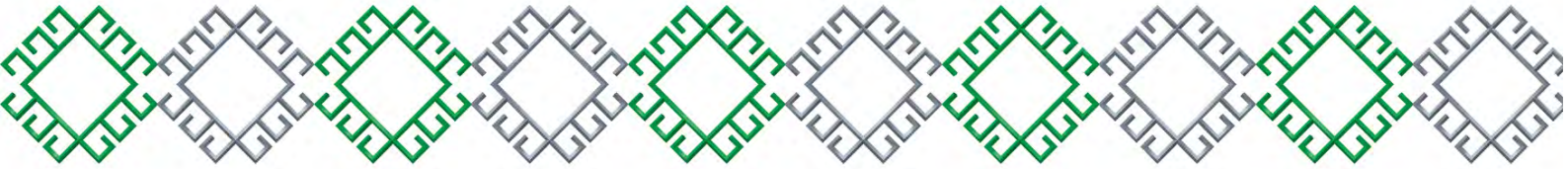
A GUIDELINE

FOR ALIGNING ACADEMIC
PROGRAMMES TO THE ARMENIAN
NATIONAL QUALIFICATIONS FRAMEWORK

ALIGN

ACHIEVING AND CHECKING THE ALIGNMENT BETWEEN ACADEMIC PROGRAMMES AND QUALIFICATION FRAMEWORKS



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ALIGN NATIONAL TEAM AND NATIONAL GUIDE AUTHORS:

Susanna Karakhanyan, *INQAAHE President, SAFAA Advisor to the Rector, Align Management team member*

Luiza Militosyan, *Head of the Chair of Pedagogy and Foreign Language Teaching Methodology, Align Project Coordinator, YSULS*

Ruben Topchyan, *ANQA director*

Kristine Soghikyan, *Head of the Chair for English Communication and Translation, YSULS*

Aram Baykov, *Head of Academic Programmes Division, YSMU*

Mkrtich Ayvazyan, *Vice Rector for Education and Science, SAFAA*

Robert Khachatryan, *Head of the Chair on Education Management and Planning, YSULS*

Varduhi Gyulazyan, *Senior Specialist at the Institutional and Programme Accreditation Division, ANQA*

Ani Mazmanyan, *Coordinator at the Center for Quality Assurance, YSULS*

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YEREVAN 2017

Dear Colleagues,

ALIGN is one of the initiatives of the International Network of Quality Assurance Agencies in Higher Education (INQAAHE) and a joint endeavor of thought leaders in the Armenian, Russian, Ukrainian and European Union higher education to move the reform agenda in a post-Soviet context to a new level of performance in line with the international trends. The team was guided by the accumulated experience of academic program development and operationalization in Europe while striving to come up with innovative techniques ensuring achievement of academic program alignment with the National Qualifications Frameworks (NQFs) as well as measuring the quality of achieved alignment.

INQAAHE is a global (umbrella) network of quality assurance providers in higher education. It is the first ever network in the field established in 1991 to ensure a productive collaborative platform among the providers as well as promote research and innovation in quality assurance. Currently, INQAAHE has around 350 members, both external and internal quality assurance providers, coming from all over the world. The contribution of INQAAHE to the field of quality assurance in higher education is immense and it continues to successfully serve its noble mission.

The 4-year journey of the ALIGN project was full of learning into the post-Soviet system of academic program development and implementation, the accumulated experience of the EU HEIs as well as hard work of the whole consortium to develop the most compatible and, in the meantime, legitimate techniques of assuring relevance of academic programs and the outcomes to the socio-economic needs of Armenia, Russia, and Ukraine.

The current guidelines for the Armenian higher education system is the culmination of the ALIGN project and at the same time launch of a wider process of alignment of academic programs with ANQF and promotion of relevance of qualifications at the national, regional and international levels. The team behind it guided by the European partners and led by the National Center for Professional Education Quality Assurance (ANQA) and thought leaders from the YSULS, YSMU, and SAFAA have joined their efforts to benefit the HE in Armenia by developing the guidelines in the hope to kick off wider implementation at the system level. We hope the key stakeholders find it useful in their journey of alignment and measurement of alignment with ANQF.

