mechanisms and processes to allow for communication between the programme and the HEP leadership.

Evaluation on Enhanced Standards

- Evaluate how the performances of the programme leaders are evaluated.
- How does the academic leader create the conducive environment for innovation and creativity in the department?

10.8.3 Administrative and Management Staff

Evaluation on Benchmarked Standards

- Evaluate mechanisms that are in place to evaluate the appropriateness and sufficiency of the administrative staff to support the implementation of the programme.
- Evaluate how the department reviews the performance of the administrative and management staff of the programme.

Evaluation on Enhanced Standards

- Evaluate the effectiveness of the training scheme and how it fulfils the needs of the programme.

10.8.4 Academic Records

Evaluation on Benchmarked Standards

- Comment on the consistency of the department policies and practices on security of academic records in relation to HEP's policies.
- Evaluate on the implementation of the policy on privacy and the confidentiality of records.

Evaluation on Enhanced Standards

- Comment on the effectiveness of the department review of its policies on security of records and safety system.

Evaluation on Area 9: Continual Quality Improvement

10.9.1 Quality Improvement

Evaluation on Benchmarked Standards

- How does the department support and complement the HEP's attempt to ensure continuous quality improvement?
- How are the recommendations of the programme review implemented? How do they contribute to the improvement of the programme?
- Critically comment on what the department is doing to ensure and enhance quality of the programme.
- What are the contributions of significant stakeholders in the continual quality improvement of the programme?

Evaluation on Enhanced Standards

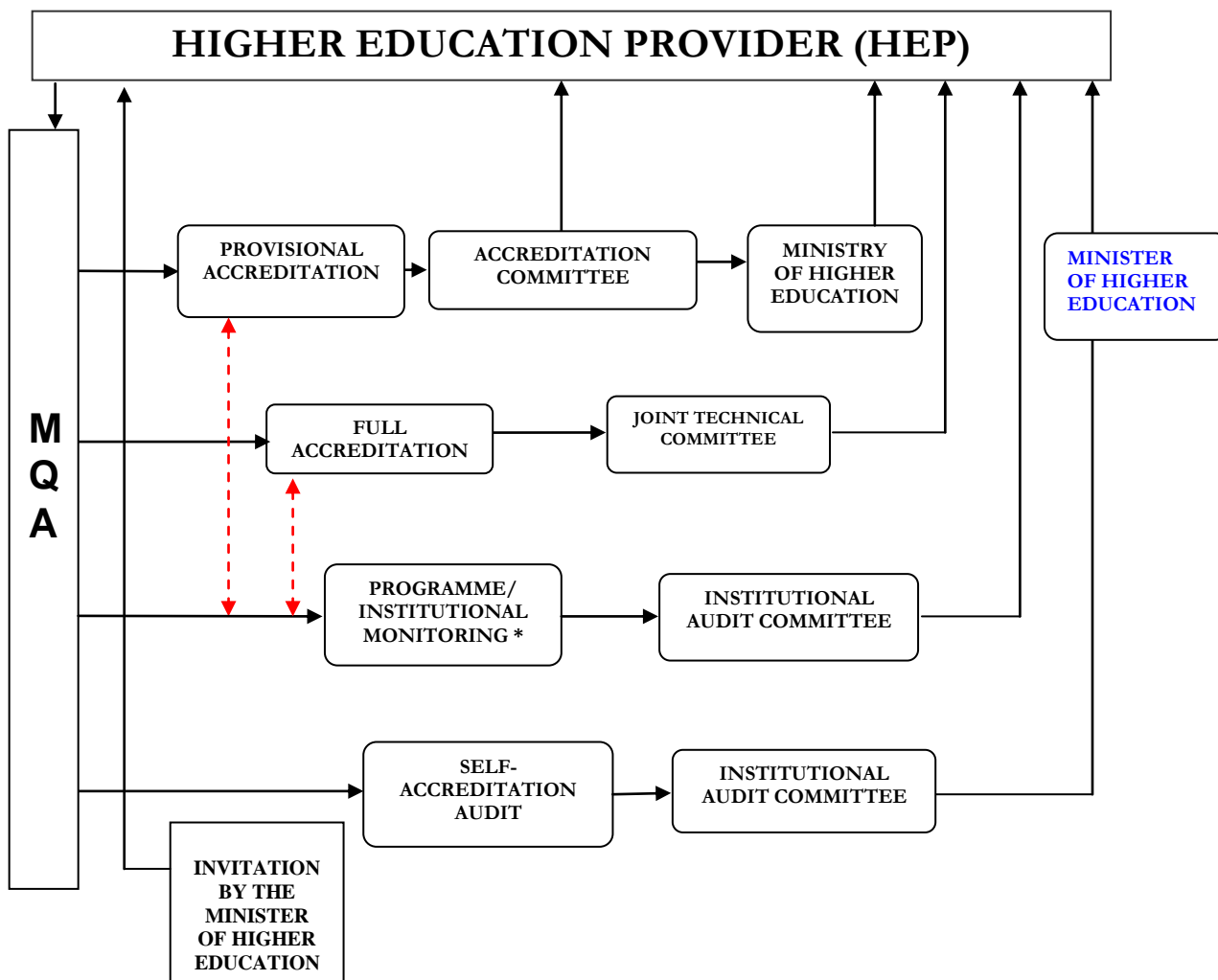
- Assess the role and the effectiveness of the person or unit responsible for the internal quality assurance of the department. Assess his/its status vis-a-vis other units in the department.
- Assess how the department drives the spirit of quality and encourages a shared vision of quality imbued learning environment among all its constituents.

Appendices

Appendices: to Code of Practice for Programme. (Flow charts)

Appendix i

THE QUALITY ASSURANCE PROCESS: AN OVERVIEW

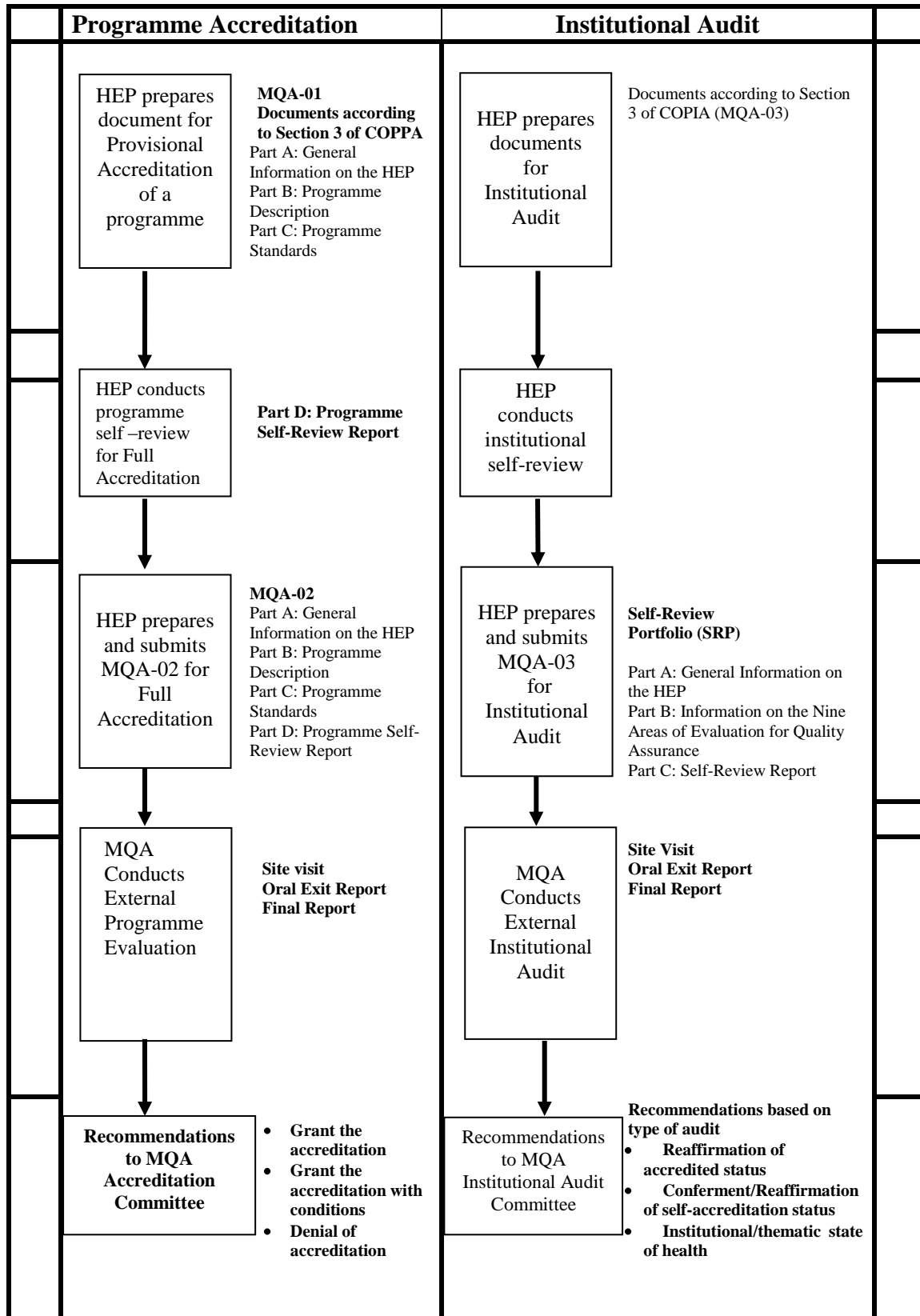


* Monitoring shall be triggered by one or more of the following:

1. Set duration for monitoring;
2. Request by stakeholder;
3. As part of Provisional or Full Accreditation, where required; and
4. Any other factor that necessitates monitoring.

