National Commission for Academic Accreditation & Assessment

National Qualifications Framework for Higher Education in the Kingdom of Saudi Arabia

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1. Introduction

The growing size and diversity of the post secondary system has increased the need to ensure clear and common understanding of the knowledge and skill developed by students with qualifications from different institutions. This is important for students who must have confidence in what they will know and be able to do when they complete their programs, for parents who support them during that process, and for employers and professional colleagues who must be able to rely on the abilities of those with whom they will work. While individual institutions may want to develop special skills beyond minimum requirements and should be encouraged to do so, it is essential that all programs with particular qualification titles develop the level of learning outcomes expected regardless of the institution where studies were undertaken.

Internationalization has increased the need for common understanding of what is expected from different levels of qualifications. Increasingly graduates travel overseas for further study or work in an international environment in research and development projects. Major companies work in an international environment and must be confident that their employees have skills that are internationally competitive, and graduates must be confident that their qualifications will be recognized wherever they travel. These pressures have led to the widespread introduction of qualifications frameworks in many parts of the world it is important that Saudi Arabia responds in a similar way.

The learning expectations for qualifications go well beyond simple acquisition of knowledge. Numerous studies in countries throughout the world have shown strong demand for a much wider range of learning outcomes. These include personal characteristics such as honesty and reliability, capacity to work effectively in groups and provide leadership, a wide range of thinking and problem solving skills, ability to communicate effectively with different types of audience, the ability to investigate new and unexpected problems using a wide range of information sources, and a commitment to lifelong learning to make it likely that graduates will keep pace with the extremely rapid and accelerating development of new knowledge in their field.

These expectations pose new and difficult challenges for post secondary institutions. Conventional methods of instruction are not sufficient to develop this range of abilities, many of which involve attitudes or habits of behaviour that are influenced by many factors outside the control of the institutions providing programs. The institutions can make a significant difference, but only if programs are designed to maximize their effect across a broad range of learning outcomes, appropriate teaching strategies are planned and incorporated into courses and other program activities, and the effect of these strategies is continually monitored and enhanced. The categories or domains of learning outcomes described in this qualifications framework have been selected in part to conform to latest knowledge and theory about the range of learning outcomes that should be developed in post graduate study, and partly to conform to general guidelines about how those kinds of outcomes are most effectively learned. The templates for program and course specifications provided are designed to assist in program planning to achieve these results.

The system for accreditation and quality assurance in the Kingdom of Saudi Arabia is designed to ensure that the quality of higher education is equivalent to high international standards, and is widely recognized as such in the international academic and professional communities. The National Qualifications Framework is an important element in this system. It is intended to ensure consistency within the Kingdom in the standards of student learning outcomes regardless of institution attended, and to make clear the equivalence of those standards with those for equivalent awards granted by higher education institutions in other parts of the world. The Framework will help to provide appropriate points of comparison in academic standards for institutions in their planning and self review processes, for external reviewers involved in program accreditation processes and institutional reviews, and for employers, in understanding the skills and capabilities of graduates they may employ.

Programs developed within this Framework should not only lead to the knowledge, generic skills and professional expertise normally associated with studies leading to comparable awards throughout the world,

but they should also include particular knowledge and skills needed for professional practice in the Kingdom of Saudi Arabia and reflect educational policies and cultural norms in this country.

An educated person must be able to do much more than simply recall information. Graduates should have the ability and commitment to engage in lifelong learning, capacity for effective communication including appropriate and competent use of information technology, and the ability to take initiative in individual and group activities. The framework describes the expected increasing levels of knowledge and skill in these areas for each qualification. Developing these attributes will require use of methods of instruction that take students well beyond the acquisition of knowledge and skills and emphasise their use in practical situations on a continuing basis.

2. Principal Elements in the Qualifications Framework

The principal elements in the framework are:

- **Levels** Levels numbered and linked to qualification titles to describe the increasing intellectual demand and complexity of learning expected as students progress to higher academic awards.

- **Credits** Points allocated to describe the amount of work or volume of learning expected for an academic award or units or other components of a program.

- **Domains of Learning** The broad categories of types of learning outcomes that a program is intended to develop.

Comments on how these elements are used in the Framework are provided below:

2.1 Levels

The qualifications framework begins at an entry level, which is the successful completion of secondary education, and culminates with the degree of doctor. Higher doctorates, postdoctoral studies, and honorary degrees are not included in the framework but reference is made to conventions about these programs and degree titles.

The levels in the framework are:

- Entry. Completion of secondary education.

- Level 1. Associate Diploma

- Level 2. Diploma

- Level 3. Bachelor

- Level 4. Higher Diploma

- Level 5. Master

- Level 6. Doctor

(Note.1 Although not identified as a separate level the title Advanced Diploma can be used for programs between Levels 2 and 3 provided there are at least 90 credit hours in higher education over three years or more of full time study or equivalent.
Note 2. Alternative titles for a Higher Diploma that can be used are Graduate Diploma or Post graduate Diploma))

Satisfactory completion of studies at any level does not necessarily qualify a person to enter studies at the next level. Entry requirements may be set based on grades or other criteria to ensure that applicants have a reasonable chance of successfully undertaking the more advanced and complex studies leading to a higher qualification.

2.2 **Credit Hours**

The number of credits or credit hours assigned to a course or program is an indication of the amount of learning expected. Common practice in the Kingdom of Saudi Arabia is to relate this expectation to the number of contact hours in different types of learning activity (eg. lectures, tutorials, laboratories). For the purposes of this Framework 15 credit hours is taken as a measure of the amount of teaching and instruction normally expected for a full time student at undergraduate levels in a semester and 30 credit hours in an academic year*.

A minimum of 30 credit hours is required for an associate diploma, 60 credit hours (or two years of study) for a diploma and a minimum of 120 credit hours for a bachelor degree. At postgraduate levels additional studies with either 24 or 39 credit hours are required for a master's degree and 12 or 30 credit hours are required for a doctorate depending on the scale of a thesis or major project.

However these are only approximate measures of learning expected and different patterns of instruction can lead to distortions (for example if one course involves a lot of contact in lectures and another relies more on assignments and projects. An unrealistically high number of contact hours will not necessarily result in greater learning and strict application of the credit hour formula may overstate the amount of learning that can be expected.) For the purposes of this qualifications framework and the accreditation and quality reviews conducted by the National Commission for Academic Accreditation & Assessment, 18 credit hours is the maximum that can be recognized for studies in any one semester.

Practice in defining credit requirements for academic study varies in different countries.

In making comparisons with requirements for qualifications in other countries account must be taken of the different numbering systems that are sometimes used. For example in the United Kingdom 120 credit points are allocated as a learning outcome measure for the amount of learning at undergraduate level expected to be acquired by an average student in one academic year. In the European Credit Transfer System 60 credits are allocated for the equivalent of one full time academic year of study. In the USA the numbering system is similar to that used in the Kingdom of Saudi Arabia with 30 credit hours normally allocated for one full time academic year at undergraduate level.

Throughout the world there is increasing attention to learning outcomes expressed in terms of skills and abilities rather than periods of study, and greater flexibility in credit transfer and recognition of prior learning. These trends are understood and supported. However the mechanisms for implementing them on a system wide basis are not yet sufficiently developed to replace reliance on numbers of credit hours or years of study. Consequently the descriptions of requirements for particular awards include reference to credit hours and normally expected years of study. Peer review processes by independent reviewers to monitor programs and student achievement are required to validate judgments about standards of achievement.