The INQAAHE team behind the initiation of the project were as follows: David Woodhouse, former president and one of the founders of INQAAHE, Carol Bobby, former president of INQAAHE, Iring Wasser, former INQAAHE board member. All the wise guidance received from INQAAHE during the project development and implementation was an invaluable input worth highest appreciation from all the stakeholders involved.

We also extend our highest possible appreciation to the European Commission and its Education, Audiovisual and Culture Executive Agency, the National Erasmus + Offices in Armenia, Russia and Ukraine, the Ministries of Education, quality assurance bodies, student and employer unions and the host institution YSULS, for the invaluable contribution to the project implementation and sustainable development of HE systems in Armenia, Russia and Ukraine.

Susanna Karakhanyan, PhD

INQAAHE President, Project Author and Member of Coordination Team

CONTENTS

INTRODUCTION

Alignment is typically understood as the agreement between a set of content standards and an assessment used to measure those standards. In education, alignment entails the improvement of specific academic programmes by internal decision making through an on-going and cyclical process of evidence-based internal quality assurance. Alignment does not constrain in any way the academic autonomy of either institutions or departments in terms of decisions related to content and methodology of academic programme design.

Alignment in education primarily deals with learning outcomes at different levels and from different perspectives within academic programmes, hence alignment in education is possible in the case of the adopted and implemented outcomes-based approach.

"Alignment" is defined as the act of aligning or state of being aligned, hence in Armenian this term is rendered through 2 words of the same root, yet with differing derivational affixes – one indicating the process of aligning, and the other denoting the state of being aligned, «համապատասխանեցում» and «համապատասխանություն» respectively.

With a large number of stakeholders in education and due to the wider context of national and international settings, as well as work field requirements, alignment presupposes a number of logically sequenced steps and activities with the use of a toolset to document the rationale behind curriculum design and content decisions aimed at alignment.

Academic programme alignment is seen as two-dimensional, along the vertical and horizontal axes. In other terms, academic programmes are aligned hierarchically, with umbrella and higher-level regulatory frameworks, and internally, ensuring a match among teaching and learning activities and assessment practices ("constructive alignment", Biggs, 1999). An institutional package of policies and procedures will be required to endorse the process of alignment.

The alignment of an academic study programme's learning outcomes with existing frameworks, the National Qualifications Framework for one, as well as the alignment of inherent programme elements is normally examined through a typical accreditation/validation process.

Hereby, the proposed *Guidelines for Aligning Educational Programmes to National Qualifications Framework* provides recommendations regarding the methodological and procedural aspects of programme alignment and contains a number of tools that may facilitate the process of alignment and assessment of achieved alignment.

CHAPTER 1. THE CONCEPTUAL FRAMEWORK OF ACADEMIC PROGRAMMES ALIGNMENT

In the context of internal quality assurance, the HEI bears primary responsibility for aligning and internally checking the alignment of academic programmes with the NQF. Achieved, implemented and proved alignment is a condition ensuring the quality of academic programmes.

Alignment of academic programmes may take place in two circumstances, namely when designing a new academic programme or revising an already existing one. In either case, activity will target the creation of Intended Learning Outcomes (ILOs) that reflect the requirements and expectations set forth in the NQFand other regulatory provisions (legislation, institution's mission and so on). Hence, we will consider the two settings as very similar with very slight differences in the course of action which, however, do not significantly affect the sequence of the steps to undertake.

Since alignment of academic programmes is closely related to the principles underlying the development of any academic programme and designing an academic programme document, this section of the Guideline will briefly address the main issues in the development of an academic programme.

An academic (study, professional or vocational) programme is defined as a degree-award driven curriculum, intended for the acquisition of knowledge, skills, and competences by the learner via a combination of formal institutional instruction, complemented by apprenticeships, internships, training, and employment (especially in the case of work-integrated learning).