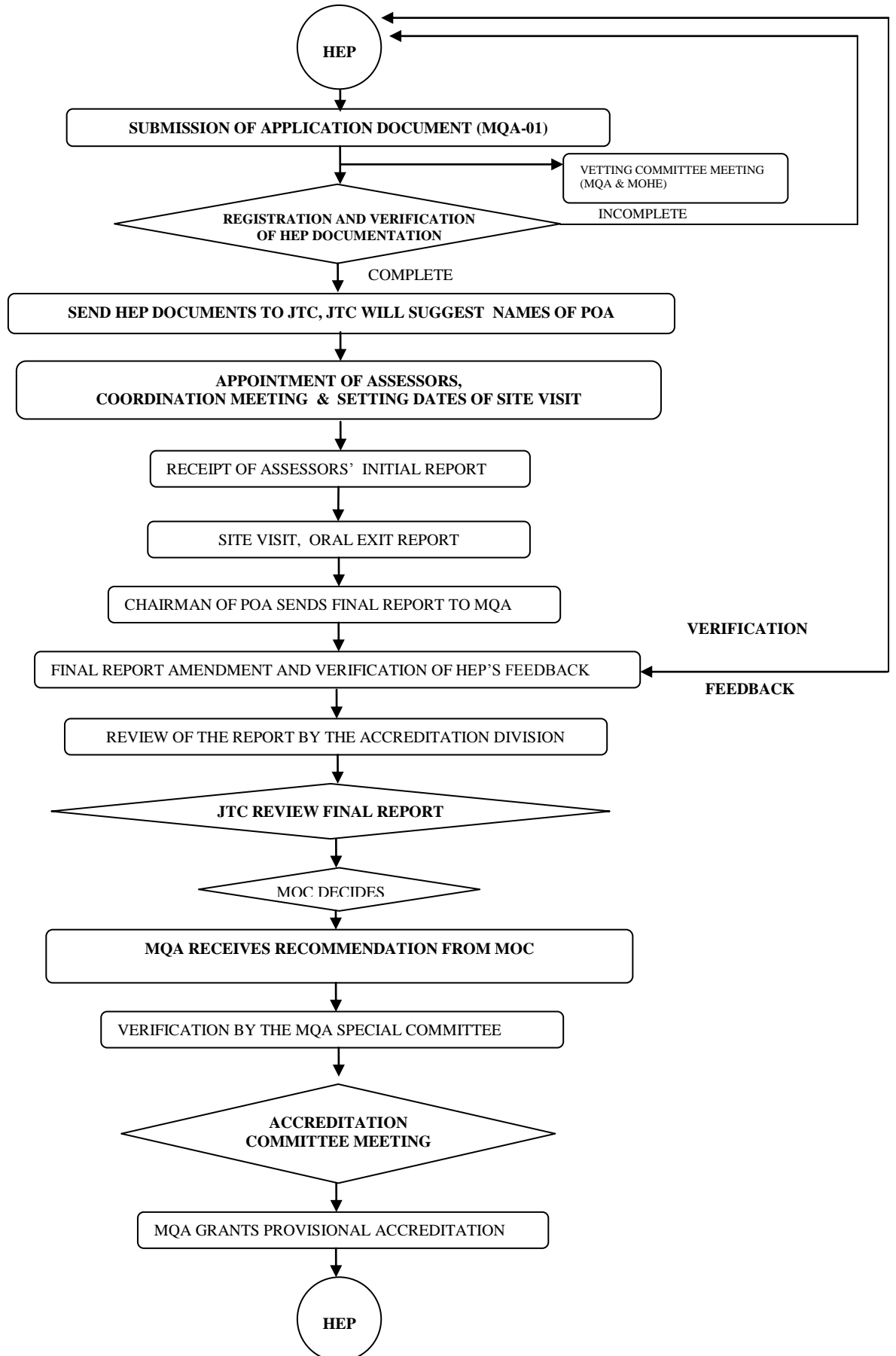
Appendix ii

GENERAL COMPARISON OF PROGRAMME ACCREDITATION AND INSTITUTIONAL AUDIT PROCESSES



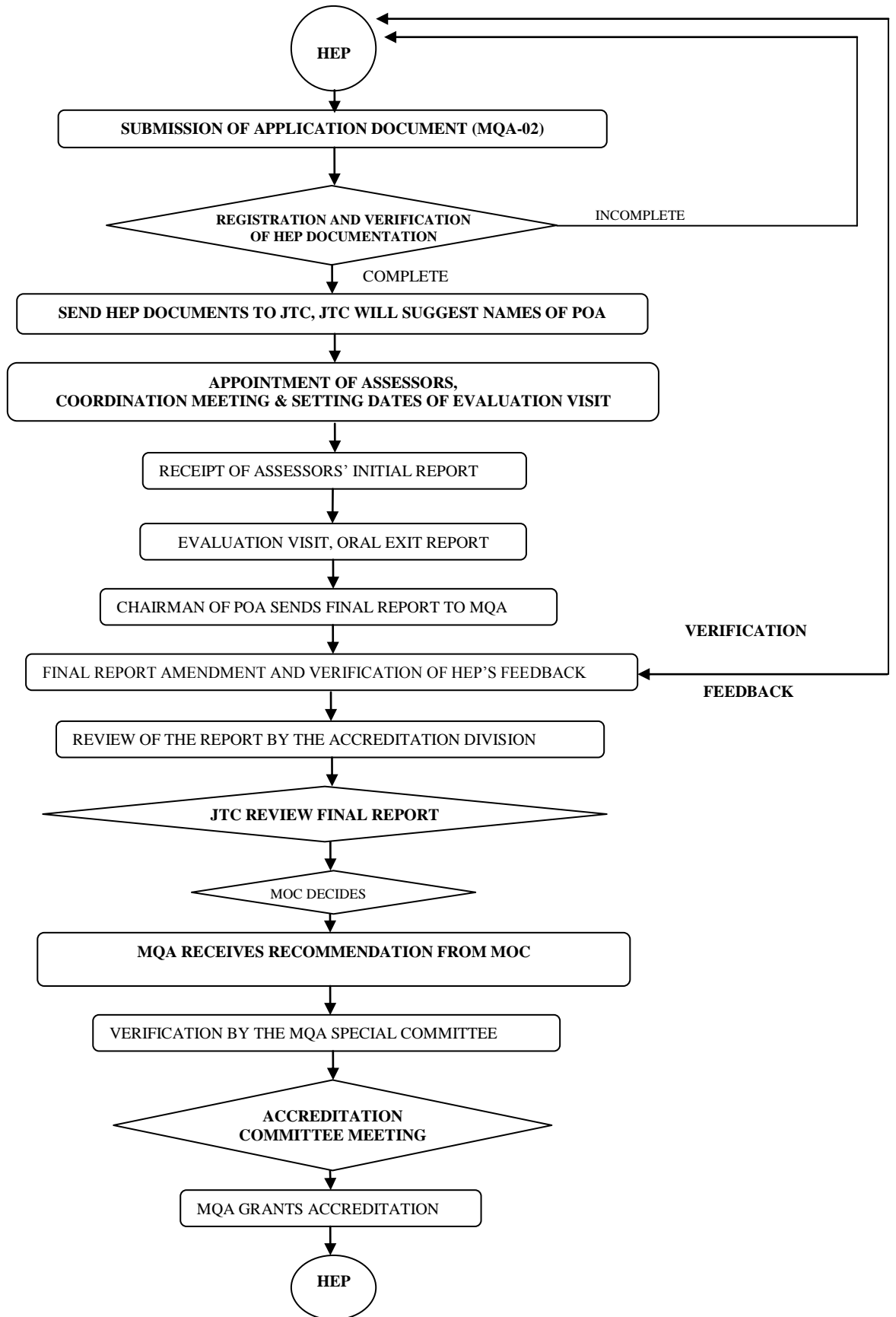
Appendix iii

FLOW CHART FOR PROVISIONAL ACCREDITATION PROCESS



Appendix iv

FLOW CHART FOR ACCREDITATION PROCESS



1. Opticianry/Optomery Programme Standards

1.1 Introduction

This document, produced by The Ministry of Health Malaysia and Malaysian Optical Council in collaboration with Malaysian Qualifications Agency (MQA), recommends standards that are in line with national and international practices. It is aimed at facilitating Malaysian Higher Education Providers (HEPs) to attain minimum standard and to stimulate them to continuously improve their optometry or opticianry programmes in support of the national aspiration of making Malaysia the regional centre for excellence in education.

These guidelines are designed to encourage diversity of approach within a framework that is compatible with national and global human resource requirements and the socio-economic needs of the optometry or opticianry community. It is the basis in evaluating optometry or opticianry programmes and works as a benchmark or programme specification in institutional audit. The standards define requirements for programmes at Certificate, Diploma and Degree levels in broad outlines, within which individual HEPs can creatively design their programme of study and appropriately allocate and use resources in accordance with their stated vision, mission, educational goals and learning outcomes. Critical thinking shall be integral part of the learning process. Respective institutions will be responsible to incorporate this aspect into the curriculum.

For the purpose of this document, optometry or opticianry is defined as follows:

Optical Technologist

This is an individual who holds a dispensing certificate or its equivalent and is able to:

1. perform optical laboratory functions; and
2. aid in the dispensation of spectacles, under the supervision of a registered practitioner.

Optician

This is an individual who holds a diploma in opticianry or its equivalent and is able to:

1. perform optical laboratory functions; and

2. prescribe and dispense spectacles of clients aged eight years and above.

Optometrist

This is an individual who holds a degree in optometry or its equivalent and is able to:

1. perform optical laboratory functions;
2. prescribe and dispense spectacles;
3. prescribe and dispense contact lenses; and
4. provide comprehensive eye and vision care.

In this document

Optical Technology refers to the skills required in the edging and mounting of lenses and aiding registered practitioners in the dispensing of spectacles.

Opticianry is a practice of vision care that is regulated (licensed/registered) and includes the testing of eyesight of clients aged eight years and above, prescription and dispensation of spectacles which includes the styling of frame and lens type and conducts measurement related to the dispensing of lenses.

Optometry is a healthcare profession that is regulated (licensed/registered) and optometrists are primary healthcare practitioners of the visual system who provide comprehensive eye and vision care, which include the detection/diagnosis and management of ocular disorders.

This document describes eight of the nine Quality Assurance Areas. It does not include QA area one: Institutional vision mission, as it does not directly refer to the institution. However, institutions must ensure that the Programme's Aims and Objectives reflect the institution's vision and mission. The eight areas discussed herewith are called elements and these are:

- Element 1: Programme's aims and objectives
- Element 2: Programme Learning Outcomes
- Element 3: Programme Design
- Element 4: Student Entry
- Element 5: Student Assessment
- Element 6: Staff Recruitment

Element 7: Educational Resources
Element 8: Continuous Quality Improvement

These are further subdivided into the various levels of programmes, namely Certificate, Diploma, Bachelor, Masters and Doctoral. These reflect the MQF levels 3, 4, 6, 7 and 8 respectively. This Standard and Criteria for Opticianry and Optometry Programmes functions as a general guideline to MQA officers, programme assessors, Higher Education Providers and auditors. Institutions may in the quest of providing the best services for its students opt to achieve a higher standard.

ELEMENT 1: Programme's aims and objectives

Certificate in Optical Technology

To produce graduates who:

- a. can edge lens and assist in the dispensing of spectacles
- b. possess knowledge on basic optics of the eye;
- c. understand the differences on types of materials, design of ophthalmic lenses and spectacle frames;
- d. can verify the specifications of spectacles
- e. can use appropriate instrumentation related to dispensing
- f. are able to communicate effectively with clients and caregivers.

Diploma in Opticianry

To produce graduates who:

- a. can edge lens and assist in the dispensing of spectacles;
- b. possess knowledge on the anatomy, functions and optics of the eye;
- c. understand the differences on types of materials, design of ophthalmic lenses and spectacle frames;
- d. can verify the specifications of spectacles;
- e. can use appropriate instrumentation related to dispensing;
- f. can prescribe and dispense glasses for patient aged 8 years and above;
- g. are able to communicate effectively with the clients and caregivers and
- h. have acquired relevant technical skills in ophthalmic instrumentation.

Graduate Diploma in Optometry

To produce graduates who:

- a. examine eyes for disorders and dysfunction of vision and the visual system, and provide appropriate management for such conditions;
- b. examine eyes for the purpose of detecting ocular diseases and systemic problems with ocular manifestations at the primary care level and provide the appropriate referral of such conditions;
- c. prescribe, edge, fit and dispense all optical appliances;

- d. prescribe and institute vision therapy for conditions that afflict the binocular coordination of the two eyes;
- e. prescribe and institute rehabilitation programs for patients with low vision conditions;
- f. advise and manage vision problems related to the work place and sports; and
- g. function as techno-preneurs who combine professional clinical services with the dispensing of appropriate optical appliances.

Bachelor of Optometry

To produce graduates who can

- a. examine eyes for disorders and dysfunction of vision and the visual system, and provide appropriate management for such conditions;
- b. examine eyes for the purpose of detecting ocular diseases and systemic problems with ocular manifestations at the primary care level and provide the appropriate referral of such conditions;
- c. prescribe, edge, fit and dispense all optical appliances;
- d. prescribe and institute vision therapy for conditions that afflict the binocular coordination of the two eyes;
- e. prescribe and institute rehabilitation programs for patients with low vision conditions;
- f. advise and manage vision problems related to the work place and sports;
- g. participate in the research and development activities in the area of optics and vision science;
- h. function as techno-preneurs who combine professional clinical services with the dispensing of appropriate optical appliances.

Clinical Masters

To produce graduates who:

- a. deliver primary eye care, in the detection and diagnosis of ocular conditions;
- b. enhance theoretical and clinical knowledge of specifically chosen subspecialties of optometry;
- c. critically and analytically deliver primary eye care;
- d. can produce scholarly work pertaining to a particular clinical area of optometry independently;
- e. can function effectively, ethically and professionally within the profession of optometry.

Research Masters

To produce graduates who:

- a. possess a body of knowledge in sub-specialties in vision sciences;
- b. can produce scholarly work independently;
- c. possess critical and analytical skills;
- d. function ethically and professionally.

Clinical Doctorate

To produce graduates who:

- a. possess an enhanced theoretical and clinical knowledge of specifically chosen subspecialties of optometry;
- b. are clinically competent in the advanced clinical care of patients within subspecialty areas of optometry;
- c. can produce scholarly work pertaining to particular clinical areas of optometry independently;
- d. possess critical and analytical skills, particularly in evaluating issues relating to the care of patients with vision problems;
- e. can conduct independent clinical research;
- f. can contribute to the development of new knowledge in optometry;
- g. can take a leadership role in contributing to the development of optometric education and professional advancement;
- h. can function effectively, ethically and professionally with clear leadership qualities within the profession of optometry.

Research Doctorate

To produce graduates who:

- a. can conduct independent research and sub specialize in a particular area of vision sciences;
- b. can contribute to the development of new knowledge in vision science;
- c. possess critical and analytical skills, particularly in evaluating issues relating to the care of patients with vision problems;
- d. can produce scholarly work independently;
- e. can function effectively, ethically and professionally in the practice of optometry;
- f. can take a leadership role in contributing to the development of optometric education and professional advancement.