The length of bachelor degree programs (and the number of credit hours or credit points given) may differ for programs with the same or similar titles. For example a program leading to a degree of bachelor may be four or five (or even six) years in length depending on the amount of learning expected. A similar period of study in different programs could lead to a bachelor and a master degree, but only if the study for the master degree component was taken at the more advanced level required for that degree. The title is based on the level or complexity of learning rather than just the time taken.

Higher education programs in professional fields often include periods of field work or internship. These may be assigned credit hours. However the number of credit hours allocated must be justifiable in relation to the student learning outcomes expected from that experience.

2.3 **Domains of Learning Outcomes**

The framework groups the kinds of learning expected of students into four domains and describes learning outcomes at each level in each of these groupings. The domains are:

- **knowledge**, the ability to recall, understand, and present information, including:
  - knowledge of specific facts,

* Credit hour calculations are based on a formula in which one 50 minute lecture, or two or three 50 minute laboratory or tutorial sessions over a 15 week teaching semester are regarded as one credit hour.

- knowledge of concepts, principles and theories, and
- knowledge of procedures.

- **cognitive skills**, the ability to:
  - apply conceptual understanding of concepts, principles, theories and
  - apply procedures involved in critical thinking and creative problem solving, both when asked to do so, and when faced with unanticipated new situations,
  - investigate issues and problems in a field of study using a range of sources and draw valid conclusions.
- **interpersonal skills and responsibility,** including the ability to:
  - take responsibility for their own learning and continuing personal and professional development,
  - work effectively in groups and exercise leadership when appropriate,
  - act responsibly in personal and professional relationships,
  - act ethically and consistently with high moral standards in personal and public forums.
- **communication, information technology and numerical skills**, including the ability to:
  - communicate effectively in oral and written form,
  - use information and communications technology, and
  - use basic mathematical and statistical techniques.

Psychomotor skills involving manual dexterity are a fifth domain that applies only in some programs. They are extremely important in some fields of study. For example very high levels of psychomotor skills are required for a surgeon, an artist, or a musician.

Since these psychomotor skills apply only to certain fields, and their nature varies widely, learning outcomes in this domain have not been described in the learning outcomes for each level in the Qualifications Framework for Higher Education. However where they are relevant standards should be clearly described and methods of instruction and assessment included in program and course specifications.

2.4 Use of the Domains in Program Planning and Student Assessment.

There are several important points to consider about the use of domains when planning programs and assessing student learning.

1. Learning outcomes included in the first two domains, knowledge and cognitive skills, are directly related to the occupation, field of study or profession for which students are being prepared. The framework describes the level of knowledge and skill expected in general terms that can be applied to any field, but in planning a program it is necessary to identify the specific knowledge and thinking skills that are expected in that field of study. The outcomes expected include capacity to draw on a wide range of sources of information in carrying out investigations relevant to the student's field of study or profession, confirm its reliability, and draw valid conclusions. In programs where psychomotor skills are relevant the specific skills required for graduates should also be specified.

2. The third and fourth domains, interpersonal skills and responsibility, and communication, information technology and numerical skills, are general capabilities that all students should develop regardless of their field of study (though they may have particular importance and be given special attention in some fields). Development of these abilities can be provided for in specially designed courses or integrated into a number of courses throughout a program. However if they are taught in specially designed courses they should also be reinforced and extended in other studies. Consequently contributions to the development of these abilities would normally be integrated into the teaching and learning processes and criteria for assessments in some appropriate way in all subjects studied.

3. In a program focussed on matters dealt with in communication, IT or numerical skills, for example in a program in languages, mathematics, statistics, or IT, a substantially higher level of achievement would be expected in those areas of knowledge and skill than in programs in other areas of study. The more advanced and specialized learning expected in these programs would be included under the headings of knowledge or cognitive skills.

4. A critical feature of what is intended in each of the domains is that graduates will not only have the capacity to do the things that are described, but that they will habitually do them when appropriate in their personal and professional lives. This has major implications for strategies of teaching, for student assessment, and for the evaluation of programs.

2.5 Conditions of Learning for Different Domains

There are significant differences in the way learning occurs in the different domains. For example students memorize information in a different way from the way their attitudes are formed, and they learn to apply cognitive skills in problem solving in a different way again. This means that if learning outcomes are to be achieved in the different domains of learning, different teaching strategies that are appropriate for those types of learning must be used. The term "conditions of learning" is used to describe what are generally recognized as some of the most important requirements for effective teaching in each of the domains.

Acquisition of Knowledge Conditions include the provision of a broad introductory overview as an advance organizer for the information to be learned. The new information should be linked to that overview and to student's prior knowledge which will help with acquisition of the new information and ability to recall it. It is a little like establishing a mental filing system within which the new information can be placed. Periodic reviews of the new information and its relationship to the major organizing ideas presented in the advanced organizer should be undertaken.

Development of Cognitive Skills Conditions include introducing new and more advanced concepts and theoretical principles and techniques for analysis progressively over time to ensure they are thoroughly understood, and giving students practice in using them in analyzing situations and solving problems. This practice needs to involve both skill in using specific cognitive skills when asked to do so, and the identification of appropriate analytical tools for new and unanticipated issues and problems. Skills should be used in a variety of settings including ones that are similar to the situations where it is hoped they will be applied in the future, to facilitate transfer of learning and use in different situations when appropriate.

Development of Interpersonal Skills and Responsibility These involve combinations of knowledge, attitudes and habits of behavior that it is hoped will affect what students do not only within their program but also in later life. Opportunities should be given to apply and improve skills in group participation, leadership and personal and social responsibility, including ethical behavior and desire to undertake self initiated learning. Strategies will normally require participation in appropriate group activities with reflection on performance and advice and assistance given to support improvements, and may include simulations and analyses of case studies. Attitudes are much more likely to be significantly affected by the views and actions of persons the students respect and admire than simply by rules or instructions to behave in certain ways.

Development of Communication, Information Technology and Numerical Skills Conditions of learning are similar to those required for cognitive skill though acquisition of knowledge and habits of behavior are involved as well. What is normally required is gradual introduction of skills and abilities over time with practice in applying them in a variety of situations, and with advice and assistance given for improvements over time. Within a program the skills could be developed in specially designed courses or integrated into other courses where they have particular importance. However in either case it is most important that they be reinforced in other courses throughout the program to ensure they are consistently applied whenever appropriate.

Development of Psychomotor Skills Psychomotor skills are developed through practice. Feedback on quality of performance is required, which may be partly through the students own observations and partly by an instructor. Skills are progressively refined and become more advanced over time. Basic skills gradually become automated so the learner can focus attention on finer and more advanced application of skills relevant in differing circumstances.

It is an important part of the internal quality assurance of teaching institutions to ensure that the necessary conditions for developing different kinds of learning outcomes are understood by faculty, are applied in courses and programs, and that the effectiveness of those strategies is evaluated.

3. Issues and Relationships

3.1 Relationship Between Higher Education and Technical and Vocational Education and Training

Programs in vocational and technical training are largely competency based with competencies directly derived from employment requirements for particular trades and occupations. Higher education

programs are based to a major extent on research and the development of generalizable knowledge in a field of study, and the application of that theoretical and practical knowledge in research and professional practice.

However there are also similarities. In both sectors there are important bodies of knowledge and students are expected to develop capacity for thinking and problem solving, personal qualities of responsibility, integrity and capacity for continuing learning.