An academic programme is thus an institutionalized content unit with a specifically and primarily established and fixed mission, goals, objectives and the intended learning outcomes of the program, the latter being the preliminary conceptual framework of the body of knowledge, skills and competences that any graduate of the program is believed to have in the case of the successful completion of the program.

As it has already been mentioned earlier in the document, alignment is the conscious process of cyclical and internal improvement of the study program for the ultimate harmonization with the established qualification and professional standards. However, when speaking about the process of alignment at the academic program level it is important to consider that alignment shall be organized along two axes to ensure:

1. A match between the intended learning outcomes of an academic program with the established standards at the national level (vertical alignment) (with probable and preferably regular national and international benchmarking with the best practices existing domestically and abroad); and
2. A logical consistency and continuation between the teaching, learning, and assessment policies and practices in the course of the implementation of the study programme, as well as the learning environment, resources and support infrastructure (horizontal/constructive alignment).

Vertical Alignment

The vertical alignment of academic programmes is supposed to take place at two levels:

- NQF descriptors – Intended learning outcomes of the academic programme and
- Academic programme learning outcomes – academic programme unit[1] learning outcomes.

[1]In this Guideline the term "unit" will be used as a more abstract term for "module" and "course". Thus, a unit in this document refers to "a unit of teaching that has a clear set of learning outcomes and culminates by summative assessment."

The seemingly narrow scope of alignment between the NQF and the academic programme learning outcomes contains a large number of elements inherent to the educational setting that need to be considered in the process of vertical alignment. Particularly, academic programs shall be designed and provided by associated learning outcomes which should be in line with the mission statement and profile of the HEI including its regional context. This means that when speaking of vertical alignment, undisrupted and logical continuity should be assured among the NQF descriptors for a specific qualification and degree, the institution's mission and the ILOs of the academic program.

All the above mentioned leads to the need for an in-depth understanding of the learning outcomes approach in curriculum design and a commitment to a learning outcomes-based quality management approach since these enable the alignment of learning outcomes of study programs to outcomes defined in a National Qualifications Framework.

The National Qualifications Framework is a description of mutual relations between qualifications, which aims to integrate and coordinate national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society. In particular, it describes the hierarchy of qualification levels – each qualification is linked to one of these levels.

According to another description, National Qualifications Framework (higher education) is a single description, at national level or a particular level of an education system, which clarifies and explains the relationship between higher education qualifications. The NQF demonstrates a new approach to the concept "qualification", attaching primary importance to the learning outcomes and highlilghting what knowledge, skills and competences a graduate should have for being awarded the respective qualification.

National qualifications frameworks are internationally understood and clearly describe all qualifications and other learning achievements in higher education and relate them coherently to each other. (ECTS Users' guide)[2]

Qualification descriptors are general statements indicating the learning outcomes relevant to a qualification at a given level, defined in terms of knowledge, skills and competence, their breadth, complexity and diversity at each NQF level. Assumptions about the volume of learning that is likely to be necessary to achieve the intended outcomes are made when designing an academic programme.

[2]The issue concerning **"sectorial qualifications frameworks"** has risen in some sectors (clusters of professional activities based on their main economic function, product, service or technology) in the recent years. The objective is to make visible and understandable qualifications awarded by sectors, to create a mutual trust with national and European authorities.