ELEMENT 2: Programme Learning Outcomes

Certificate in Optical Technology

At the end of the program, graduates are able to:

- a. assist in the dispensing of spectacles;
- b. demonstrate good understanding of facial structures;
- c. demonstrate good understanding of basic geometrical optics of the eye and ophthalmic lenses;
- d. do measurement, dispensing and edging of ophthalmic lens, as well as frame adjustment;
- e. give basic information on appropriate spectacle frame types and materials, and lens forms and materials;
- f. communicate effectively with the clients;

Diploma in Opticianry

At the end of the program, graduates are able to:

- a. prescribe and dispense glasses for patients aged 8 years and above;
- b. perform non cycloplegic refraction and prescribe spectacles for patients aged 8 years and above;
- c. demonstrate good understanding on the anatomy, function and optics of the eye;
- d. do basic measurement, dispensing and edging of ophthalmic lens, as well as frame adjustment;
- e. interpret and dispense a prescription using appropriate lenses in accordance with the facial and frame measurements;
- f. advise on appropriate spectacle frame types and materials, and lens forms and materials;
- g. assess vision and fundamental binocular status in all patients;
- h. recognize conditions and symptoms requiring referral and/or emergency referral;
- i. use technologies in the examination of the eye;
- j. communicate effectively with the patient;
- k. conduct oneself professionally and ethically.

Graduate Diploma in Optometry

At the end of the program, graduates are able to:

- a. prescribe and dispense glasses;
- b. prescribe and dispense contact lens;
- c. perform cycloplegic and non-cycloplegic refraction, prescribe, and dispense appropriate optical appliances, including low vision aids;
- d. perform examination of the eye and related structures;
- e. identify and manage abnormalities of the visual system;
- f. assess and manage patients with anomalies of binocular vision;
- g. recognize condition for relevant referral;
- h. promote eye health;
- i. participate in screening programmes in the prevention of blindness;
- j. communicate effectively with the clients and peers;
- k. demonstrate an understanding of how an ophthalmic business is run;
- l. demonstrate professional conduct and the legal aspects of professional practice;
- m. apply the rational deductive clinical reasoning, including problem identification/clarification.

Bachelors

At the completion of the course, graduates are able to:

- a. prescribe and dispense glasses;
- b. prescribe and dispense contact lens;
- c. perform cycloplegic and non-cycloplegic refraction, prescribe, and dispense appropriate optical appliances, including low vision aids;
- d. perform an examination of the eye and related structures;
- e. identify and manage abnormalities of the visual system;
- f. assess and manage patients with anomalies of binocular vision;
- g. recognize condition for relevant referral;
- h. promote eye health;
- i. participate in screening programmes in the prevention of blindness;
- j. communicate effectively with the patient and with professional colleagues;
- k. demonstrate an understanding of how an ophthalmic business is run;
- l. demonstrate professional conduct and the legal aspects of professional practice;
- m. apply the rational deductive clinical reasoning, including problem identification/clarification;
- n. carry out guided research in vision science.

Clinical Masters

At the end of the program graduates are able to:

- a. analyze and evaluate critically fundamental principles of the subject matter related to sub-specialty in optometry and apply them to the detection, recognition, diagnosis, prevention and management of a range of optometric conditions of primary or secondary origin;
- b. perform general human eye examinations to detect, measure/ critically assess and manage /treat abnormalities encountered in optometry practice safely and competently in relation to the following subspecialties:
 - i. Advanced Clinical Optometry
 - ii. In any or any combination of other sub-specialties as listed below:
 - Low Vision
 - Contact Lenses
 - Binocular Vision
 - Paediatric Optometry
 - Public Health Optometry (ergonomics, industry)
 - Ocular Therapeutics (*follow Appendix v*)
 - Geriatric Optometry;
- c. demonstrate critical thinking through the application of rational deductive clinical reasoning;
- d. demonstrate an evidence-based approach to clinical decision-making and problem-solving, through ability to identify, analyze and interpret evidence;
- e. demonstrate enhanced awareness in research;
- f. communicate effectively with patients and other health care professionals;
- g. demonstrate an ability to produce critical scientific writing;

- h. demonstrate appropriate attitudes, ethical understanding and legal responsibilities;
- i. demonstrate professionalism through integration and collaboration.

Research Masters

At the completion of the programme graduates are able to:

- a. Conduct original investigations into selected areas in Vision Sciences or Clinical Optometry independently using fundamental skills of research;
- b. Participate in the creation of new knowledge or information of significance in Vision Sciences or Clinical Optometry through the application of good research methodology;
- c. Assess and appraise the scientific basis of current and future developments in Optometry & Vision Sciences as a whole;
- d. Become instructors or teachers of Optometry degree programmes.

Doctorate

Clinical Doctorate

At the end of the program students are able to:

- a. critically analyze and evaluate fundamental principles of clinical science that are of particular relevance and importance in the delivery of primary eye care, diagnostically and therapeutically;
- b. perform advanced diagnostic procedures in the context of delivering comprehensive primary eye care safely and competently, whilst showing knowledge of the management of ocular conditions that are prevalent in the primary care setting;
- c. show an enhanced understanding of the theoretical and practical aspects of any two of the following sub disciplines of clinical optometry in addition to the two chosen in the Master Optometry programme: Contact lenses, Binocular vision, Paediatric optometry, Public health, Low vision, Therapeutic and Geriatric Optometry;
- d. perform relevant clinical procedures in the delivery of full optometric care in areas of optometric clinical subspecialty, safely and competently;
- e. demonstrate an evidence-based approach to clinical decision-making i.e. through the ability to identify the best available evidence, and to analyze and interpret such evidence particularly in respect to the treatment of an ocular condition;
- f. demonstrate the ability to produce a comprehensive critically thought-out scientific clinical case write-up of a patient presenting with pathology, or of a patient from a particular subspecialty of clinical optometry;
- g. undertake independent research in a particular area of clinical optometry;
- h. contribute to new knowledge within specific areas of clinical optometry.

Doctorate by Research

At the completion of the programme graduates are able to:

- a. Apply appropriately relevant research methodologies/techniques within Optometry & Vision Sciences in making a distinct contribution to knowledge of fact and/or theory;
- b. Analyze critically and evaluate the validity and applicability of available research findings in specific areas of Optometry & Vision Sciences;
- c. Recognize and validate problems in Optometry & Vision Sciences;
- d. Develop theoretical concepts through original, independent and critical thinking;
- e. Possess or are in awareness of recent advances within Optometry & Vision Sciences as a whole;
- f. Become academic leaders of Optometry degree programmes.

ELEMENT 3: Programme Design

Certificate in Optical Technology

The general areas to be covered in Certificate in Optical Technology are:

- Basic Optics/Geometrics/Physics
- Edging Techniques
- Ophthalmic Lenses
- Frame Designs
- Fundamentals of Visual Optics
- Industrial Placement
- Information and Communication Technology

The specific requirement for each level are as indicated below. However as a general guide, the following should be considered:

- i. as good practice, the certificate in dispensing is taught over a minimum of 3 semesters full time or 6 semesters part time

Credit hours

- i. Minimum Graduating Credits: 60
- ii. Component:
 - a. Compulsory subject– 4-10 credits (10-25%)
 - b. Core – 26-30 credit (55-70%)
 - c. Industrial placement for a minimum 20 credits

Diploma in Opticianry

The general areas to be covered in a typical Diploma in Opticianry

- Dispensing/Ophthalmic Lenses
- Optics/Geometrics/Physics
- Preliminary testing/Techniques
- Theory of Refractometry

- Clinical Practice
- Business Management
- Ocular health Sciences
- Industrial Placement

Basically there must be a consolidation/strengthening of the basic sciences, which are conspicuously lacking in those who enter the diploma programme i.e. entrees from SPM level.

The relevant key subjects (Optics/Basic Clinical Techniques/Vision Science) that are normally covered in the bachelors programme will need to be covered at a superficial level, and stretched over a longer period of time.

There must be a clear emphasis on dispensing subjects and those allied to it. Subjects in the diploma programme should be chosen to reflect the main role of the diploma holder.

The specific requirement for each level are as indicated below. However as a general guide, the following should be considered:

- as good practice, the diploma is taught over a minimum of 6 semesters full time and 9 semesters part time
- Students with credit transfers and exemption may do less semesters by virtue of the exemptions or transfer.

Credit hours

- Minimum Graduating Credits: 100
- Component:
 - University compulsory subject– 9 credits (10%)
 - Core – 81 credit (90%) 500 hours clinical practice including industrial placement for a minimum of 1 month

Graduate Diploma in Optometry

General areas to be covered in Graduate Diploma in Optometry

- Basic Sciences
- Biomedical Sciences (relevant)
- Vision Sciences
- Clinical Optometry
- Clinical Practice (General, Contact Lenses, Binocular Vision, Low Vision, Paediatric Optometry)
- Optometric Sciences
- Industrial Placement

Credit hours

- Minimum graduating credits: 60 credit
- Component:
 - Compulsory Requirements & Faculty requirement - 15%

- b. Core – 85% including practical clinical training 12.5~15% in an optometry practice, hospital or eye centre with at least one Bachelor-qualified Optometrist
- c. Clinical practice including industrial placement for at least 1000 hours

Bachelor of Optometry

General areas to be covered in a typical Bachelors degree in Optometry:

- Basic Sciences
- Biomedical Sciences (relevant)
- Vision Sciences
- Clinical Optometry
- Clinical Practice (General, Contact Lenses, Binocular Vision, Low Vision, Paediatric Optometry)
- Optometric Sciences
- Research/Dissertation
- Industrial Placement

Credit hours

- i. Minimum graduating credits: 140 credit
- ii. Component:
 - a. University Requirements & Faculty requirement - 15%
 - b. Core – 85% including practical clinical training 12.5~15% in an optometry practice, hospital or eye centre with at least one Bachelor-qualified Optometrist
 - c. Clinical practice including industrial placement for at least 1000 hours

Clinical Masters

- i. Structures:
 - a. Minimum of 11/2 year fulltime or 3 years part time
 - b. Structure B –coursework (18 credit) + Research
 - c. Structure C - Coursework –minimum 40 credit inclusive of Project Paper or Case Study

Components:

- a. Core Didactic
 - Clinical sciences that underpin diagnostic primary eye care (48-50 %)
 - Diagnostic procedures in primary eye care (10-12 %)
 - Advanced studies in two areas of optometric clinical subspecialties (28-30 %)
- b. Core Clinical (10-12 %)
 - Patient care in ophthalmologic/primary eye care centers, with an emphasis on execution of diagnostic procedures and clinical decision-making with regard to referral of patients.

Research Masters

Generic Requirements:

- i. Component:
 - a. Core - 50% -60% (of which 75% can be for specialization)
 - b. Electives - 40%-50%
- ii. Structures:
 - a. Structure A – Thesis - Minimum of 11/2 year fulltime or 3 years part time

Clinical Doctorate

Components:

- a. Core Didactic
 - Clinical sciences that underpin therapeutic primary eye care (25-27 %)
 - Advanced diagnostic procedures in primary eye care (5-7 %)
 - Advanced studies in optometric clinical subspecialties (22-25 %)
- b. Core Clinical (10 -15 %)
 - Patient care in ophthalmologic/primary eye care centers, with an emphasis on the full scope of care including examination and management/co-management of eye conditions.
- c. Subspecialty Clinical (9-10 %)
 - Patient care in two chosen optometric subspecialty areas, to be carried out either in optometry-based centers or hospital eye departments.
- d. Clinical Research (inclusive of training in research methods - 20-22 %)

Doctorate by Research

- a. Minimum 2 years fulltime and 4 years part time
- b. Content:
 - i. 50% core and 50% electives
 - ii. Research methodology-Statistics/Quantitative/ Qualitative research to be taught when necessary

ELEMENT 4: Student Entry

Certificate in Optical Technology

- a. minimum 1 credit in Mathematics or Physics and a pass in Biology or Chemistry or General Science at SPM level

Diploma in Opticianry

A minimum of 3 credits in at least 2 of the following subjects: Biology, Physics, Chemistry or Mathematics at SPM or equivalent, including a pass in English.

OR

Certificate in Optical Technology or equivalent

OR

Certificate in Science or equivalent from any recognized institutions.

OR

FBDO or equivalent from any recognized institutions

Graduate Diploma in Optometry

SPM or equivalent

AND

Diploma in Opticianry from recognized institution.

AND

5-7 years post diploma working experience in related field

Bachelor of Optometry

Minimum of 3 credits in at least 2 of the following subjects: Biology, Physics, Chemistry or Mathematics at SPM or equivalent, including a pass in English

AND

STPM with at least 2.50 CGPA or an equivalent

OR

Science Matriculation with at least 2.50 CGPA

OR

Equivalent general foundation (e.g. Canadian Matriculation program)

OR

Diploma in Opticianry from recognized institution.