The intended nature of teaching and learning in the two sectors should be clearly understood so their special strengths can be preserved in programs that are delivered. It is also important to recognize that programs in the same fields in the two sectors may include a lot of similar material. Consequently if students who have undertaken studies in one sector and wish to proceed in the other, consideration should be given to the granting of credit or exemptions from program requirements for substantially equivalent studies that have already been undertaken. It may be necessary to provide appropriate transitional support, for example, through bridging courses, counselling or tutorials for students who make that transfer.

The levels of qualifications in technical training and higher education overlap and similar titles are used for both sectors. Because of the important differences in the nature of studies undertaken, and a need for the community to be accurately informed about what students have learned and are able to do it is necessary to have a clear distinction in the titles used.

To communicate this distinction the qualification titles used in technical training should refer to the technical sector within which it is offered.

To ensure that the distinction between technical and higher education is preserved in the titles of qualifications the word technical should not be used in the titles of higher education qualifications.

3.2 Expectations on Entry to Higher Education

The Qualifications Framework is based on an assumption that students entering higher education will have completed a full program of secondary education and have acquired the knowledge and skill to participate effectively in their chosen field of study in higher education. This assumed background includes oral and written competence in the language of instruction, the ability to think creatively and apply knowledge and cognitive skills gained from study of relevant disciplines, and the ability to work independently and take responsibility for their own learning. It also includes any articular prerequisites for study in different fields. Students who have clearly met these requirements at the level expected may proceed direct to the higher education programs described in the Framework.

Students may need to complete preparatory or foundation studies designed to ensure that they have the necessary language and study skills, and the academic background, to succeed in post secondary programs. Where foundation studies are required they precede, and are not part of the post secondary education program. Any credits hours that may be allocated for this foundation or preparatory work do not count towards a post secondary education award.

In other cases students may have completed advanced studies beyond the level of the 12th year of school which higher education institutions are willing to accept as equivalent to part of their academic program. This could be through specially designed equivalent programs offered in cooperation with a higher education institution, or through a partially completed program at another post secondary institution. To avoid requiring students to repeat studies they have already done at an appropriate standard students who have completed programs of this sort could be given advanced standing with credit for equivalent studies when this can be reliably demonstrated. =

3.3 Recognition of Prior Learning

In many cases students will commence higher education studies directly after completion of secondary education and will undertake full programs in higher education institutions that are consistent with the levels and credits described in the framework.

In other cases students may have developed important skill and knowledge through informal education systems or in employment, or have taken further studies beyond the level of basic education in technical training or other higher education institutions.

Students should not be required to duplicate learning they have already acquired or repeat work they have already completed satisfactorily elsewhere. They should be given advanced standing when it can be demonstrated that they have knowledge and skill relevant to their specific field of study that are substantially equivalent to the learning outcomes described in the framework, and be permitted to proceed to further studies in a flexible way. On the other hand it is of little benefit to students if they are expected to proceed with studies for which they do not have adequate background. It is also important that where institutions have identified special student attributes that reflect their particular mission and objectives, students admitted with advanced standing have the time required to develop those special attributes.

Institutions should develop policies and processes to evaluate the background of students who might be considered for advanced standing towards academic awards, and provide counselling and guidance for those who are admitted in this way. They should also monitor the performance of these students and adjust the processes and criteria they use if required.

Responsibility for determining eligibility for admission to programs and the extent to which credit should be given for prior studies must remain with the institution in which students wish to enrol. However as a general guide (i) Students entering higher education with courses completed at another well regarded higher education institution might expect to receive full credit for courses that are substantially equivalent to courses at the receiving institution. (ii) Students entering higher education who have completed a 60 credit hour technical diploma in a college of technology or a higher technical institute might reasonably expect to receive credit for about 30 credit hours of study in substantially equivalent courses in a higher education university or college program. Depending on the specific content of the courses involved this number might be increased or reduced. In either of these cases it may be necessary to make provision for special transitional programs in subject areas that are prerequisite for more advanced studies in the discipline concerned.

3.4 Relationship Between Academic and Professional Requirements

There is a significant difference between academic programs that focus on research and transmission of knowledge in fields that are not directly related to professional employment, and others that are designed to provide students with the high levels of knowledge and skill required for professional occupations.

The two categories are not mutually exclusive; academic studies should develop abilities that would be of great value in employment as well as in everyday life, and professional programs should involve thorough understanding of research and theoretical knowledge in the field of study and in related areas, and develop general thinking and problem solving abilities that are applicable in any context. However there is a difference in emphasis that should be reflected in the detailed content of programs and in the titles of awards.

The distinction has particular significance for programs that lead to the professional registration of graduates.

Completion of a higher education program at an accredited institution and the granting of an academic award frequently carries with it the right to practice in a profession. Consequently it is important to consider not only the levels of knowledge and skill that programs are intended to develop, but also the particular knowledge and skill that is necessary for the professions for which students are being prepared. This involves both what is commonly included in comparable programs in other countries, and any particular requirements relevant to the Kingdom of Saudi Arabia.

The National Qualifications Framework establishes levels and generic skill requirements for all academic awards. Further work is being undertaken on the special knowledge and skill requirements for various professional occupations. Institutions must accept responsibility through their program development and evaluation procedures for ensuring that the requirements for professional practice are met, and criteria for accreditation will include the adequacy of those procedures.

3.5 **Programs and Awards Offered by Professional Associations**

Some professional associations based in other countries give recognition to professional experience or specialized training, with titles such as “associate”, “certificate”, “diploma” “member” “licentiate” or “fellow” (These titles are listed as examples and are not a complete list) and arrangements are sometimes made for training leading to these awards in the Kingdom of Saudi Arabia. Similar

programs and forms of recognition are sometimes given by computer companies to recognize experience and skill in using their systems.

Programs of this kind can be valuable and a number of them are highly regarded. However many are not regarded as academic awards and they are not part of this qualifications framework. (Though an institution could recognize such work and give credit for it towards a higher education qualification provided it was offered at the level required, and developed learning outcomes sought in the higher education program concerned at the necessary standards.)

3.6 Intermediate Exit Points in a Longer Program

Studies at each level should lead to achievement of the knowledge and skill for that level, and also provide the foundation for further studies at higher levels. If an exit award is granted, for example at Level 2 (diploma), it is essential that this be a worthwhile qualification in its own right, and that students have valuable knowledge and marketable skills at that point. A program designed for one of these awards may have a more practical orientation than the first two years of study in a longer program one where the intermediate exit point is not used and studies at these levels are aimed primarily at providing a basis for further study.

The principle involved is that a program leading to an award must provide a coherent sequence of activities designed to develop a defined set of abilities to be acquired by graduates. It is not simply an accumulation of credit hours. Consequently it is not acceptable to award a diploma to a student who has completed the first two years of a bachelors degree, or a higher diploma to a student who has enrolled in a masters degree and failed to continue past the coursework components of that program unless the components of the program have been designed to have legitimate and planned exit points at those stages.

Similarly, if a shorter program is extended in length, for example where an associate degree program is extended and converted to a bachelor degree, the total program should be reviewed to ensure that the components of the program and the sequence of activities are appropriate for development of the more advanced knowledge and skills required at the new level. It is not appropriate to simply add on to an existing program without reviewing the program structure.

It sometimes happens that there are students who have completed the early stages of a degree program successfully, and who for a variety of possible reasons are unable to complete the full degree program. There can be some flexibility in finding an appropriate way of recognizing the studies they have completed, provided this does not compromise the legitimacy of an approved lesser qualification. It may be possible to design a bridging course or courses that would provide the missing components of the shorter program. However this can only be done if the bridging arrangements are approved by the proper authority within the institution after ensuring all the necessary learning outcomes required for the qualification concerned have been included.