KNOWLEDGE is what a graduate knows and understands. Knowledge is described in terms of breadth, depth, types and complexity of knowledge.		
Strand	**Sub-strand**	**Description**
Knowledge	Breadth	How broad is the learner's knowledge?
	Depth	How deep and thorough is the learner's knowledge?
	Types of knowledge	What characteristics and quality of knowing has the learner engaged in?
		✓ **Factual knowledge-** knowledge of terminology, specific details and elements
		✓ **Conceptual knowledge-** knowledge of classifications, categories, principles and generalizations, theories, models and structures
		✓ **Procedural knowledge-** knowledgeof subject-specific skills, techniques and methods, criteria for determining when to use appropriate procedures
		✓ **Meta-cognitive knowledge-** strategic knowledge, knowledge about cognitive tasks, self-knowledge
SKILLSare what a graduate can do. Skills are described in terms of breadth and complexity of skills and include cognitive, technical, communication, creative, interpersonal and generic skills.		
Strand	**Sub-strand**	**Description**
Skill	Breadth	What is the breadth of the physical, intellectual, social and other skills acquired by the learner?
	Selectivity	How does the learner select the skills learned to address a range of problems? What is the nature of the complexity of the problems and how does the learner engage with them?
COMPETENCE is the application of knowledge and skills in context. It is expressed in terms of autonomy, responsibility and accountability. Context ranges from predictable to unpredictable, known to unknown, routine to non-routine.		
Strand	**Sub-strand**	**Description**
Competence	Autonomy and responsibility	How does the learner demonstrate the taking of responsibility personally and in groups? How does the learner deploy skills acquired in managing interactions with others and working on their own?
	Self-development	To what extent can the learner operate in new environments, acquire new knowledge and skills; and assimilate these to their existing body of knowledge and skills?
	Role in Context	Can the learner apply/deploy their knowledge and skills in a range of relevant contexts?
http://www.zu.ac.ae/main/files/contents/assessment_resource/support_docs/QFEmirates_OutcomesGuide.pdf (p. 5)		

To ensure alignment between the National Qualifications Framework and the academic program it is important to prove and provide evidence of the match between the ILOs[3] of the academic program and the NQF descriptors. The use of the learning outcomes enables clear distinctions to be made around a study program's qualification, e.g. Bachelor/Master. Besides, the LO-based approach also enables international comparisons between programs, benchmarking, in other terms.

Normally, it is recommended that every academic program should have no more than 10 to 15 LOs. These are generic descriptions of the knowledge, skills and competences that shape the professional behaviour of an academic program graduate.

The list of active verbs (provided in the Appendix classified according to Qualification Framework strands and substrands and by Bloom's Taxonomy) that make learning outcomes achievable through properly tailored teaching and learning activities and measurable by targeted assessment may be helpful when formulating academic programme learning outcomes.

It is also helpful to use the SOLO or Bloom Taxonomies (or both) in thinking about these verbs. For example, "describe" basically means "listing a satisfactory number of points" and is multi-structural in SOLO terms, whereas "explain" requires a linking concept and is relational. These verbs refer to declarative knowledge: what students know about a topic. They do not tell us what students can do with that topic knowledge, which a verb like "design" does. The appropriate verb helps to establish the level of the ILO.

Considering the strategies for the development of programme and unit learning outcomes and targeting a set of tools that would make the alignment between the programme LOs and the NQF descriptors obvious, the appropriate practice would be to adhere to the use of the verbs presented in the Appendices, classified to reflect the NQF strands and substrands respectively. The use of the verbs will be indicative of the more or less direct relations between the NQF descriptors and the programme level LOs which can in their own turn be split into more discreet LOs at programme unit level.

When vertically aligning the Intended Learning Outcomes of academic programmes, it is also essential to consider alignment with the following reference points:

- The mission of the programme (as in line with the overarching mission of the university),
- The main goal and the objectives of the program, and
- The intended learning outcomes of the program,
- The units that construct the wholesomeness of the program,
- The consistency and the soundness behind the LOs of individual units as the more voluminous, yet relatively autonomous structural blocks within the programme,
- The appropriateness and hierarchy of the intended learning outcomes of the units that are built up to form the more generic and overarching ILOs of the program.

The institution's mission is a clearly defined, comprehensive, and published statement that is specific to the institution and appropriate for higher education. The mission statement addresses teaching, learning, research, and public service. A mission statement is a general, concise statement outlining the purpose guiding the practices of an institution. Students' learning outcomes derive from the mission statement of the institution. **The mission of the program** should be aligned with the general mission of the university. This is central to communicating the content of the program to the wider community of end-users, since a highly research-oriented institution is not very likely to deliver applied skills oriented

[3]It would be essential here to highlight the difference between Intended Learning Outcomes (ILOs) and achieved learning outcomes (ALOs). ILOs describe the learning outcomes that the programme coordinator or instructor intends that the learners will attain as a result of teaching and learning activities which at least need to have been attained throughout the study period to lead to the award. Achieved learning outcomes are the expression of the set of knowledge, skills and the application of knowledge and skills a person has acquired and is able to demonstrate as a result of learning.

programmes.