OR

Diploma in Science or Health Sciences from recognised institution (recognised by Higher Learning Education and MQA)

Masters

- i. Bachelor of Optometry or equivalent with minimum CGPA 2.5 OR Bachelor of Optometry or equivalent with 2 years of working experience
- ii. For Clinical Masters, Bachelor of Optometry with minimum CGPA 2.5 OR Bachelor of Optometry with 2 years of working experience AND candidate must be registered with MOC. (Temporary Practising Certificate for foreigners upon application to MOC)

Doctorate

- i. a recognised Masters degree in relevant field.
- AND
- ii. evidence of ability to do research

ELEMENT 5: Student Assessment

Certificate in Optical Technology

- i. Final Examinations (theory and practical)
- ii. Tests
- iii. Continuous Assessment
- iv. Assignments
- v. Progress Report
- vi. Presentations
- vii. Practical training/Placement Report

Diploma in Opticianry

- i. Final Examinations, Tests
- ii. Continuous Assessment
- iii. Seminars
- iv. Assignments
- v. Progress Report
- vi. Presentations
- vii. Practical training/Placement Report

Graduate Diploma in Optometry

- i. Examinations & Tests
- ii. Practical /clinical examination / OSCE
- iii. Case presentation
- iv. Seminars
- v. Assignments
- vi. Progress Report
- vii. Presentations
- viii. Practical training/Placement Report

Bachelor of Optometry

- i. Examinations & Tests
- ii. Practical /clinical examination / OSCE
- iii. Case presentation
- iv. Seminars
- v. Assignments
- vi. Progress Report
- vii. Presentations
- viii. Dissertations
- ix. Practical training/Placement Report

Masters

- i. Final Examinations
- ii. Practical /clinical examinations / OSCE
- iii. Case presentation
- iv. Seminars
- v. Assignments
- vi. Progress Report
- vii. Presentations (Clinical case report)
- viii. Clinical posting
- ix. Thesis where applicable

Doctorate

- i. Practical /clinical examinations / OSCE
- ii. Case presentation
- iii. Seminars
- iv. Assignments
- v. Progress Report
- vi. Presentations
- vii. Examinations (where appropriate)
- viii. Posting Training/Posting Report
- ix. Thesis
- x. 1 publication or conference paper for research candidate

ELEMENT 6: Staff Recruitment

Preamble

The specific requirement for each level is as indicated below. However as a general guide, it is important to note the following:

- i. The academic leadership must be in the hands of a person with a Doctoral or Masters in Optometry with at least 5 years of work experience in related field.
- ii. A faculty should have a minimum of 60% fulltime staff that forms the core academic resource of the school.

Certificate in Optical Technology

- i. Diploma holders in related field with 5 years relevant experience.
- ii. Lecturers teaching practical subjects must be registered with MOC
- iii. Ratio of staff to students
 - a. practical 1 : 15
 - b. lecture 1 : 20

Diploma in Opticianry

- i. Bachelors Degree in related field and 3 years professional experience.
- ii. Lecturers teaching clinical subject must be registered with MOC
- iii. Ratio of staff to students
 - a. Clinical 1 : 4
 - b. Lecture 1 : 20

Graduate Diploma in Optometry

- i. Masters Degree in a related field with relevant experience.
- ii. For clinical subjects or professional subjects - Bachelors Degree with 5 years professional/clinical experience
- iii. Minimum 20% of academic staff with PhD or a Masters Degree with a minimum of 5 years teaching or professional experience in the related area.
- iv. The higher education provider should not unduly rely on inexperienced staff but strike a balance between experienced and inexperienced lecturers.
- v. Ratio of lecturer to students:

- a. Clinical 1 : 4
- b. Theory 1 : 15

Bachelor of Optometry

- i. Masters Degree in a related field with relevant experience.
- ii. For clinical subjects or professional subjects - Bachelors Degree with 5 years professional/clinical experience
- iii. Minimum 20% of academic staff with PhD or a Masters with a minimum of 5 years teaching or professional experience in the related area.
- iv. The higher education provider should not unduly rely on inexperienced staff but strike a balance between experienced and inexperienced lecturers.
- v. Ratio of lecturer to students:
 - a. Clinical 1 : 4
 - b. Theory 1 : 15

Masters

- i. A Doctoral degree in related field
- ii. Masters in related field with 5 years of professional / research experience
- iii. 1 refereed publication / conference paper every year
- iv. Ratio of staff to students:
 - a. Clinical 1 : 4
 - b. Theory 1 : 8

Doctorate

- i. A Doctoral degree in related field
- ii. A conference paper every 1 year and 1 refereed publication every 2 years
- iii. Ratio of staff to students:1:5

ELEMENT 7: Educational Resources

For all Levels (Diploma – Doctorate)

The Higher Education Provider is required to have the following:

- i. Appropriate collection of books, journals, audiovisual and electronic resources. The proposed collections are mentioned in Appendix i: Educational Resources.
- ii. Computer laboratories with facilities for word processing, spreadsheet, database, and presentation tasks, Internet connection, and online-searching of databases
- iii. Relevant labs and clinic cubicles according to the specializations offered– (*follow Appendix vi: Educational Resources*)

Element 8: Continuous Quality Improvement

For all Levels (Diploma – Doctorate)

The Higher Education Provider is expected to provide evidence of ability to keep pace with changes in the field and requirements of stakeholders. These may be demonstrated by, but not limited to:

- i. Curriculum review, conducted at least once every 4 to 5 years
- ii. Appointment of External Examiners or any other appropriate measures to maintain the quality of student assessment
- iii. Links with industry
- iv. Continuous review of clinical attachment and report
- v. Dialogue sessions with stakeholders (e.g.: student, MOC, MQA, JPA, lecturer, etc) at least once every 2 years.
- vi. Active participation of staff at relevant local and international conferences, seminars and workshops and short courses
- vii. Presentations by invited speakers, local or international
- viii. Organization of conferences, seminars and workshops

Appendices

Appendices: to Opticianry/Optomety Programme Standards

Appendix v

PROGRAM SARJANAMUDA OPTOMETRI, FSKB, UKM

TAHUN 2

NV 2213 FARMAKOLOGI AM

Matlamat kursus ini ialah memberikan pengetahuan kepada pelajar tentang prinsip asas farmakologi yang merangkumi konsep farmakokinetiks dan farmakodinamik. Pelajar juga didedahkan kepada kefahaman mengenai dadah-dadah yang bertindak pada sistem saraf pusat dan sistem sarat autonomik. Selain itu juga disentuh mengenai sistemik farmakologi serta kesan sampingan dadah.

Diakhir kursus pelajar mampu:

1. Mengenalpasti prinsip asas farmakokinetiks dadah.
2. Mengenalpasti cara-cara pemberian dadah, serapan, sebaran dan eksresi dadah.
3. Mengenalpasti prinsip asas mengenai farmakodinamik dadah.
4. Berupaya mengaplikasi pengetahuan asas mengenai sistem saraf autonomik dengan caratindak dadah ke atas sistem tersebut.
5. Mengenalpasti caratindak dadah pada sistem respiratori, gastrousus, reproduktif, jantung, ginjal dan kelenjar endokrin.
6. Mengenalpasti caratindak dadah pada sistem saraf pusat.

TAHUN 3

NV3232 FARMAKOLOGI OKULAR

Kursus ini merupakan kursus lanjutan dari kursus NV2212 Farmakologi am. Kuliah farmakologi okular meliputi prinsip okular farmakologi, okular farmaseutikal, agen kolinergik dan adrenergik okular, pemeriksaan menggunakan agen midriatik dan sikloplegik, anestetik topikal, penggunaan pewarna (dye), larutan penjagaan kanta sentuh, agen anti infektif dan anti inflamatori, dadah anti histamin, anti alergik, anti glaukoma serta kesan sampingan sistemik serta kesan sampingan okular akibat penggunaan dadah untuk rawatan penyakit.

Di akhir kursus pelajar mampu:

1. Memahami konsep asas serta prinsip tindakan dadah okular.
2. Mengenal serta memahami tindakan dadah untuk diagnosis dan rawatan penyakit okular.
3. Mengaplikasi pengetahuan yang diperolehi dalam pengurusan pesakit Optometri.

**PROGRAM SARJANA OPTOMETRI KLINIKAL, FSKB, UKM
NV 6014 OCULAR THERAPEUTICS**

INTRODUCTION

This course seeks to provide the student with knowledge of bio medical sciences in the context of understanding ocular anomalies and disorders. This course contains background necessary to enable the prescription of a range of drugs used in the management of eye diseases when legislation makes this a possibility. This course contains lectures, practical and clinical postings to expose the students with good clinical skills in managing ocular diseases. At the end of the course the student can conduct eye examination and ocular therapeutics safely and analyse the status of the eye.

GRADUATE PROGRAMME OUTCOMES (PO)

- PO1: Analyse and evaluate critically fundamental principles of the subject matter related to sub-speciality in optometry and apply them to the detection, recognition, diagnosis and management of a range of optometric cases of primary or secondary conditions.*
- PO2: Communicate effectively with patients and other health care professionals and develop good teamwork.*
- PO3: Perform advanced eye examinations and critically assess and manage/treat visual dysfunctions encountered in optometry practice safely and competently.*
- PO4: Demonstrate an evidence-based approach to clinical decision making and problem solving by deductive reasoning.*
- PO5: Demonstrate ability to conduct research with minimum supervision.*
- PO6: Demonstrate an ability to use ICT, produce scientific writing and critically review a scientific article.*
- PO7: Demonstrate appropriate attitudes, ethical understanding and legal responsibilities.*
- PO8: Demonstrate professionalism through intergration, collaboration and lifelong learning.*

COURSE LEARNING OUTCOME (CO)

- CO1: To provide an understanding of the pathophysiology of anterior and posterior segment eye disease.*
- CO2: To provide an understanding of the principles of immunology and ocular allergies.*
- CO3: To provide an understanding of ophthalmic microbiology.*
- CO4: To demonstrate an in-depth knowledge of the mode of actions and medical uses of the most common cholinergic, adrenergic, anti-infectives, anti-inflammatory, anti-histamine, analgesics and anesthetic agents.*
- CO5: To provide a detailed explanation of, and differentiate between, external ophthalmic conditions and appropriate management.*

- CO6: *To demonstrate an understanding of the diagnosis and therapeutic management of anterior segment eye conditions.*
- CO7: *To demonstrate an understanding of the diagnosis and therapeutic management of inflammatory eye conditions.*
- CO8: *To demonstrate an understanding of the diagnosis and therapeutic management of infective eye conditions.*
- CO9: *To demonstrate a systematic understanding of the posterior segment eye conditions and appropriate management.*
- CO10: *To demonstrate a critical awareness of the pathology of systemic disease and how diseases affect the eye.*
- CO11: *To provide ability to understand drug safety/toxicity issues which arise.*
- CO12: *To create awareness of the regulatory aspects of drugs licensing, marketing and ethical practice.*

Appendix vi

1.2 EDUCATIONAL RESOURCES

LABORATORIES AND OTHER FACILITIES (as appropriate to the programme and level of qualification)

Number of laboratories

Labs sufficient to meet the following training needs of the students should be available:

- a. Clinical optometry
- b. Visual science and colour vision laboratory
- c. Visual optic lab
- d. Dispensing laboratory
- e. Basic science lab
- f. Contact lens lab

Pre-clinical labs are mandatory. Recommended ratio of refraction cubicles to students is 1 : 3.

ICT AND OTHER FACILITIES

- a. All optometry students must have access to ICT facilities.
- b. Adequate number of tutorial rooms and lecture halls must be available.
- c. The library must have current editions of the books listed or similar. Journals and e-resources as suggested by the lecturer.

IN HOUSE TRAINING CENTRE / HOSPITAL TRAINING

Either the in- house training centre / hospital for clinical training should have the following Clinical Optometry services:

- a. General Optometry services (including)
 - b. Biometry services
 - a. Visual field examination services
 - c. Low Vision services
 - d. Contact Lens services
 - e. Binocular Vision and Orthoptic Services
 - f. Paediatric Optometry services
 - g. Colour Vision services

- h. Dispensing ophthalmic lenses and spectacles (only for in-house training)
- i. Ocular disease

CRITERIA FOR SELECTION OF PLACEMENT CENTRE

1. Detail of the registered practitioner

- a. name
- b. registration number
- c. current APC and PNC
- d. address
- e. work experience
- f. qualification/CV
- g. continuous professional development (CPD) record
- h. disciplinary record

2. Type of services offered

- a. Primary Care
 - i. Refraction
 - ii. Ocular health assessment
- b. Specialty Care

3. Operation hours

4. Workload (at least 5 patients per week over the last 3 months)

5. Continuously accepting students for placement

6. Valid Business Registration

SYLLABUS

The general areas to be covered in a typical Diploma in Opticianry

- 1. Dispensing\Ophthalmic Lenses
- 2. Optics\Geometrics\Physics
- 3. Preliminary testing\Techniques
- 4. Basic Contact Lenses Assisting Techniques
- 5. Theory of Refractometry
- 6. Clinical Practice (General)
- 7. Business Management
- 8. Ocular health Sciences
- 9. Industrial Placement a minimum of 1 month

General areas to be covered in a typical Bachelors degree in Optometry programme

1. Basic Sciences
2. Biomedical Sciences (relevant)
3. Vision Sciences
4. Clinical Optometry
5. Clinical Practice (General, Contact Lenses, Binocular Vision, Low Vision, Paediatric Optometry, Public Health Optometry, Ocular Therapeutic (see *Appendix vi*) and Geriatric Optometry)
6. Optometric Sciences
7. Research\Dissertation
8. Industrial Placement

Placement of students in hospitals, private optometry practice and ophthalmic factories must be included in the programme and each placement must not be less than 4 weeks in duration.