3.7 International Equivalence of Awards

Recognition of equivalence in standards with international benchmarks is important and degree requirements can be taken as a useful guide in establishing equivalence.

It is intended that the four-year bachelor degree in this Framework to be offered in higher education institutions in the Kingdom of Saudi Arabia be recognized as equivalent to bachelor degrees in other countries in the Arab region, the degree of Bachelor with Honours in the United Kingdom or bachelor degrees in North America. It is important that not only bachelor degrees but all programs developed within this Framework for delivery in the Kingdom should lead to the knowledge, generic skills and professional expertise normally associated with studies leading to comparable awards throughout the world.

While the specifications of the Saudi Arabian qualifications framework must be complied with for programs delivered in this country, it is recognized that requirements and circumstances differ in other parts of the world and that legitimate and valuable studies undertaken elsewhere may reflect different requirements and structures in those other education systems. For the purposes of assessing the equivalence of completed studies undertaken elsewhere, the qualifications framework will be taken as a guide, but consideration will also be given to the standing of the award concerned and the extent to which it is accepted as a professional qualification in the other jurisdiction. Such qualifications are assessed on a case-by-case basis. This may result in longer or shorter programs being accepted as

equivalent to a Saudi Arabian award for salary or employment purposes, or even for admission to post-graduate study. However the acceptance of such an award as a qualification does not affect what is required in the Kingdom of Saudi Arabia for programs delivered in this country.

3.8 Application of the Framework to International Higher Education Institutions Operating in Saudi Arabia

The assistance provided to students and institutions in the Kingdom of Saudi Arabia by international institutions is welcomed. It is understood that to receive an academic award issued by such an institution students must meet all of that institution's requirements for its academic awards.

However this does not remove an expectation that programs offered within the Kingdom of Saudi Arabia must also meet the requirements established in this Kingdom. These include the same credit and standards requirements, conformity with the National Qualifications Framework including conformity with its credit requirements, the requirements for years of study, and the development of learning outcomes in different domains of learning. Programs delivered in the Kingdom of Saudi Arabia must include the knowledge of regulations and practices in the Kingdom of Saudi Arabia that are relevant to their program of study, and ability to apply concepts to issues and problems of local significance. Many programs have sufficient flexibility to accommodate these dual expectations, but it may be necessary in some cases for additional study to be undertaken or for substitutions to be made so that both sets of requirements are met.

3.9 Verification of Standards of Learning Outcomes

The Framework provides guidance for, teaching staff, students, employers and quality assessors about standards relating to extent of knowledge and range of skills and abilities. However these are necessarily phrased in general terms and require interpretation by experienced people familiar with the field of study concerned and with standards of achievement at leading international higher education institutions. It is part of the "internal" quality assurance responsibility of all institutions offering higher education programs to obtain independent verification that standards set out in the National Qualifications Framework are being consistently achieved, and an acceptable strategy for obtaining this verification will be a necessary condition for institutional and program accreditation.

Some examples of strategies used by higher education institutions to verify standards of learning outcomes achieved by students are check marking of student scripts and assignments by an independent marker from the same or another institution, benchmarking of standards of projects and assignments against assessments at other institutions, and comparisons of strategies for assessment and criteria used. These strategies can be complemented by external reviews of departments and programs, assessments of programs by students and graduates, and reports on the skills of graduates by employers. The responsibility to verify standards may be partly addressed by particular arrangements made with a partner institution, but the extent to which this is done will depend on details of the arrangements made and the effectiveness with which they are carried out. An arrangement with a partner institution does not remove the responsibility of the local institution that is teaching a program to verify standards.

External quality reviews of institutions and accreditation of programs will give particular attention to the adequacy of mechanisms for verification of standards of student achievement. If these mechanisms are not considered adequate, accreditation will be denied.

3.10 Characteristics of Graduates Compared with Learning Outcomes at the End of a Program

It is expected that students graduating from any program will have demonstrated ability to recall knowledge and to have developed a range of skills that they have learned. This can be tested without too much difficulty with appropriate assessment processes and students pass or fail or receive grades on the basis of their performance.

However the real objective is not just that they can pass tests and assignments, but that in their personal and professional lives for many years after they graduate they will recall and apply their knowledge, that they will behave sensitively, responsibly and ethically in difficult situations, and that they will continue to extend their knowledge through habits of lifelong learning.

In this framework there are references to characteristics of graduates at each qualifications level. These should be taken very seriously and a key question for program planners is -- How can we make people like that?

The question is a difficult one and very hard to answer. Attitudes and habits of behavior are influenced by many factors that are outside the control of the institution where they study, and individuals cannot be tested on what they will do many years after they graduate.

However a lot can and should be done. There is an extensive body of knowledge about how attitudes are formed and much of this theory can be applied in classrooms through case studies, simulations, presentations and discussions with respected leaders, group processes and so on. A challenge for program planners and teaching staff is how to best incorporate some of these techniques throughout a program. Similarly there is extensive research on transfer of learning and how to teach in ways that knowledge and skills that have been taught will be recalled and applied in a wide range of unanticipated situations. Teaching techniques to facilitate transfer of learning should also be incorporated into regular teaching throughout a program.

Assessment processes within a program can only deal with part of this issue. Students can and should be tested on their knowledge of ethical codes of practice. They can be given new and different problems to solve that involve application of ideas and given credit for their creativity. Their sensitivity in dealing with patients, clients or work colleagues can be observed in clinical or work placements and in simulated classroom experiences. They can be asked to deal with ethical dilemmas involving value conflicts in simulations, role plays or individual or group assignments. These things can indicate knowledge of what they can and should do, though not necessarily what they will do.

Although it is an imperfect indicator program evaluation processes should include opinions of employers about the extent to which graduates demonstrate the characteristics that are described, and any other special attributes that a particular program is intended to develop.

3.11 Verifying Consistency with the Qualifications Framework

Consistency with the qualifications framework is required for program accreditation and a number of tests are applied and sources of evidence described in assessing whether this is the case. These are explained in *Part 2 of the Handbook for Quality Assurance and Accreditation of Higher Education Institutions* which deals with internal quality assurance arrangements (Section 2.7)

Particular requirements include:

1. Use of qualification titles that clearly and accurately describe the education sector, the qualification level, and the field of study or specialization.
2. The minimum number of credit hours required for the qualification concerned.
3. Appropriately specified learning outcomes in each of the domains of learning. (knowledge, cognitive skills, interpersonal skills and responsibility, communication, IT and numerical skills, and where relevant to the program, psychomotor skills)
4. Evidence that required standards of learning outcomes for the qualification concerned are achieved in each of those domains.

The following notes describe what must be done to meet these requirements for accreditation.

Requirement 1. The title of the qualification must comply with the Framework.

Particular concerns are that the title must accurately specify the level of the qualification, that a program in technical education at levels 4 or 5 must include the word technical, and field descriptors must accurately describe the area of study undertaken.

Requirement 2. The number of credit hours required for the qualification must be as specified in the framework.

When considering credit hours included in a program several important considerations should be kept in mind.

- The credit hours in a program must be in addition to any foundation or preparatory studies.

- a maximum of 18 credit hours can be recognized within a semester of full time study.

The credit hour formula is based on a numbering system in which a full time student load is 15 to 18 credit hours in a semester and a minimum of 120 credit hours in a four year degree. The credit hour formula is used as a surrogate for estimates of the amount of learning achieved. If a program has a high number of contact hours this formula can result in an unrealistically high number which does not accurately represent the amount of learning that can reasonably be expected.