The mission of the academic program, as the overarching description of the program content and tasks, is normally translated into its **goals and objectives.** These are traditionally smaller and more discreet descriptors, normally deriving from the general mission and the ultimate goal of the academic program. Goals describe broad learning outcomes and concepts (what you want the students to learn) expressed in general terms. Goals should provide a framework for determining the more specific educational (learning/behavioral) **objectives of a programme** and should be consistent with the mission of the programme and the mission of the institution.

Learning/behavioral objectives describe the intended purposes and expected results of teaching activities and establish a foundation for assessment. Objectives are brief, clear statements that describe learning outcomes of instruction, that is to say specific skills, values and attitudes students should show that reflect the border objectives. Objectives describe in detail the behaviors and specific types of performance that students will be able to demonstrate and actualize at the end of a unit of instruction and the conditions and the criteria, which determine the acceptance level of performance.

When formulating academic programme objectives, it is appropriate to focus on student learning rather than an instructor teaching, describing how a student should demonstrate the achievement of knowledge, skills and competences. Normally the AP objectives are included in the academic programme descriptions, guides, and other package documents and should be posted online and disseminated among the stakeholders (faculty members, deans, administrative staff and students). AP objectives serve as a basis for the development of programme units, support student-centred education and informed teaching.

As it can be seen from the reference points enumerated above, learning outcomes are represented at different levels, namely at:

- **Programme Level:** to be attained when the students complete the program and
- **Unit Level:** to be attained when the students complete the unit.

Programme Learning Outcomes focus on what students will learn, rather than on what teaching will "cover." These should be known by all major stakeholders, including the teaching staff, fieldwork supervisors, student support personnel, and students. Programme LOs guide course and curriculum planning so that students experience a cohesive curriculum and encourage students to be intentional learners who direct and monitor their own learning. They highlight assessment efforts and trigger teaching staff conversations on student learning.

Learning outcomes are statements that describe significant and essential learning that learners have to achieve. The learning outcome approach to education means basing programme and curriculum design, content, delivery and assessment on the analysis of the integrated knowledge, skills and values needed by both students and society. Learning outcomes are more student-centred and describe what it is that the learner should know and be able to do in specific settings. The outcome statement also informs students how they are expected to change as a result of learning.

The learning outcomes should define the minimum level of student achievement. Academic Programme learning outcomes define what a student should know, understand and be able to do by the successful completion of the programme.

Thus, when developing an academic programme, it is important to consider the larger paradigm shift in higher education where the learner has been moved to the centre of all teaching and learning activities as not only the consumer or the beneficiary, but also as an active agent. In light of the student-centred education and the LO-approach in curriculum design, the two-way cyclical approach is expedient

– the downward movement from the more general LOs down to the individual LOs of the constituent units and the bottom-up movement, to prove the accruement and agglomeration of the lower level LOs to cumulative higher level LOs.

A Unit is a constituent part of an academic programme which is a process that enables prospective learners to attain the specific minimum Intended learning outcomes reliably and efficiently in terms of learner effort via the study environment, the mode of learning, staff support provided, intended workload, resources provided and assessment of intended learning outcomes.

Unit learning outcomes need to be specific in describing what a student will know and be able to do at the end of the course – in short, they need to be assessable. Besides, unit learning outcomes establish the content and the range and types of teaching and learning activities that students will experience. Unit LOs also form the basis of assessment activity, inform students of what is expected of them, and contribute to the achievement of one or more programme outcomes.