EQUIPMENTS (as appropriate to the programme and level of qualification)

The institutions must take necessary steps to ensure that the equipments are in keeping with the progress of the profession. Below is the list of equipment proposed.

Table 1.1 Proposed list of equipment or equivalent for 40 students.

	EQUIPMENTS	Min. Qty (unit)
1.	A-B Scan	1
2.	Accommodation Rock Cards	1
3.	Accommodative flipper set	4
4.	Adjustable Trial Frame	10
5.	Amsler Grid chart	4
6.	Anomaloscope	1
7.	Slit Lamp Biomicroscope	10
8.	Aperture Rule	1
9.	Aspheric 20D Lens	2
10.	Aspheric Lens 2x	1
11.	Aspheric Lens 3x	1
12.	Aspheric Lens 4x	1
13.	Groover	1
14.	Semi Automated lens edger	1
15.	Autorefractometer	1
16.	Autokeratometer	4
17.	Bagolini Filter Set	1
18.	Bagolini Lenses	1

19.	Binocular Loupe	1 -recommended
20.	Binocular Indirect ophthalmoscope	2
21.	Bjerrum screen	1
22.	Bitz Enhancer-L/V Set	1 recommended
23.	Burton Lamp	10 (1:4)
24.	CAM Stimulator	1 recommended
25.	Cambridge Crowding Acuity Card	1 recommended
26.	Cardiff Acuity Test Card	1
27.	CCTV for Low Vision	1 recommended
28.	Chiroscope	1 recommended
29.	Projection magnifier for SCL	4
30.	Clip On Prism	1 recommended
31.	Anesthesiometer	1 recommended
32.	Colour Vision test –Farnworths D-15	1
33.	Colour Vision test - FM 100 Hue	1
34.	Colour Vision for L/V (D15)	1 recommended
35.	Colour Vision SPP 2 test	1
36.	Colour Vision test – Ishihara Plates	4
37.	Contacto Screen (RGP)	2
38.	Contactscope	1
39.	Corneal Topographer	1
40.	Cross Cylinder (+/- 0.25, +/-0.50,+/-1.00)	20
41.	Diffuser-white glass opal 26-649	2
42.	R-G Goggles	4
43.	Disparometer	1
44.	Dist. Functional Acuity Contrast Test	1
45.	Diagnostic lens (78D, 90D)	1 each
46.	Exophthalmometer	1 (recommended)
47.	Eye Model	1 recommended
48.	Fan Chart, Block and Chevron	5
49.	Focimeter (manual and automatic)	4
50.	Frame Heater	1
51.	Freemann Near Vision	1
52.	Fundus Camera	1
53.	Goldmann 3 Mirror Lens (Goniolens)	1
54.	Goldmann 4 Mirror Lens (Goniolens)	1 recommended
55.	Halberg Trial Clips	10
56.	Hand Edger	1
57.	Hand Magnifier	1
58.	Hess Screen	1
59.	Horopter	1
60.	Humphrey Computerised Perimeter	1
61.	Illuminance Meter	1
62.	Interferometer	1
63.	Interval Timer	3
64.	Iris Diaphragm Lens Holder	5

65.	Keratometer	5
66.	Contact lens trial set	1
67.	Stainless steel bowl	10
68.	Laser He Ne 3mV	1
69.	Layout Maker	1
70.	Grating chart	1
71.	Lee Filter	1
72.	Lens Holder	5
73.	Lens drilling unit	1
74.	Lens tinting unit	1 recommended
75.	Light Source	5
76.	LogMAR Chart	1
77.	Low Contrast Chart	1 recommended
78.	Luminance Colour Meter	1
79.	Maddox Wing	10
80.	Magnetic Stirrer	1 recommended
81.	Mallet Unit	4
82.	Mirrors contact lens	10
83.	Mirrors refraction	10
84.	Model Eye for retinoscopy	10
85.	Near Vision Unit	4 recommended
86.	Neutral Density filter	1
87.	Occluder	10
88.	OKN Drum	1
89.	Ophthalmoscope (direct)	10
90.	Ophthalmic unit with CCTV	1 recommended
91.	Optical Benches 1 m	1
92.	Optical Fibre 3 m Long	1 recommended
93.	Pachymeter	1
94.	Pentorch / penlight	10
95.	Pelli Robson Chart	1
96.	PD Ruler	10
97.	Pachymeter Probe	1
98.	Patient Chair	10
99.	Pattern Maker	1
100.	Pediatric Photorefractor	1 recommended
101.	Phoria Test (Howall Card, Maddox Rod card)	4
102.	Phoropter/Vision Tester	4
103.	Placido Disc	1 recommended
104.	Pliers	2 sets
105.	Polishing Machine	1
106.	Prism (loose)	5 sets
107.	Prism Bar	5 sets
108.	Prism Flipper	4 sets
109.	Projector Chart	1
110.	Pupillometer / PD meter	1

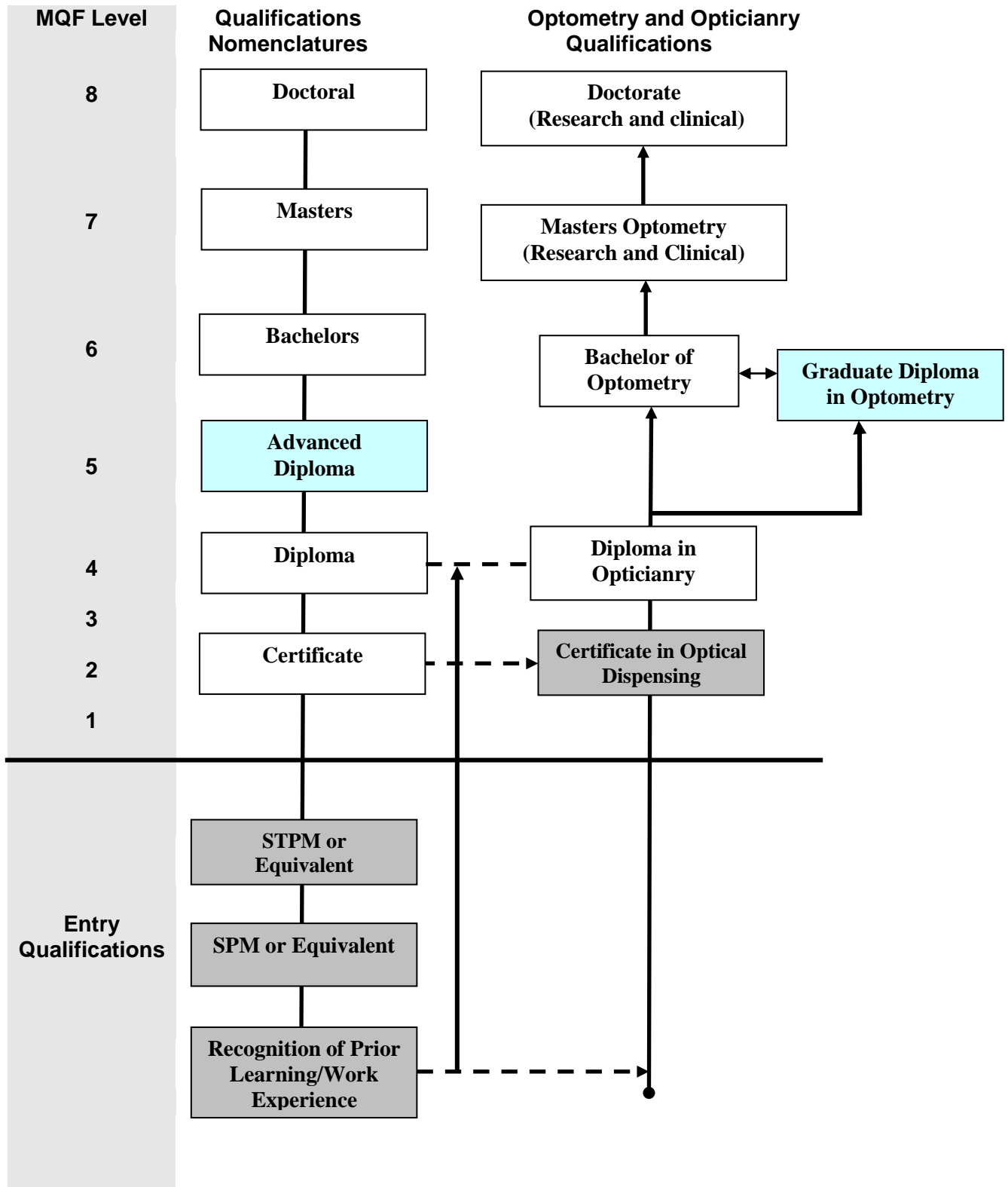
111.	Radiuscope Binocular Gauge	2
112.	RAF Binocular Gauge	10
113.	Random Dot Stereograms	1
114.	Randot Stereo Test	2
115.	Reading Acuity Chart/ near vision test book	10
116.	Retinoscope	10
117.	Retinoscopy rack	2
118.	RGP trial lens	20 pieces
119.	Sheridan Gardiner Acuity Test	2
120.	Skull	1 recommended
121.	Snellen Chart	10
122.	Soft trial lens	20 pieces
123.	Spectrometer Table	1
124.	Lensmeasure	1
125.	Sphygmomanometer	4
126.	Stereofly test	2
127.	Stop watch	5
128.	Synoptophore	1 recommended
129.	Stereoacuity Lang Test	2
130.	Stereoacuity test Frisby	1
131.	Stereoacuity test Randot	2
132.	Stereoacuity test Titmus Fly	2
133.	Stereoacuity test TNO	2
134.	Tearscope	1 recommended
135.	Telescope set	1
136.	Tonometer (Goldman Contact Tonometer)	5
137.	Tonopen (contact tonometer)	1 recommended
138.	Tonometer Perkins (Non-contact)	1 recommended
139.	Tranaglyph	1
140.	Trial Lens Set	10
141.	Tweezer	20
142.	Ultrasonic Cleaner	1 recommended
143.	Variable Density Filter cat No: 35-6816	1 recommended
144.	Variable Density Filter cat No: 36-6832	1 recommended
145.	Variable Vectogram	1 recommended
146.	VEP Imaging System	1 recommended
147.	Worth 4 Dots Test distance	4
148.	Worth 4 Dots Test near	4

Suggestions for other laboratory equipment

Sufficient quantities of glassware and other laboratory equipment should be provided so that students will be able to work independently without having to share.

Appendix vii

OPTOMETRY AND OPTICIANRY EDUCATIONAL PATHWAY



List of References

LIST OF REFERENCE BOOKS: (as and where appropriate and subject to the most recent publication made available)

BIOCHEMISTRY

1. Alberts et al. *Molecular biology of the cell*. Garland, New York, 1994.
2. Campbell, M.K. : *Biochemistry* (2nd edition), Saunders College Publishing, 1995.
3. Champe PC & Harvey RA. *Lippincott's illustrated review: Biochemistry*, 2nd edition. Lippincott,. Philadelphia, 1994.
4. Davis L, Kuehl M & Battey J. *Basic methods in molecular biology*, 2nd edition. Prentice Hall, London, 1994.
5. Devlin TM. *Textbook of biochemistry with clinical correlations*, New York: John Wiley & Sons, 1996.
6. Eric E. Conn, Paul K. Stumpf, George Bruening, Roy H. Doi, *Outlines of Biochemistry*, Wiley, 1987.
7. Lodish H, Baltimore D, Berk A, Zipursky L, Matsudaira P, Darnell J. *Molecular Cell Biology*, 3rd edition. Scientific American, 1995.
8. Lubert Stryer & W.H. Freeman, *Biochemistry*, 1998.
9. Raff LM. *Principles of Physical Chemistry*, Prentice Hall, 2001.
10. Robert K. Murray, Peter A. Mayes, Daryl K. Granna, Victor W. Rodwell., *Harper's Biochemistry*, Appleton & Lange, 1990.
11. Smith CA & Wood EJ. *Molecular biology and biotechnology*. Chapman & Hall, New York, 1991.
12. Stryer, L. *Biochemistry*, 4th edition. New York: WH Freeman & Co., 1995
13. Voet, D., Voet, J.G & Pratt, C.W. : *Fundamentals of Biochemistry*, John Wiley, 1999

14. Werner R. *Essential biochemistry and molecular biology*, 2nd edition. Prentice Hall, London, 1992.
15. Zubay GL, Parson WW & Vance DE. *Principles of biochemistry*. Dubuque: WCB Publishers, 1995.