Requirement 3. The program objectives should develop learning outcomes in all of the required domains of learning. To provide evidence that this is done:

- Learning objectives specified for the program should include outcomes in all of the domains.
- Responsibility for achieving these learning outcomes should be distributed appropriately across the courses within the program and included in course objectives.
- Program and course specifications should include methods of teaching and student activities that are appropriate for the learning outcomes in each of the domains..
- Tests, examinations and other required assessment tasks should include appropriate forms of assessment of learning in each of the domains.
- Program evaluations, including student, graduate or employer surveys and/or other mechanisms should include attention to learning outcomes in each of the domains.

Requirement 4. The standards achieved in each of the domains must be consistent with the descriptions of characteristics of graduates and the descriptions of learning outcomes for each qualification level.

Some of these learning outcomes can be assessed in tests and examinations or other assessment tasks within the program. However others relate to characteristics of graduates after they have left the institution. A further complication is that the standards are expressed in general terms that require levels of judgment about standards achieved. Consequently much of the evidence of consistency with standards of achievement must rely on indirect measures and informed professional judgments. To satisfy requirements for accreditation the following sources of evidence should be included in program evaluations.

- Program evaluations and self assessments by graduates of the program.
- Independent advice by professional colleagues from other institutions or trained evaluators on the level of difficulty in tests and assignments and the standards achieved by students.
- Survey responses from employers of graduates or senior professional associates of graduates.

4. Qualification Titles

4.1 Field Descriptors in Higher Education

The terms used for levels such as Associate Degree, Bachelor, Master, and Doctor are widely understood and the expectations for complexity of learning are clearly described in the framework.

It is also important that the descriptions of fields in which studies are undertaken be accurately and consistently used. Field descriptors are the terms used to describe the broad area of study (Arts, Science, Engineering etc.), and in some cases areas of specialization within the field. With some exceptions degree programs that are designed for professional practice carry a title that relates to that professional field. (B Eng., B.Bus., B Ed., B.Ag Science etc.

Where professional field descriptors are not used the term Arts should be used for studies in the humanities or social sciences, and the term Science should be used for studies in natural or applied sciences, including environmental, biological, physical and medical sciences.

At post graduate levels there are similar conventions. Academic research degrees normally carry titles of M Sc for studies in the natural and applied sciences, and M.A. in the humanities and social sciences, with the title Ph.D used for research degrees in any field. Professionally oriented degrees at these levels normally include substantial coursework and a major project or thesis and a title that includes the field of study.

The following arrangements should be followed:

Level	Academic Strand	Professional Strand
Entry level. Completion of secondary education		
1. Associate Diploma	Associate Diploma of Higher Education	Associate Diploma of… (area of specialization)
2. Diploma	Diploma of….Arts, or of Science, or (if evenly divided) of Higher Education	Diploma of … (area of specialization)
Optional title for a program with a minimum of 90 cred hours over at least three years) Advanced Diploma	Advanced Diploma of Arts, or of Science, or (if evenly divided) of Higher Education	Advanced Diploma of …(are of specialization)
3. Bachelor Degree	Bachelor of Arts, or of Science	Bachelor of … (name of professional field—eg. Business, Education, Engineering)
4. Higher Diploma	Higher Diploma in Arts, or Science	Higher Diploma in… (name professional field—eg. Business, Education, Engineering)
5. Master	Master of Science Master of Arts	Master of …(name of professional field—Business Education, Engineering)
6. Doctor	Doctor of Philosophy	Doctor of …(name of professional field—eg. Business, Education, Engineering)

4.2 **Doctoral Qualifications**

The term doctor is a prestigious title that should only be used for very advanced studies involving significant research or applied independent studies and preparation of a thesis or major report that is independently assessed.

The title of Doctor of Philosophy is used for research-based programs at level six regardless on the field of study.

Professional doctorates such as Doctor of Business Administration (DBA), Doctor of Education (D Ed or Ed D) or Doctor of Engineering (D Eng) may include a strong research component but are more practically focused and include substantial coursework as well as a thesis or major project. The research based or professional doctorates are regarded as having equivalent standing.

Post Doctoral Studies.

These are provided in many different fields for recent graduates who have completed doctoral studies. This work should be recognized in an official university transcript, but no academic award is granted. However it is possible for students to enroll in and complete a second full doctoral program and receive the appropriate academic award for that study.

Higher Doctorates

Higher doctorates are sometimes granted in recognition of extensive distinguished research and scholarship over a lengthy period of time, normally at least ten years. Candidates submit evidence in the form of books and other peer reviewed and published research documents and this is evaluated by a senior independent panel of leading authorities in the field who are external to the university. There is normally an initial screening process within the university before this external assessment is undertaken. An award might

carry the title of Doctor of Letters for work in the liberal arts, or Doctor of Science for science based studies. However more specialized titles designating a particular field of studies might also be used.

Honorary Doctorates

Honorary doctorates are granted where a university wishes to recognize an outstanding contribution to society by a distinguished member of the community. This may or may not include contributions to the university granting the award. The titles most commonly used are Doctor of Laws (LLD) or Doctor of Letters (D Letters). However as for higher doctorates the title of a specific field may be used where the contribution being recognized is within that field. These awards are granted honoris causa, and that term is used in making the award. Recipients of these awards have the right to use the title, but do not normally do so in general public situations. However the university that makes the award would normally use the title in communications with that person.

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5. Characteristics of Programs and Expected Learning Outcomes at Each Level in the Framework

Descriptions of learning outcomes at each of the levels of the Framework are provided in the following section. These are grouped into four domains, and in each domain there is an increase in the scale or complexity of the learning that is expected at higher levels. In each case the knowledge and skills are intended to be cumulative, so that the learning at any level includes that of the same domain at earlier levels even if the particular knowledge or skill is not restated.

These descriptions are intended to apply at the level described to all learners, and where the main focus of a student's program is in an area that is described in general terms for everyone, a significantly higher level of performance would be expected. For example a student undertaking major studies in IT would be expected to have the levels of expertise in IT described under the headings of Knowledge and Cognitive Skills rather than the more general expectation for everyone described under the heading of Communication, Information Technology and Numerical Skills.

As noted above psychomotor skills are extremely important in some fields of study, and the specific skill requirements vary considerably. The descriptions of standards of learning in each domain in the following section do not include psychomotor skills. However in programs where psychomotor skills are important, the level of skills described should be clearly defined in program specifications.

Entry Level Completion of Secondary Education

The framework for higher education assumes that students entering post secondary education will have completed secondary education, with any necessary pre-requisites for study in particular fields. If additional preparatory work is required it is not part of higher education and credits that might be granted for such studies do not count towards higher education qualification requirements.

Learning Outcomes in Each Domain expected at Entry Level

Knowledge

Has a broad understanding of important knowledge and skill in the general subject fields taught in secondary school together with more extensive knowledge in any selected fields specified as prerequisites for further studies.

Cognitive Skills

Understands general concepts, principles and theories in subjects studied and has the ability to apply those insights in analyzing new issues and problems in formal studies and in daily life. Is aware of major issues relating to economic and social development, and is able to apply insights from studies in analyzing those issues.

Interpersonal Skills and Responsibility

Accepts responsibility for own learning and behavior and is able to take initiative and work with guidance in academic studies and other aspects of personal development.

Can be relied upon to complete assigned tasks with limited supervision. Works effectively towards common goals in group situations.