Obviously, the second phase of vertical alignment takes place between programme learning outcomes and unit learning outcomes. At unit level, each unit of an academic program also has defined learning outcomes which are also designated at an NQF level and is given an appropriate credit weighting reflecting workload of both contact hours and independent study.

Horizontal or Constructive Alignment

Horizontal or constructive[4] (Biggs, 1999) alignment is defined as "a fundamental principle for course design in higher education. It is the underpinning concept of the current use of Learning Outcomes and assessment criteria, and indeed programme specifications. It reflects the fact that the learning activity in the intended outcomes needs to be activated in the teaching if the outcome is to be achieved and in the assessment task to verify that the outcome has in fact been achieved. This kind of alignment is achieved by ensuring that the intended outcome statement is present in the teaching/learning activity and in the assessment task.

Horizontal alignment entails the correspondence between the general teaching strategies, assessment policies and resources to support student learning and development of knowledge, skills and competences as set in the Intended Learning Outcomes of the programme. In other words, the learning outcomes are constructively aligned to the pedagogic methodology and to the assessment methods (Biggs and Tang, 2007) that enable students to demonstrate achievement of the learning outcomes set.

To ensure alignment among the teaching and learning activities and assessment, it is appropriate to briefly present the forms and the methods of teaching normally practiced at higher education institutions. The forms and methods of teaching are often determined by the mode of the provision of instruction which may vary (for example, full and/or part-time; face-to-face, low-residence, distance, online, blended, intensive summer-school, collaborative (with employers, professional association and/or other HEI)).

A section on the forms and methods of teaching with an unfinished list of various pedagogic practices is presented in the Appendix.

Evidently, when speaking of horizontal alignment, the cohesion of all teaching and learning parame-

[4] The framework of constructive alignment was developed by John Biggs. It stands on two basic pillars. It is founded both on a view on student learning ("constructive") and a principle for designing "good" educational events, ranging from lessons to courses to programs ("alignment"). Biggs view on student learning is inspired by constructivism. Learners are said to 'construct' knowledge by their own activities, building on what they already know. Constructivism is argued to be a helpful tool for thinking about teaching as it emphasizes what students have to do to construct knowledge. Biggs further argues that if learning of significant depth is to happen, certain basic conditions need to be met: There should be clear goals for the activity. The students should perceive these goals as meaningful. The assessment should appropriately test the fulfilment of the goals, and there should be student-teacher atmosphere characterized by an open dialogue. At the same time, Constructive alignment is widely being applied as a general approach for improving the education quality

ters matter in the selection of forms and methods of teaching and learning to enhance the effectiveness of instruction within the specific mode of training provision. The harmonization of these activities with assessment is highly important as a means of proving the achievement of LOs by the students. Hence, it is appropriate to have a comprehensive understanding of all the types of assessment – that "of learning, for learning and as learning." All these three kinds of assessment are actualized within activities that can be classified into formative and summative assessment.

- Formative Assessment: Formative assessment activities are generally on-going in-class assessments carried out throughout a course. They provide feedback on each student's work and help the teacher to make needed adjustments in instruction on an on-going basis. Formative assessments are integrated into the process of instruction. Formative assessments, including informal in-classroom and benchmark assessments, provide opportunities for teachers to modify their instruction, reteach essential content, and provide extended learning opportunities to ensure that students master essential content.
- Summative Assessment: Summative assessment activities are conducted to determine a student's acquisition of content. Sometimes tied to accountability, assessments are given to ascertain a student's performance as well as an institution's or district's performance at the end of a course unit or semester.

Both formative and summative assessments may inform the continuous improvement of the academic programme, as well as the employability of students, also in the context of alignment of academic programmes and constituent units.

A consistent and coherent assessment policy makes academic programmes look solid to all the parties of the educational process. The above-described alignment to the already established learning outcomes is vital from the perspective of the selection of assessment approaches and strategies that ensure not only the measurability of LOs, but also quantify the results in a fair, valid and transparent manner. Hence, the programme document and the course guides need to contain information about the assessment policy or strategies, thus communicating assessment terms and conditions to the students.