PHYSIOLOGY

1. Bern RM & Levy MN. *Principles of physiology*, 2nd edition. Mosby Inc., 1996.
2. Ganong WF. *Review of medical physiology*, 20th edition. Appleton & Lange, 2001.
3. Guyton AC. *Textbook of medical physiology*, 10th edition. Saunders, Philadelphia, 2000.
4. Martini FJ,. *Fundamentals of anatomy and physiology*, 4th edition. Prentice Hall, New Jersey, 1998.
5. Saladin KS. *Anatomy and physiology: The unity of form and function*, 2nd edition. McGraw Hill, New York, 2001.
6. Tortora GJ & Anagnostakos NP, *Principles of anatomy and physiology*, 9th edition. Harper & Row, New York, 2000.
7. Van De Graff KM & Fox SL. *Concepts of human anatomy and physiology*, 4th edition. Brown Publ., USA, 1995.
8. Vander AJ, Sherman JH & Luciano DS. *Human Physiology*, 6th edition. McGraw Hill, San Francisco,. 1990.
9. Vander AJ. *Human Physiology. The mechanism of body function*, 7th edition. McGraw-Hill, New York, 1999.
10. West J. Best and Taylor's physiological basis of medical practice, 12th edition. Williams and Wilkins, 1991.

PATHOLOGY

1. Chandrasoma P & Taylor CR. *Concise Pathology*, 6th edition. Appleton & Lange, USA, 2000.
2. Fischbach F. *A Manual of Laboratory & Diagnostic Tests*, 6th edition. Lippincott, New York, 2000.
3. Huether SE. & McCance KL. *Understanding Pathophysiology*. Mosby, St. Louise, 1996.
4. Kumar, V., Conran, R.S. & Robbins, S.L. (1997) *Basic Pathology* 6th edition, Saunders Company, Philadelphia.
5. Rubin, E. (2001) *Essential Pathology*, 3rd edition, Lippincott Williams & Wilkins.
6. Underwood JCE. *General and Systematic Pathology*, 3rd edition. Churchill Livingstone, Edinburgh, 2000.

VISUAL SCIENCE

1. Atchison, d. A. & Smith, G. 2000. *Optics of the human eyes*. Oxford: Butterworth-Heinemann.
2. Birch, J. 2001. *Diagnosis of defective color vision*. 2nd ed. Oxford; Butterworth-Heinemann.
3. Ciuffreda, K. J. 1993. *Eye movement basics for clinician*. St Louis: Mosby
4. Goldstein, E. B. 2002. *Sensation and perception*. 6th ed. Pacific Grove: wadsworth-Thompson learning.
5. Goss, D. A. & West, R. W. 2001. *Introduction to the optics of the human eye*. Boston; Butterworth-Heinemann.
6. Hart, W. M. 1996. *Adler's physiology of the eyes*. 9th ed. St. Louis: The Mosby
7. Hubel, D. H. 1995. *Eye, brain and vision*. New York: Scientific American Press.
8. Keating, M. P. 2002. *Geometrical and Physical Visual Optics*. 2nd ed. Butterworth-Heinemann.
9. Rabbets, R. B. 1998. *Clinical visual optics*. 3rd ed. Oxford: Butterworth-Heinemann.

10. Reading, R. W. 1983. *Binocular Vision foundation and application*. Boston: Butterworth.
11. Schwartz, S. H. 1994. *Visual perception: a clinical orientation*. Norwalk: Appleton & Lange.
12. Solomon, H. 1978. *Binocular Vision A Programmed Text*. London: William Heinemann Medical Books Ltd.
13. Steinman, S. B., Steinman, B. A. Dan Garzia, R. P. 2000. *Foundations of Binocular Vision a Clinical Perspective*. New York. The McGraw Hill Company.
14. Tunnacliffe, A. 1993. *Introduction to visual optics*. 4th ed. London: Association of British Dispensing Opticians.
15. Von Noorden, G.K. 1990. *Binocular Vision and Ocular Motility*. 4th Edition. St. Louis: Mosby Year Book.
16. Wandell, B. A. 1995. *Foundation of vision*. Sunderland: Sinauer Associates.

VISUAL OPTICS

1. Appleton, B. 1990. *Clinical Optics*. Thorofare, N. J.: Slack Inc.
2. Elkington, A. R. Frank, H. J. Greany, M. J. 1999. *Clinical Optics*. 3rd ed. Oxford: Blackwell Science.
3. Emsley, H. H. 1953. *Visual Optics*. 5th ed. London: Butterworth-Heinemann
4. Fannin, T. E. Grosvenor, T. 1996. *Clinical optics*. 2nd ed. Boston: Butterworth-Heinemann.
5. Freeman, M. & Hull, C. *Optics*. 11th ed. Oxford: Butterworth-Heinemann.
6. Hensen, D. B. 1983. *Optometric Instrumentation*. London: Butterworth-Heinemann.
7. Keating, M. P. 2002. *Geometrical and Physical Visual Optics*. 2nd ed. Butterworth-Heinemann.
8. Loshin, D. S. 2002. *The geometrical optics workbook*. 2nd ed. Boston: Butterworth-Heinemann.
9. Michaels, D. D. 1980. *Visual Optics and refraction a clinical approach*. 2nd ed. St. Louis: Mo. C. V. Mosby.
10. Tunnacliffe, A. 1993. *Introduction to visual optics*. 4th ed. London: Association of British Dispensing Opticians.
11. Tunnacliffe, A. H. 1991. *Worked problems in optics*. 2nd ed. London: The Association of British Dispensing Opticians.

CLINICAL OPTOMETRY

1. Benjamin, W. J. 1998. *Borish's clinical refraction*. Ed. 4. Boston: Butterworth-Heinemann.
2. Carlson, N. B. Kurtz, D. & Heath, D. A. 1996. *Clinical procedures for ocular examination*. Stamford: Appleton & Lange.
3. Casser, L. Fingeret, M. Woodcome, H. T. 1997. *Atlas Of Primary Eyecare Procedures*. Ed ke 2. Stamford: Appleton & Lange.
4. Elliot, D. B. 1997. *Clinical procedures in primary eye care*. Oxford: Butterworth-Heinemann.
5. Eskridge, J. B. Amos, J. F. & Bartlett J. D. 1991. *Clinical procedures in optometry*. Philadelphia: J. B. Lippincott.
6. Ettinger, E. R. Rouse, M. w. 1997. *Clinical Decision Making In Optometry*. Boston: Butterworth-Heinemann.
7. Frisen, L. 1990. *Clinical Test Of Vision*. New York: Raven Press.
8. Goss, D. A. 1995. *Ocular Accommodation, Convergence And Fixation Disparity; A Manual Of Clinical Analysis*. Ed. ke 2. Boston: Butterworth-Heinemann.
9. Grosvenor, T. D. 2002. *Primary care optometry*. Ed.4. Boston: Butterworth-Heinemann.
10. Roberts, D. K. Terry, J. E. (eds) 1996. *Ocular Disease: Diagnosis And Treatment* ed. Ke 2. Boston: Butteworth-Heinemann.
11. Van Boemel, G. B. 1999. *Special Skills And Techniques. The Basic Book Shelf For Eyecare Professionals*. Thorofore: Slack.
12. Zadnik, K. 1997. *The Ocular Examination*. Philadelphia: W. B. Saunders.

PRIMARY CARE OPTOMETRY

1. Bezan, D. J. et al. 1999. *Differential Diagnosis In Primary Eye Care*. Boston: Butterworth-Heinemann.
2. Ettinger, E. R. Rouse, M. W. 1997. *Clinical Decision Making In Optometry*. Boston: Butterworth-Heinemann.
3. Grosvenor, T. D. 2002. *Primary care optometry*. Ed.4. Boston: Butterworth-Heinemann.
4. Milder, B. Rubin, M. L. 2004. *The Fine Art Of Prescribing Glasses*. Ed. Gainesville: Traid Pub.
5. Roberts, C. M. 2001. *Quick Consult To Diagnosing And Treating Ocular Disease*. Boston: Butterworth-Heinemann.

6. Werner, D. L. Press, L. J. 2002. *Clinical Pearls In Refractive Care*. Boston: Butterworth-Heinemann.

INDUSTRIAL OPTOMETRY

1. Kleinstein, R. N. 1992. *Environment And Vision: The Effect Of The Environment On The Eye And Vision*. London: Butterworths.
2. Newcomb, R. D. Marshall, E. C. (eds) 1990. *Public Health And Community Optometry*. Ed ke-2. Boston-Heinemann.
3. North, R. V. 2001. *Work And The Eye*. Butterworth-Heinemann.
4. Pitts, D. G. Kleinstein, R. N. 1993. *Environmental Vision. Interactions Of The Eye, Vision, And The Environment*. Butterworth-Heinemann.
5. Sheedy, J. E. (ed) 1990. *Environmental Optics. In: London, R.(Ed) Problems In Optometry*. 2(1). Philadelphia: J. B. Lippincott.

ANATOMY FOR OPTOMETRY

1. Forrester, J. V. 1996. *The Eye: Basic Science In Practice*. London: W. B. Saunders.
2. Forrester, J. V. 2002. *The Eye: Basic Science In Practice*. 2nd ed. London: W. B. Saunders.
3. Oyster, C. W. 1999. *The Human Eye; Structure and Function*. New York: Sinauer Associates.
4. Pipe, D. M. & Rapley, L. J. 1997. *Ocular anatomy and histology*. 2nd ed. Association of British Dispensing Opticians.
5. Remington, L. A. 1998. *Clinical Anatomy of the visual system*. Boston: Butterworth-Heinemann.
6. Snell, R. S. & Lemp, M. A. 1998. *Clinical anatomy of the eye*. 3rd ed. Boston: Blackwell Scientific.
7. Junqueira LC, Carneiro J & Kelly RO. *Basic Histology*, 9th edition. Appleton & Lange, New York, 1998.
8. Martini FJ. *Fundamentals of anatomy and physiology*, 4th edition. Prentice Hall, New Jersey, 1998.
9. Saladin KS. *Anatomy and physiology: The unity of form and function*, 2nd edition. McGraw Hill, New York, 2001
10. Tortora GJ & Anagnostakos NP. *Principles of anatomy and physiology*, 9th edition. Harper & Row, New York, 2000.
11. Van de Graff KM & Fox SL. *Concepts of human anatomy and physiology*, 4th edition. Brown Pub., USA, 1995

OCULAR THERAPEUTICS

1. Bartlett, J. D. & Jaanus, S. D. 2001. *Clinical Ocular Pharmacology*. Ed. Ke 4
Boston: Butterworth-Heinemann
2. Doughty, M. 1999. *Drugs, medications and the eye*. Glasgow:
Smawcastlellane.
3. Hopkins, G. & Pearson, R. 1998. *O'Connor Davies Ophthalmic Drugs*. Ed ke
4. Oxford: Bitterworth-Heinemann
4. Onofrey, B. E. (ed) 1994. *Clinical Optometric pharmacology and therapeutics*.
Philadelphia; J. B. Lippincott.
5. Vale, J. & Gilmartin, B. 2002. *Drugs And The Eye*. Ed. Ke 4. Oxford:
Butterworth-Heinemann.

OPHTHALMIC OPTIC AND DISPENSING

1. Brooks. C. W. 2003. *Essentials of ophthalmic lens finishing*. 2nd ed. Oxford:
Butterworth-Heinemann.
2. Clifford, W. B. Irving, M. B. 1996. *System for ophthalmic dispensing*. 2nd ed.
Elsevier Health Sciences.
3. Jalie, M. O. 2003. *Ophthalmic lenses & dispensing*. 2nd ed. Oxford:
Butterworth-Heinemann.
4. Ralph, D. 1979. *Professional Ophthalmic Dispensing*. Chicago: Professional
Press.
5. Ralph, D. 1990. *Ophthalmic Dispensing: The Present Day Realities*. Boston:
Butterworth.
6. Russel, L. S. 1979. *Ophthalmic Dispensing*. 3rd ed. Springfield: Thomas.
7. Wakefield, K. G. 2000. *Bennet's ophthalmic prescription work*. 4th ed. Oxford:
Butterworth-Heinemann.
8. Zelada, A. J. J. 1987. *Dispensing optician manual for the new Ophthalmic
Technician*. Charles C Thomas Publisher Limited.