Communication, Information Technology and Numerical Skills

Can effectively use basic information and computer technology and numerical skills in tackling and resolving problems in educational settings and in everyday life.

Communicates effectively, both verbally and in writing and through use of information technology.

5.1 Level 1. Associate Diploma

5.1.1 Characteristics of Programs

An award requiring a minimum of 30 credit hours normally following at least one year of full time study or equivalent. A certificate would normally be offered to recognize a relatively brief period of study in higher education, either as an extension of general education beyond secondary education, or as preparation for employment in an administrative or para-professional field requiring limited specialized expertise. Although a certificate should be a worthwhile qualification in its own right, studies would normally provide a basis for further study towards a higher qualification.

5.1.2 Characteristics of Graduates

Holders of an associate diploma should have demonstrated:

- Knowledge of the most important factual information, concepts and principles relating to their particular area of study, and of the information needed for employment at the level concerned.
- The ability to apply this knowledge intelligently and constructively in dealing with predictable and routine issues and problems relevant to employment and other aspects of their lives.
- The ability to work effectively on their own or cooperatively in group activities, to act responsibly, and take initiative in achieving personal or group objectives.
- The ability to communicate effectively, both orally and in writing and to make effective use of commonly used information and communications technology.

Graduates at this level should:

- Apply their knowledge and skill constructively in responding to issues and problems, seeking further advice and assistance when necessary.
- Act reliably and responsibly in personal and employment situations.
- Participate willingly in activities designed to extend their knowledge and skill.
- Behave in ways that are consistent with Islamic values and beliefs, and reflect loyalty, responsibility, and commitment to service to society.

5.1.3 Learning Outcomes in Each Domain at Level 1

Knowledge

Has general knowledge of basic factual information, concepts and principles in the field of study including theoretical and practical information relevant to employment in the professional area concerned. Is aware of the most significant recent developments in the field, and of how to utilize available sources of information about further developments and their possible impact on existing practice.

Cognitive Skills

Can investigate practical and routine problems in the field of study or area of employment and develop practical solutions using techniques developed in studies undertaken. Can obtain relevant new information from well known sources and use techniques of inquiry that have been developed in the educational program with some guidance.

Interpersonal Skills and Responsibility

Acts responsibly and can be relied upon to complete assigned tasks. Where difficulties arise seeks advice and guidance and acts constructively and with some initiative in response.

Works effectively in group situations.

Takes initiative in seeking further information or resources required in carrying out responsibilities, but understands limits of knowledge and skill and seeks advice and assistance when necessary.

Communication, Information Technology and Numerical Skills

Can make effective use of routine mathematical skills and computing technology in completing assigned tasks but may require guidance in dealing with complex issues. Communicates effectively both orally and in writing, and can make effective use of information and communications technology in routine communications, and in presentation of information and reports.

5.2 Level 2. Diploma

5.2.1 Characteristics of Programs

An award requiring a minimum of 60 credit hours normally following two years of full time study or equivalent in higher education. Diplomas are designed to develop both the knowledge and skills for employment in an administrative or para-professional field, and the foundation of general and theoretical knowledge that provides the basis for further studies leading to a bachelor's degree. Both these elements are important though the emphasis on general or professionally related study may vary. Where a diploma is awarded with a specific field descriptor relating to an occupational field there should be sufficient coverage of directly related knowledge and skill for employment in that field, normally involving at least at least 50% of the program.

5.2.2 Characteristics of Graduates

Holders of a diploma should have demonstrated:

- Knowledge of important facts, principles and theories in a field of study and of regulations and operating procedures relevant to their professional field;
- The ability to apply concepts theories and processes of enquiry to issues and problems related to their area of study and/or employment, and develop sound solutions based on that analysis;
- The ability to successfully carry out the responsibilities for employment in the field of activity for which they have been prepared;
- The ability to interpret and evaluate quantitative and qualitative data and present conclusions orally and in writing, making appropriate use of information and communications technology;

Graduates at this level should:

- Apply their knowledge and skill to issues in their field with limited guidance, but also understand the limits of their knowledge and how this affects the analysis and interpretations based on that knowledge. Seek advice from appropriate sources when necessary;
- Take initiative in planning to enhance their knowledge and skill;
- Think and act independently, but also interact constructively in group or team situations in pursuit of common goals;
- Identify the impact on others of actions taken and evaluate the appropriateness of those actions in the light of sound ethical and moral principles. They accept personal responsibility for actions taken in individual or group situations.
- Behave in ways that are consistent with Islamic values and beliefs, and reflect loyalty, responsibility, and commitment to service to society.

5.2.3 Learning Outcomes in Each Domain at Level 2

Knowledge

Has general knowledge of the scope and defining features of a field of study, and in-depth knowledge of some areas within the field, including important theories, concepts and principles. Is familiar with important current issues and recent research. In programs preparing students for a professional or para-professional occupation, has knowledge of recent developments in professional practice and of technical requirements and regulations relevant to that professional field.

Cognitive Skills

Can analyze and interpret technical and research information and apply it to practical issues with some guidance. Is able to investigate defined or routine problems, evaluate alternative solutions, and propose new approaches drawing on relevant theoretical and practical knowledge. Can identify relevant concepts and theories from subjects studied and apply them outside the context in which they were learned, in both academic and employment contexts. Is aware of the provisional nature of knowledge in the field and able to take this into account in analyzing problems and proposing solutions. In professional programs can apply technical and professional knowledge in the analysis and resolution of practical issues with limited guidance, and understand and explain the consequences of decisions made.

Interpersonal Skills and Responsibility

Is able to think and act independently, but interacts constructively in group or team situations in pursuit of common goals. Is able to exercise leadership in a small group in a defined area of responsibility.

Can identify weaknesses in own knowledge and skill and plan for and take action to provide for continuing learning.
Accepts personal responsibility for actions taken in individual and group situations. Is aware of and acts consistently with relevant regulations and codes of practice, seeking advice when necessary.

Can identify the impact on others of actions proposed or taken and evaluate the appropriateness of those actions in the light of their consequences. In situations of potential conflict in values or priorities can make explicit the nature of the conflict and the values and priorities involved and make a defensible judgment on the course of action that should be taken.

Communication, Information Technology and Numerical Skills

Is able to apply routine statistical and relevant mathematical techniques in investigating and proposing solutions to problems and issues.

Communicates effectively, both orally and in writing, presenting arguments, analyses and conclusions succinctly and in correct form.

Is able to make effective use of information and communications technology in analyzing issues and obtaining information, and in making presentations.

5.3 Level 3. Bachelor

5.3 Characteristics of Programs

An award requiring a minimum of 120 credit hours, normally following four academic years of full time study or equivalent. There are differing expectations for length of programs in different fields of professional study and programs. The minimum number of 120 credit hours of campus based studies apply to all bachelor degree programs, but reference should also be made to professional study requirements for professional fields. Where longer programs are required for bachelor's degrees, as they are in certain fields, the level remains the same, but additional credits are given to recognize the greater amount of learning required.

A bachelor degree program is designed to develop a comprehensive understanding of a broad field of study, with some studies taken to considerable depth and involving critical analysis of the latest developments and research. Students should be aware of relevant knowledge and theory in other related fields of learning.

A bachelor degree is the basic qualification for entry to a number of highly skilled professional fields and programs in these fields should develop both the knowledge and skill to practice in those professions, and the background in practical and theoretical knowledge and research to proceed to further study.