Assessment policies normally relate to and contain the design and specification of activities or tasks that students undertake to support their learning. They provide for feedback as guidance for students' learning; include moderation of assessment activities; explain award of marks; and set the criteria for the determination and award of final result grades.

Academic programme assessment policies establish the balance between formative and summative assessment. Assessment is normally weighted against the general workload of the module/course/unit and the time spent for and on the assessment activity is also calculated as student workload. For example, a 10-credit unit may have two large assignments and an exam (duration – 2 hours) while a 5-credit unit may have only one assignment and an exam (duration – 1,5 hours). The weighting may vary, in some cases with 50% - 50% for formative assessment and examinations respectively, in other cases with heavier weight for formative than summative assessment. In project-based units the weight of assessment activities is determined on a case-by-case basis. Integrated, cross-unit assessments are used, if appropriate, with one assignment activity supporting assessment across a number of units. Capstone assessment is normally implemented to sum up a set of units (with a larger sum of credits, for example 20). Usually, capstone assessment aims to evaluate the cumulative knowledge, skills and competences which is why it is administered late in the cycle, closer to graduation.

Though assessment activities at unit level are developed by individual teachers, they should be in line with the general academic programme assessment policy and should be accordingly mapped to the academic programme learning outcomes. The fairness and validity of assessment (exam tests, papers and

cards) are verified through adherence to general institutional and departmental regulations and review by peers and external examiners.

To meet the requirement for fair and transparent assessment, assessment activity schedules and grading rubrics, as well as other issues related to the administration of assessment activities, such as exam dates and procedures, retake procedures, submission deadlines, cases of possible extension, academic dishonesty implications, terms for grading and feedback, appeals etc., are communicated to the students ahead of time.

Thus, when speaking of horizontal or constructive alignment, it is essential to note that constructive alignment proper starts at Module/course/unit ILO level. It is important to get Unit ILOs right since they define what is to be learned, and provide the link between designing Teaching and Learning Activities and Assessments. Prior to assessment it would be appropriate to consider the that when the ILOs contain verbs like “design”, “reflect”, “hypothesise”, “generate” and so on, expository teaching methods like the lecture may be important to tell the student about the task, but clearly other methods of teaching and learning will be necessary to help the student do the task. The key is to provide a context that requires the same action by the student that is already contained in the ILO verb(s), in this manner ensuring consistency and continuity between declared ILOs and the actual educational process. The TLAs for “Solve problems in unfamiliar domains,” for example, involve presenting problems in contexts the students have not been taught directly to solve. This would probably need enabling TLAs, such as providing carefully structured hints either directly or by software. Students can then in groups or in a chat room discussion reflect on each hint, and out of their shared conceptions of the problem and the available information, work towards a solution. It is worth remembering that making the students do the work is not only educationally sound — directly relating to the attribute of lifelong learning — it lets the teacher off being the constant source of information. TLAs can be teacher-managed, peer-managed or self-managed. Each has its place, serving different ILOs.

Student feedback is essential for learning and for measuring and assessing the attainment of intended learning outcomes. (Biggs and Tang, 2007)

CHAPTER 2. ACADEMIC PROGRAMME ALIGNMENT PROCEDURES AND METHODOLOGY AT HEIS

Since alignment suggests itself as a continuous, cyclical, data-driven and evidence-based reform in an LO-based education setting, it should follow a certain sequence of actions which can be conventionally categorized into pre-alignment, alignment proper and post-alignment activities.

Pre-Alignment Activities

Partnership should begin with the pre-alignment activities prior to taking on the steps outlined for the alignment process.