CONTACT LENS PRACTICE

1. Anthony, M. 1981. *Contact lens design tables for the determination of surface
radii of curvature of hard contact lenses to give a required axial edge lift*.
London: Butterworth.
2. Bennet, E. S. & Henry, V. A. 2000. *Clinical Manual Of Contact Lenses*. Ed. Ke
2. Philadelphia: Lippincott Williama & Wilkins.

3. Bennet, E. S. & Weissman, B. A. *Clinical Contact Lens Practice*. Philadelphia: Lippincott-Raven.
4. Daniels, K. 1999. *Contact lenses*. Thorofare, NJ: Slack Incorporated.
5. Douthwaite, W. A. 1995. *Contact lens optics and lens design*. 2nd ed. Oxford: Butterworth-Heinemann.
6. Douthwaite, W. A. 2006. *Contact lens optics and lens design*. 3rd ed. Edinburgh, New York: Elsevier Butterworth-Heinemann.
7. Efron, N. 1999. *Contact lens complication*. Oxford: Butterworth-Heinemann.
8. Efron, N. 2002. *Contact lens practice*. Oxford: Butterworth-Heinemann.
9. Fletcher, R. Luigi, L. Rossi, A. L. 1994. *Contact lens practice a clinical guide*. Oxford: Blackwell Scientific Publications.
10. Gasset, A. R. 1976. *Contact lenses and corneal disease a programmed course*. New York: Appleton Century-Crofts.
11. Gasson, A. Morris, J. 1992. *The contact lens manual: a practical fitting guide*. Oxford: Butterworth-Heinemann.
12. Gasson, A. Morris, J. 1998. *The contact lens manual: a practical fitting guide*. 2nd ed. Oxford: Butterworth-Heinemann.
13. Harris, M. G. 1996. *Contact lenses: treatment options for ocular disease*. St. Louis: Mosby.
14. Harris, M. G. London, R. 1997. *Contact lenses for pre- and post-surgery*. St. Louis: Mosby.
15. Hom, M. M. 1997. *Manual Of Contact Lens Prescribing And Fitting*. Boston: Butterworth-Heinemann.
16. Jones, L. W. & Jones, D. A. 2000. *Common Contact Lens Complications: Their Recognition And Management*. Oxford: Butterworth-Heinemann
17. Lee, J. R. 1986. *Contact lens handbook*. Philadelphia: W. B. Saunders.
18. Lester, B. L. 1974. *Contact lens technique: a concise and comprehensive textbook for practitioners and students*. New York: Lester Beacher.
19. Lowther, G. E. 1997. *Dryness, tears and contact lens wear*. Boston: Butterworth-Heinemann.
20. Mandell, R. B. 1980. *Contact lens practice*. 3rd ed. Springfield Charles C. Thomas
21. Norman, B. 1977. *Contact lens correction by Norman Bier and Gerald Eugene Lowther*. 3rd ed. London: Butterworth.
22. Philip, M. *Contact lens complications [computer file]: an interactive multimedia tool/produced by Philip Morgan*. original concept by Nathan Efron. Oxford: Butterworth-Heinemann.

23. Roth, H. W. 2003. *Contact lens complications: etiology, pathogenesis, prevention, therapy / Hans-Walter Roth*. Stuttgart: Thieme.
24. Ruben, M. Guillon, M. 1994. *Contact lens practice*. 1stedd. London: Chapman & Hall Medical.
25. Stein, H. A. 1997. *Contact lenses fundamentals and clinical use*. Thorofare, N.J.: Slack Inc.
26. Stone, J. Philips, A. J. Speedwell, L. 1997. *Contact lenses*. 4th ed. Oxford: Butterworth-Heinemann
27. Weinstock, F. J. 1989. *Contact lens fitting: a clinical text atlas*. Philadelphia: Lippincott.

METHOD AND RESEARCH ETHICS

1. Alred, G. J. Brusaw, C. T. Oliu, W. E. 2003. *The Handbook Of Technical Writing*. 7th ed. St.Martins Press.
2. Armitage, P. 1994. *Statistical Methods In Medical Research*. Ed. Ke 3. Oxford: Blackwell.
3. Armitage, P. 2001. *Statistical Methods In Medical Research*. Ed. Ke 4. Oxford: Blackwell.
4. Dawson, B. Trapp, R. G. 2001. *Basic & Clinical Biostatistic*. 3rd ed. New York: Lange Medical Books/McGraw-Hill.
5. Dowdy, S. Wearden, S. 2004. *Statistic For Research*. 3rd ed. Edinburgh: John Wiley and Son.
6. Forthofer, R. N. & Lee, E. S. 1995. *A Guide To Design Analysis And Discovery*. New York: Academic Press.
7. Gooman, D. 1998. *Report It In Writing (Large Print)*. Prentice Hall.
8. Hatch, S. W. 1998. *Ophthalmic research and epidemiology*. Boston: Butterworth-Heinemann.
9. Miller, J. L. Cohen, R. F. 2001. *Reason To Write. Strategies For Success In Academic Writing*. Oxford: Oxford University Press.
10. Morais, E. 2000. *Reading, Thinking and Writing in an ESL Context*. The Beacon Press Sdn. Bhd.
11. Norell, S. E. 1993. *A Short Course In Epidemiology*. New York: Raven Press
12. Oshima, A. Hogue, A. 1997. *Introduction To Academy Writing*. New York: Longman.
13. Polgar, S. Thomas, S. A. 1995. *Introduction To Research In Health Sciences*. 3rd ed. Melbourne: Churchill Livingston.

14. Sanders, B. D. & Trapp, R. G. 1994. *Basic & Clinical Biostatistic*. London: Appleton & Lange.
15. Seely, J. 2000. *The Oxford Guide to Writing and Speaking*. Oxford: Oxford University Press.
16. Van Emden, J. Esteal, J. 1996. *Technical Writing And Speaking: An Introduction*. McGraw Hill Book Co. Ltd.

BINOCULAR VISION

1. Birnbaum, M. H. 1993. *Optometric Management of Near Point Vision Disorders*. Boston: Butterworth-Heinemann.
2. Caloroso, E. E, Rouse, M. W & Cotter, S. A. *Clinical Management of Strabismus*. 1993. 1st Edition. Butterworth-Heinemann
3. Eperjesi, F. Rundström, M. M. 2004. *Practical Binocular Vision Assessment*. Edinburgh: Butterworth Heinemann.
4. Evans B & Doshi S. 2001. *Binocular Vision & Orthoptics: Investigation and Management*. London: BH Optician.
5. Evans, B. J. W. 2002. *Pickwell's Binocular Vision Anomalies: Investigation And Treatment*. Ed ke 4. Oxford: Elsevier/ Butterworth-Heinemann.
6. Goss, D. A. 1995. *Ocular Accommodation, Convergence, and Fixation Disparity : A Manual of Clinical Analysis*. Ed. ke 2. Boston: Butterworth-Heinemann.
7. Griffin, J. R. 1982. *Binocular anomalies: procedures for vision therapy*. 2nd.ed. Chicago: Profesional Press.
8. Griffin, J. R. Grisham, J. D. 1995. *Binocular anomalies: diagnosis and vision therapy*. 3nd.ed. Boston: Butterworth-Heinemann.
9. Leigh, R. J. & Zee, D. S. 1991. *The neurology of eye movements*. Ed. Ke-2. Philadelphia: F.A. Davis Company
10. Mein, J & Trimble R. 1991. *Diagnosis and Management of Ocular Motility Disorders*. 2nd edition. Blackwell Scientific Publication.
11. Pickwell, D. 1989. *Binocular Vision Anomalies: Investigation and Trreatment*. London: Butterworth.
12. Press L.J. 1997. *Applied concept in vision therapy*. St. Louis: Mosby.
13. Prieto-Diaz J & Sauza-Diaz C. 2002. *Strabismus*. 4th edition. Boston- Butterworth-Heinemann.
14. Reading, R. W. 1983. *Binocular Vision foundation and application*. Boston: Butterworth.

15. Rosenbaum, A.L. & Santiago, A. P. 1999. *Clinical Strabismus: management principles and surgical techniques*. Philadelphia: W. B. Saunders Company.
16. Rowe, F. 2004. *Clinical Orthoptics*. 2nd ed. Oxford: Blackwell Publication.
17. Rutstein, R. D. & Daum, K. M. 1998. *Anomalies of binocular vision: diagnosis and management*. St. Louis: Mosby.
18. Scheimann, M. & Wick, B. 1993. *Clinical management of binocular vision*. Philadelphia: J. B. Lippincott.
19. Scheimann, M. & Wick, B. 2002. *Clinical Management of Binocular Vision Heterophoric, Accommodative and Eye Movement Disorders* Ed. Ke-2. Philadelphia: Lippincott Williams & Wilkins.
20. Solomon, H. 1978. *Binocular Vision A Programmed Text*. London: William Heinemann Medical Books Ltd.
21. Steinman, S. B., Steinman, B. A. Dan Garzia, R. P. 2000. *Foundations of Binocular Vision a Clinical Perspective*. New York. The McGraw Hill Company.
22. Stidwill D. 1998. *Orthoptic Assessment and Management*. 2nd Edition. Oxford: Blackwell Science.
23. Von Noorden, G.K. 1990. *Binocular Vision and Ocular Motility*. 4th Edition. St. Louis: Mosby Year Book.
24. Von Noorden, G.K. 1996. *Binocular Vision and Ocular Motility*. 5th Edition. St. Louis: Mosby Year Book.
25. Wright, K.W. Spiegel, P.H. 2003. *Pediatric Ophthalmology and Strabismus*, New York: Springer.

OCULAR DISEASES

1. Bankes, J. L. K. 1982. *Clinical ophthalmology: a text and colour atlas*. Edinburgh: Churchill Livingstone.
2. Chong-Lye Ang et al. 2005. *Clinical ophthalmology: an Asian perspective*. Singapore: Saunders.
3. Doxanas, M. T. Richard, L. A. 1984. *Clinical orbital anatomy*. Baltimore: William & Wilkins.
4. Kanski, J. J. 1996. *Clinical ophthalmology*. Oxford: Butterworth-Heinemann.
5. Kanski, J. J. 1999. *Clinical Ophthalmology*. Oxford: Butterworth-Heinemann.
6. Kanski, J. J. 2002. *Clinical ophthalmology: a test yourself atlas*. 2nd ed. Oxford: Butterworth-Heinemann.
7. Khaw, P. T. Elkington. A. R. 2003. *ABC of eyes*. British Medical Association.
8. Lim & Constable. 1997. *Colour Atlas of Ophthalmology*. 2nd ed. PG Publishing.

9. Miller, S. 1987. *Clinical ophthalmology*. Bristol: wright.
10. Pitts, C. R. Khaw, P. T. 2003. *A textbook of clinical ophthalmology: a practical guide to disorders of the eyes and their management*. 3rd ed. River Edge, New Jersey: World Scientific.
11. Roberts D.K. Terry, J. E. 1996. *Ocular disease diagnosis and treatment*. Boston: Butterworth-Heinemann.
12. Spalton, D. J. Hitchings, R. A. Hunter, P. A. 1984. *Atlas of clinical ophthalmology*. Edinburgh: Churchill Livingstone.
13. Spalton, D. J. Hitchings, R. A. Hunter, P. A. 2005. *Atlas of clinical ophthalmology*. 3rd ed. Philadelphia: Elsevier Mosby.

VISUAL PERCEPTION

1. Birch, J. 2001. *Diagnosis Of Defective Of Colour Vision*. 2nd ed. Oxford: Butterworth-Heinemann.
2. Bruce, V. Green, P. R. Georgeson, M. A. 1996. *Visual Perception: Physiology, Psychology, And Ecology*. 3rd ed. Hove, East Sussex, UK: Psychology Press.
3. Bruce, V. Green, P. R. Georgeson, M. A. 2003. *Visual Perception: Physiology, Psychology, And Ecology*. 4th ed. Hove, East Sussex, UK: Psychology Press.
4. Buckingham, T. 1993. *Visual Problem in Childhood*. Oxford: Butterworth-Heinemann.
5. Caelli, T. 1981. *Visual Perception Theory And Practice*. Oxford: Pergamon Press.
6. Geoffrey, T. Kleeman. L. 2006. *Visual Perception And Robotic Manipulation : 3D Object Recognition, Tracking And Hand Eye Coordination*. Berlin: Springer.
7. Goldstein, E. B. 2002. *Sensation And Perception*. 6th ed. Pacific Groove: Wardworth-Thompson Learning.
8. Gregory, R. L. 1973. *Visual Perception*. London: Oxford University Press.
9. Hubel, D. H. 1995. *Eye, Brain and Vision*. New York: Scientific American Press.
10. Nicholas, W. Swanston, M. T. 2001. *Visual Perception: An Introduction*. Hove: Psychology Press.
11. Schwartz, S. H. 1999. *Visual Perception: A Clinical Orientation*. 2nd ed. Stamford: Appleton & Lange.