5.3.2 Characteristics of Graduates

Holders of a bachelor degree should have demonstrated:

- Knowledge of a comprehensive, coherent and systematic body of knowledge in a field of enquiry and of the underlying theories and principles associated with it;
- The ability to investigate complex problems and develop creative solutions with limited guidance, using insights from their own and other related fields of study;
- The ability to identify and use appropriate mathematical and statistical techniques in the analysis and resolution of complex issues, and select and use the most appropriate mechanisms for communicating the results to a variety of audiences;
- Capacity to provide leadership and willingness to cooperate fully with others in joint projects and initiatives;
- In the case of a professional program the full range of knowledge and skill required for effective practice in the profession concerned;
- In the case of an academic program not geared to professional practice, in depth knowledge and understanding of research literature in a field, and ability to interpret, analyze and evaluate the significance of that research in extending knowledge in the field.

Graduates at this level should:

- Take initiative in identifying and resolving problems and issues both individually and in group situations exercising leadership in pursuit of innovative and practical solutions;
- Apply the theoretical insights and methods of inquiry from their field of study in considering issues and problems in other contexts;
- Recognize the provisional nature of knowledge field and take this into account in investigating and proposing solutions to academic or professional issues;
- Participate in activities to keep up to date with developments in their academic or professional field and continue to enhance their own knowledge and understanding;
- Consistently demonstrate a high level of ethical and responsible behavior and provide leadership in academic professional and community environments
- Behave in ways that are consistent with Islamic values and beliefs, and reflect high levels of loyalty, responsibility, and commitment to service to society.

5.3.3 Learning Outcomes in Each Domain at Level 3

Knowledge

Possesses a comprehensive, coherent and systematic body of knowledge in a field and the underlying principles and theories associated with it. Is aware of related knowledge and theory in other disciplines and, in the case of professional programs, other professional fields. Is familiar with the latest developments at the forefront of specializations within the main field of study including critical awareness of current research relating to resolution of issues and extension of knowledge. In programs preparing students for professional practice graduates are aware of relevant conventions, regulations, and technical requirements and of how these may be modified over time in response to changing circumstances.

Cognitive Skills

Is able to undertake investigations, comprehend and evaluate new information, concepts and evidence from a range of sources, and apply conclusions to a wide range of issues and problems with limited guidance. Is able to investigate relatively complex problems using a range of information technology and other sources, and recommend creative and innovative solutions taking account of relevant theoretical knowledge and practical experience and the consequences of decisions made. Can apply these skills and insights in professional and academic contexts relevant to the field of study undertaken. In professional programs can use routine procedures appropriately, but identify situations requiring innovative solutions and draw on relevant theoretical and practical insights in response.

Interpersonal Skills and Responsibility

Contributes to and facilitates constructive resolution of issues in group or team situations, whether in a leadership role or as a member of a group. Can exercise group leadership in undefined situations calling for innovative responses.

Shows initiative in identifying issues requiring attention and in addressing them appropriately on an individual or team basis.

Takes responsibility for own learning and is able to identify and use means of finding new information or techniques of analysis needed for completion of tasks.

Deals with ethical and professional issues involving values and moral judgments in ways that are sensitive to others and consistent with underlying basic values and relevant professional codes of practice.

Communication Information Technology and Numerical Skills

When investigating issues and problems can identify relevant statistical or mathematical techniques and apply them creatively in interpreting information and proposing solutions.

Can communicate effectively both orally and in writing, selecting and using forms of presentation appropriate for differing issues and audiences.

Routinely uses the most appropriate information and communications technology in gathering, interpreting and communicating information and ideas.

5.4 Level 4. Higher Diploma

5.4.1 Characteristics of Programs

An award requiring a minimum of 24 credit hours, normally following completion of a bachelors degree and taken over a period of at least one academic year or equivalent part time period of study. The programs are intended to provide advanced academic and professional studies beyond the level of a bachelor degree for students who want to improve professional skill and knowledge but do not meet entry requirements for a masters degree, or do not wish to undertake the research or major project work required for such a degree. Graduate diplomas normally involve advanced professionally related coursework and may require completion of a major or minor project.

Although intended as a final qualification, students completing a higher diploma may proceed to further study at master level, but may be required to meet special admission requirements or complete additional theoretical or applied studies before doing so.

5.4.2 Characteristics of Graduates

Holders of a higher diploma should have demonstrated:

- Advanced knowledge of theory or professional practice, and substantial experience in an academic or professional field.
- The ability to apply that theory and practice creatively in planning and research drawing on a wide range of relevant insights within and outside their specific field of study.
- The ability to select from and use a range of mathematical and other analytical techniques in investigating and reporting on issues and proposing new initiatives, making effective use of oral, written and electronic forms of communication for academic, professional and community audiences.
- A very high level of competence in carrying out responsibilities in professional practice or employment.

Graduates at this level should:

- Draw on a wide range of theoretical and practical knowledge both within and outside their specialized field in addressing new issues and problems.
- Exercise effective leadership in initiating action to address significant issues in the work or community environment in ways that are sensitive to others and consistent with basic values and ethical principles.
- Provide a positive influence to others through example and leadership in professional and community life.
- Take responsibility for their own further professional development and work cooperatively with others in keeping up to date with new developments in their field.
- Behave in ways that are consistent with Islamic values and beliefs, and reflect high levels of loyalty, responsibility, and commitment to service to society.

5.4 3 Learning Outcomes in Each Domain at Level 4

Knowledge

Has advanced knowledge of theory and practice in an academic or professional field, and of related knowledge in other fields that are relevant to an area of specialization. Knows about current research and innovations in professional practice and the impact of these developments on accepted theory and practice.

Cognitive Skills

Is able to apply theoretical knowledge and practical experience in investigating complex issues and problems, identifying additional sources of information or analytical techniques as required. Takes full account of differing practical circumstances in analyses of issues, forming conclusions and proposing solutions to problems or strategies for action.

Interpersonal Skills and Responsibility

Works effectively on an individual basis or in a team situation in a wide range of circumstances including new situations and ones requiring high levels of tact and sensitivity. Acts responsibly in employment or other professional situations, providing leadership and accepting high levels of responsibility.

Takes responsibility for developing new skills and knowledge required both for current tasks, and for further development of abilities and skills.

Demonstrates a high level of ethical behavior in situations involving value conflicts and competing priorities. Provides a positive influence to others through example and leadership in employment or other group situations.

Communication, Information Technology and Numerical Skills

Can draw upon and appropriately apply a range of mathematical and statistical techniques and use them intelligently in investigating and reporting on issues and problems. Communicates effectively in oral and written modes and using electronic communications technology. Routinely evaluates the success of communications to different audiences and takes action to improve effectiveness when required.

5.5 Level 5. Master

5.5.1 Characteristics of Programs

An award requiring a minimum of 24 credit hours for course work plus a thesis in a research degree program, or 39 credit hours for course work plus a significant project. Masters degrees normally involve at least one year and up to three years of advanced study following completion of a bachelor degree.

Masters degrees are designed to provide very advanced academic and professional knowledge and skill for students who have completed a bachelor degree with a high level of achievement, normally a GPA of 3.0 or better.

Master degrees aimed at advanced professional expertise may involve a significant independent project applying learning gained to issues or problems in their field, together with advanced coursework.

Research masters degrees based on a thesis are normally awarded with the title of MA or MSc. Professional master degrees based on advanced coursework or coursework and major project are normally awarded with the title of M Bus, MBA, M Ed, M Eng or other field descriptor for the professional field concerned.

5.5.2 Characteristics of Graduates

Holders of a master degree should have demonstrated:

- Thorough understanding of theory, research and recent developments at the forefront of an academic discipline or field of professional practice and of the implications of those developments for the store of knowledge in the field.
- Familiarity with and ability to use advanced techniques of research and inquiry applicable to the field of scholarship or professional practice, and will have use those techniques in carrying out a significant research or professional project.
- Ability to synthesize and apply the results of research and new developments in professional practice, in analyzing, developing and testing hypotheses, and proposing solutions to theoretical and practical problems.
- Ability to communicate the results of advanced study and research through refereed publications to academic, professional and community audiences.

Graduates at this level should:

- Consistently respond to complex academic and professional issues, providing creative solutions and making sound judgments, exercising these skills when necessary in the absence of complete data relevant to the matter concerned.
- Act autonomously in tackling and solving both anticipated and unpredictable problems, and cooperate with others and provide leadership when appropriate in group situations.
- Follow, and actively encourage others to apply, sound ethical and moral judgments in dealing with sensitive and complex issues that may involve difficult value conflicts.
- Take full responsibility for their own independent learning, and provide leadership in developing opportunities to support the continuing professional development of others.
- Behave in ways that are consistent with Islamic values and beliefs, and reflect high levels of loyalty, responsibility, and commitment to service to society.

5.5.3 Learning Outcomes in Each Domain at Level 5

Knowledge

Has thorough knowledge and critical understanding of the main areas of a subject or discipline including principal concepts, principles and theories and their current application to a specialist field of academic inquiry or professional practice. Has detailed understanding of one or more complex areas of specialization at the forefront of theory, research or professional practice in that field. Understands how new knowledge is developed and applied and the effects of recent research on the store of knowledge in the field and on associated professional practice. Is aware of recent regulatory provisions in the local and international environment that might affect the professional field concerned and of reasons for and future implications of those changes.

Cognitive Skills

Consistently applies practical and theoretical knowledge in dealing with a wide variety of novel and unpredictable scholarly and/or professional contexts, and develops original and creative responses to issues and problems. Makes informed and defensible judgments in circumstances where there is an absence of complete or consistent information.

Can synthesize and apply research and scholarly publications or professional reports, and develop significant new ideas and integrate them into or challenge established knowledge. Can apply common and specialized research techniques in the creative analysis of complex issues and development of conclusions and proposals relevant to an academic or professional field.

Can independently plan and execute a major project or piece of scholarly research applying practical and theoretical knowledge and research techniques and producing sound conclusions that add significantly to existing knowledge or professional practice.

Interpersonal Skills and Responsibility

Takes initiative in identifying and responding creatively to complex issues and problems in an academic or professional context. Where additional information or skills are required takes independent action to acquire and apply that information or skill.

Accepts full responsibility for own work and cooperates fully and constructively with others in dealing with issues and problems, exercising both informal and formal leadership skills where appropriate. In group situations acts in ways that consistently enhance the effectiveness of the group as a whole.

Deals consistently and sensitively with complex ethical issues in academic and or professional contexts. Where issues are not adequately dealt with in current ethical codes of practice or regulations, makes informed, fair, and valid judgments on the basis of sound principles and values. Takes initiative in raising deficiencies in existing codes of practice for possible review and amendment.

Communication, Information Technology and Numerical Skills

Communicates effectively and at appropriate levels with academic and professional audiences and the wider community through informal and formal reports and presentations and academic and professional publications, including a thesis or major project report.

Obtains, critically evaluates, and makes effective use of mathematical and statistical data, and uses a wide range of appropriate information and communications technology in investigating issues and in communicating conclusions and recommendations.

5.6 Level 6. Doctor

5.6.1 Characteristics of Programs

An award requiring a minimum of 30 credit hours for advanced coursework plus a major thesis normally taken over two full time academic years or equivalent following a Masters degree. An alternative program structure with greater concentration on independent research is available in selected fields at some institutions involving a minimum of 12 credit hours and a more extensive thesis.

Doctoral programs involve substantial advanced independent scholarship, mastery of the most recent developments in a major field of inquiry, and the creation, interpretation and application of knowledge in a way that adds significantly to the development of a subject, discipline or professional field. Programs may focus on independent research that results in a thesis adding to existing knowledge, or involve a combination of advanced coursework and thesis in a professional or applied field.

Research doctorates are normally awarded with the title of PhD. Professional doctorates based on advanced coursework and major applied thesis or project are normally awarded with the title of DBA, D Ed, D Eng or other field descriptor appropriate for the professional field concerned.

5.6.2 Characteristics of Graduates

Holders of a doctorate should have demonstrated:

- Thorough understanding of a substantial body of advanced knowledge and research in an academic or professional field.
- Familiarity with emerging issues at the forefront of the discipline or professional field and with the potential challenges of those issues for existing practice and generally accepted conclusions.
- Advanced scholarship involving the synthesis of theory and research in related fields and the creation and interpretation of new knowledge through original research, or the application of theory and research in a major contribution to professional practice.
- Thorough understanding of research techniques applicable to the field of study involved.
- Ability to document the results of research undertaken in a major thesis or project report and in refereed academic or professional publications.

Graduates at this level should:

- Consistently apply their advanced knowledge and/or professional understanding to the further development of knowledge and practice in their field, contributing significantly to the development of new insights and strategies.
- Provide effective leadership in their field addressing significant emerging issues and communicating their ideas and conclusions effectively to specialist and non-specialist audiences.
- Deal consistently and sensitively with complex ethical issues in academic or professional contexts and take initiative in ensuring appropriate resolution of wider issues affecting the wider community.
- Behave in ways that are consistent with Islamic values and beliefs, and reflect high levels of loyalty, responsibility, and commitment to service to society.

5.6.3 Learning Outcomes in Each Domain at Level 6

Knowledge

Has thorough understanding of a substantial body of knowledge in a discipline or professional field, including both specific information and underlying theories, principles and concepts. Knows about the latest developments in the field including emerging issues and research techniques and the potential challenges in developments for generally accepted conclusions. For doctoral studies in a professional field, has thorough and extensive knowledge of changing practices locally and internationally. Has thorough knowledge of developments in related fields that potentially impact on the area of inquiry or professional practice.

Cognitive Skills

Is able to apply advanced theoretical insights and techniques of inquiry in the creative analysis of major issues and problems and development of innovative solutions.

Can synthesize research and theoretical writings and develop new and creative insights based on the integration of ideas from within and outside the special field of advanced study.

Can design and carry out major research or development projects to deal with complex issues involving development of new knowledge or significant improvements in professional practice.

Interpersonal Skills and Responsibility

Acts consistently with a high level of autonomy and initiative in professional or scholarly activities.

Takes full responsibility for own activities, and evaluates and works to improve personal effectiveness through objective feedback and constructive planning for improvement.

Facilitates constructive interaction in group activities and exercises effective leadership in complex professional and social environments.

Deals consistently and sensitively with complex ethical issues, makes informed, fair, and valid judgments, and acts or communicates conclusions in ways that are fully sensitive to the concerns those affected. Takes initiative in raising deficiencies in existing codes of practice for possible review and amendment.

Communication, Information Technology and Numerical Skills

Communicates effectively and at appropriate levels with academic and professional audiences and the wider community through informal and formal reports and presentations and academic and professional publications, including a major thesis or project report on a complex and significant issue.

Routinely evaluates and makes effective use of mathematical and statistical data, and uses a wide range of appropriate information and communications technology in investigating issues and in communicating conclusions and recommendations.