12. Schwartz, S. H. 2004. *Visual Perception: A Clinical Orientation*. 3rd ed. New York: McGraw-Hill, Health Pub. Division.
13. Wandell, B. A. 1995. *Foundation Of Vision*. Sunderland: Sinauer Associates.
14. William, A. M. Davids, K. Williams, J. G. 1999. *Visual Perception and Action in Sport*. London: E & FN Spon.

PAEDIATRIC OPTOMETRY

1. Barnard, S. Edgar, D. 1996. *Paediatric Eye Care*. Oxford: Blackwell Science.
2. Buckingham, T. 1991. *Visual Problems In Childhood*. London: Butterworth-Heinemann.
3. Leat, S. J. Shute, R. H. Westall, C. A. 1999. *Assessing Children's Vision: A Handbook*. Oxford: Butterworth-Heinemann.
4. Moore, B. D. 1997. *Eye Care For Infants And Young Children*. Boston: Butterworth-Heinemann.
5. Moore, B. D. 1997. *Eye care Of The Infant And Toddler*. Boston: Butterworth-Heinemann.
6. Press, L. J. Moore, B. D. 1993. *Clinical Paediatric Optometry*. Boston: Butterworth-Heinemann.
7. Rosenbloom, A. A. Morgan, M. W. 1990. *Principles And Practice Of Paediatric Optometry*. Philadelphia: J. B.
8. Rosner, J. Rosner, J. 1990. *Paediatric Optometry*. Boston: Butterworth-Heinemann.

GERIATRIC OPTOMETRY

1. 1999. *Eye Care For The Elderly: A Slide Script Program In The Series Eye Care Skills For The Primary Care Physician*. San Francisco, California: The foundation of the american academy of ophthalmology.
2. Aston, S. J. Maino, J. H. 1993. *Clinical Geriatric Eye Care*. London: Butterworth_Heinemann.
3. Brilliant, R. 1997. *Essential Of Low Vision Practice*. Boston: Butterworth-Heinemann.
4. Dickinson, C. 1998. *Low vision principles and practice*. Oxford: Butterworth-Heinemann.
5. Elkowitz, E. B. 1981. *Geriatric Medicine For The Primary Care Practitioner*. New York: Springer Publication.

6. Freeman, P. B. Jose, R. T. 1997. *The Art and Practice of Low Vision*. Ed. Ke 2. London: Butterworth-Heinemann.
7. Garret, Gill. 1990. *Older People Their Support And Care*. Houndmills Macmillan.
8. Gray, L. et al. 1991. *Geriatric Medicine: A Pocket Book For Doctors, Nurses, Other Health Professionals And Students*. 2nd ed. Melbourne: Ausmed.
9. Melore, G. G. 1997. *Treating Vision Problems In The Older Adult*. Mosby's *Optometric Problem-Solving Series*. St. Louis: Mosby.
10. Nowakowski, R. 1995. *Primary Low Vision*. Stamford: Appleton & Lange.
11. Rosenbloom, A. A. Morgan, M. W. 1993. *Vision and Aging*. London: Bitterworth-Heinemann.

PROFESSIONAL STUDY

1. Appler, T. V. Dennis, R. P. Muth, E. P. White, D. R. 1999. *Management For Optician*. 2nd ed. Boston: Butterworth-Heinemann.
2. Bailey, R. N. Heitman, E. 2000. *An Optometrist's guide to clinical ethics*. American Optometric Association. St. Louis: Missouri.
3. Bennet, I. 2003. *Optometric Practice Management*. 2nd ed. Boston: Butterworth-Heinemann.
4. Classe, J. G. Hisaka, C. Kamen, R. D. Rounds, R. S. Thal, L. S. 2004. *Business Aspects For Optometry*. Boston: Butterworth-Heinemann.
5. *Code of Practice for Optometriss and Opticians*. Malaysian Optical Council.
6. General Optical Council Optician's Handbook.2005. *Opticians Act 1989*. London: Geerings of Ashford Ltd.
7. Hirji, N. 1999. *Business Awareness For Optometrist*. Boston: Butterworth-Heinemann.
8. Malayan Law Journal Sdn. Bhd. 2001. *Laws of Malaysia: Optical Act 1991*. Kuala Lumpur: Percetakan Nasional Berhad.
9. Malaysian Optical Council Handbook.

PSYCHOLOGY IN OPTOMETRY

1. Baron, R. A. 1992. *Psychology*. 2nd ed. Boston Allyn and Bacon.
2. Bourne, L. E. ekstrand, B. R. 1985. *Psychology: Its Principles and Meanings*. Tokyo: Holt-Saunders.
3. Cardwell, M. 2003. *Schaum's A-Z Psychology*. New York: McGraw-Hill.
4. Darley, J. M. Glucksberg, S. Ronald, A. K. 1991. *Psychology*. 5th ed. Englewood Cliffs, N. J.: Prentice-Hall.

5. Davis, S. F. Palladino, J. J. 2007. *Psychology*. 5th ed. Upper Saddle River, N. J. : Prentice Hall.
6. Lindgren, H. C. Byrne, D. 1975. *Psychology: An Introduction To A Behavioral Science*. 4th ed. Wiley: New York.
7. Nevid, J. S. 2003. *Psychology: Concepts And Applications*. Boston, MA: Houghton Mifflin.
8. Shute, R. H. 1991. *Psychology in vision care*. Oxford: Butterworth-Heinemann.
9. Wade, C. Tavis, C. 2003. *Psychology*. 7th ed. Upper Saddle River, New Jersey: Prentice Hall.
10. Wortman, C. B. Loftus, E. F. Weaver, C. 1999. *Psychology*. 5th ed. Boston: McGraw-Hill.
11. Zimbardo, P. G. Johnson, R. L. Weber, A. L. 2006. *Psychology: Core Concept*. 5th ed. Boston: Allyn and Bacon.

LIST OF JOURNALS

1. Senarai Journal Optometri/Sains Penglihatan
2. Acta Ophthalmologica
3. American Journal of Optometry And Physiological Optics
4. American Journal of Ophthalmology
5. American Orthoptic Journal
6. British Journal of Ophthalmology
7. British Orthoptic Journal
8. Clinical & Experimental Ophthalmology
9. Clinical and Experimental Optometry
10. Eye
11. Investigative Ophthalmology
12. Journal of Cataract and Refractive Surgery
13. Journal of American Association of Pediatric Ophthalmology and Strabismus
14. Journal of Pediatric Ophthalmology and Strabismus
15. Journal of American Optometry Association
16. Journal of Visual Impairment
17. Ophthalmic and Physiological Optics
18. Ophthalmic Plastic and Reconstructive Surgery
19. Ophthalmic Research
20. Ophthalmologica

21. Ophthalmology Clinics of North America
22. Ophthalmology Management
23. Optometric Management
24. Optometry : Journal of the American Optometric Association
25. Optometry And Vision Science
26. Optometry Today
27. Vision Research

LIST OF E-RESOURCE

Blackwell Synergy

Information in Medical and Nursing.

Emerald Fulltext

Fulltext articles to journals published by MCB University Press. Information on management, business and library

iMD - Images.MD

InfoPoems – Daily Doses of Knowledge

JAMIA - Journal of the American Medical Informatics Association

Journal Citation Reports

Comprehensive resource to information on journal impact factor from over 7,500 scholarly and technical journals.

JSTOR

JSTOR is a not-for-profit organization which offers researchers the ability to retrieve high-resolution, scanned images of journal issues and pages as they were originally designed, printed, and illustrated. The journals archived in JSTOR span many disciplines. Full text access to Arts and Sciences I (119 titles), Arts and Sciences II (125 titles) and Language and Literature (58 titles)McGraw-Hill's Access Medicine

MD-Consult

Information in medical.

Medline & Ovid

Abstracts and full texts from medical journals.

ProQuest Medical Library

Information in medical.

ISI Web of Science

Access *ISI Web of Science* covers *Science Citation Index Expanded (SCIE)*, *Social Sciences Citation Index (SSCI)*, and *Arts & Humanities Citation Index (AHCI)*.

My EndNote Web

EndNote Web assist researcher and student collect and organize references. Nature Encyclopedia of Life Sciences

Oxford Journals

Full text access to over 180 academic and research journals published by Oxford University Press. The collections cover Life Sciences, Mathematics & Physical Sciences, Medicine, Social Sciences, Humanities, and Law, and include some of the most authoritative journals in their fields.

ProQuest Dissertations & Theses

Abstracts of dissertations throughout the world. 24 pages free access to latest dissertations.

Science Direct

Information mainly in science area. Full text access to journals published by Elsevier Science , Academic Press and Harcourt.

SCOPUS

Scopus is the largest abstract and citation database of research literature and quality web sources. It is designed to find the information scientists need. Quick, easy and comprehensive, Scopus provides superior support of the literature research process. Updated daily, Scopus offers 15,000 peer-reviewed journals from more than 4,000 publishers (over 1000 Open Access journals, 500 conference proceedings, over 600 trade publications), 33 millions abstracts, results from 386 million scientific web pages, 21 millions patent records from 5 patent offices, seamless links to library, full text articles and other library resources. - Source; SCOPUS site (10th Nov 2007)

Springer e-Books

Online access for Springer e-Books collection in scientific, technical and medical subject .

SpringerLink

Full text to 400 journal titles published by Springer Verlag and Kluwer in various areas - Chemistry, Computer science, Economy, Engineering, Environment, Geosciences, Law, Biology, Mathematics, Physics and Astronomy (1995 and above).Thieme- Electronic Book Library

A- to- Z

Journal list which is linked to databases subscribed by the library.

EBSCOhost

Full text information in various fields. Title of databases includes: Academic Search Elite, Business Source Premier, Eric, Health Business Fulltext Elite, MAS Ultra School Edition, Medline, Nursing & Allied Health Collection: Comprehensive, PsycINFO, PsycARTICLES, Psychology and Behavioral Sciences Collection and MAS Ultra - Public Library Edition.

INSIDE

British Library collection. Bibliographic information in all subject areas. Full text access via Interlibrary Loan within 10 working days of request.

Thomson Micromedex

Ulrich's Periodicals Directory

Bibliographic database completed with world serial publication and covers all subject.

AccessScience (<http://www.accessscience.com/>) **Amazon.com**
(<http://www.amazon.com>)

Annual Review 1999 (<http://www.annurev.org/>)

Applied Crystallography Online (<http://journals.iucr.org>)

Applied Technologies (<http://www.apptech.com>)

BioMed Central (<http://biomedcentral.com/libraries>)

Books in Print (<http://www.booksinprint.com>)

BULB (<http://bubl.ac.uk>)

Bureau van Dijk (<http://bankscope.bvdep.com>)

CRC's Chemnetbase (<http://www.chemnetbase.com>)

Encyclopedia Americana (<http://www.go.grolier.com/>)

Euromoney (<http://www.securities.com>)

Free E-Journal (<http://www.press.umich.edu:80/jep/>)

Haworth Press (<http://haworthpressinc.com>)

HireWire Press (<http://highwire.stanford.edu/lists/freeart.dtl>)

Ingenta Journals Online (<http://www.ingenta.com>)

ISINET (<http://www.isinet.com>)

JBC Online (<http://www.jbc.org>)

Malay World Studies Database (<http://www.atma.ukm.my>)

Multimedia Encyclopedia (<http://go.grolier.com/go-ol/static/features/gmefeatrs.htm>)

NISC (<http://www.nisc.com>)

Online Encyclopedia (<http://www.encyclopedia.com/>)

Oxford Reference Online (<http://www.oxfordreference.com>)

PhysicsWeb (<http://physicsweb.org/>)

Polymer Library (<http://axiom.iop.org/ramicus>)

Research Bank Web (<http://www.bschoo1-investext.com>)

Safari Tech Books Online (<http://proquest.safaribooksonline.com/?unicode=ukm>)

SCIRUS (<http://www.scirus.com>)

Ulrichsweb (<http://www.ulrichsweb.com>)

Wiley (<http://www.interscience.wiley.com>)

World Bank (<http://publications.worldbank.org/WDI>)

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