1. Establish working groups and a plan of operation and timeline for the completion of the alignment process.

The working group responsible for the LOs development should involve highly qualified specialists and professionals of the field (both faculty members and administrative staff). One of the members can be nominated as a group leader and will coordinate the effective implementation of the process. The working group is responsible for the development of a detailed action plan which should be approved by the university. The official decision on the establishment of the working group should be made with the provision of certain authorities and resources. The selection of the alignment team offers a beginning point for the pathways and academic programmes' work. Members of the alignment team should include academic programme-related instructional staff. Realizing that the decision to develop or improve an academic programme as well as the scope and breadth of the pathway is determined by the larger partnership, the alignment team is primarily composed of content experts for each constituent unit included in the programme. The alignment team members do their work collectively and independently, depending on what needs to be accomplished. What is most critical is to develop a plan of operation that allows the team members to do their work in the most productive manner. Members of the larger partnership, including educational administrators, curriculum specialists, and business and industry representatives, may assist the team with the alignment of content in programmes and related coursework. Discussions about the desired outcomes that students should attain will assist the team's engagement in the curriculum alignment process. Determination of each team member's role—whether responsible for addressing horizontal alignment or vertical alignment—provides a clear picture of the individuals who need to be included in the team.

2. Establish a comprehensive industry cluster-based partnership. This partnership, composed of leaders of education, business, industry, and community organizations, identifies key challenges and problems facing the specific industry sector and related programmes. Upon the selection of a key problem associated with industry cluster-related programmes, the partnership and each partner commit to addressing the problem with time and resources to ensure that programme improvements are made to enhance student performance and success. If the programme needs cannot be addressed with existing curriculum, the partnership may recommend that a new academic programme can be developed to address labor market needs. Desired students' learning outcomes for the academic programme are identified by the partnership.

3. Identify, select, and analyse student learning outcomes data. This step involves the collection of data to determine how students perform in the selected academic programme or how its gradu-

ates perform on the labour market. This process identifies the gaps in students' achievement and performance. The team then analyses and interprets student results to focus on the problem(s) initially identified in the first phase of the improvement effort.

4. **Benchmark the national and international practices related to the qualification/academic programme (either planned or under review).** To develop/revise AP learning outcomes first of all needs analyses and study of the best practice is important. Benchmarking, a systemized process which enables to study the best practice at different institutions and to adopt procedures and new approaches to improve the educational processes at the institution in line with its mission, is undertaken at this stage. The phases for the benchmarking and the template are provided in the Appendix.

5. **Develop/revise the mission, goal and objectives of the Academic Programme.** The academic programme mission, goal and objectives as well as learning outcomes should be a basic background for the stakeholders and enable the alignment of the courses with the NQFs.

6. **Develop/Revise Academic Programme Learning Outcomes.** Programme learning outcomes start with a prompt phrase, such as: 'On successful completion of this programme the graduate should be able to….'Action verbs appropriate to the knowledge, skills and competence you want to convey follow. The relevant templates and tables regarding mapping against award level, strand and substrand are helpful in the course of the development/revision of LOs. Aiming for a minimum of two LOs per strand guarantees a relatively full coverage of the level spectrum. Sometimes more than one sentence can be drafted to communicating a programme LO as they are broad in their scope.[5]

Alignment Activities

The activities for the actual alignment of academic programmes should follow the lines and focus on the points of reference described and presented above. Namely, it would be practical to start the alignment between the NQF descriptors and the programme LOs to make sure that the LOs contain knowledge, skills and competences, specified in the NQF descriptors for concrete levels. This can only be done following detailed reflection and analysis (such as proposed in the pre-alignment steps), the self-evaluation of a proposed study programme against explicit, elaborated criteria, following stakeholder consultation, data collection, national and international benchmarking and an analysis of the current situation.

The Bologna Declaration provisions, EQF, as well as national legislations and NQF, the expectations of all the stakeholders, including the work field, inform and condition choices in the course of curriculum design which is duly and preferably benchmarked against other international peer programmes. The incorporation of all the above-mentioned provisions and parameters ensure a well-substantiated understanding of the requirements to facilitate and promote academic mobility due to the high quality and aligned principles of education. The competence-driven Intended Learning Outcomes of an academic programme should incorporate the competences described in the descriptors of the NQF, the competences in demand for the field of professional activity (that is the requirement and the interests of the employers' community), as well as the competences, selected by the students with a conscious benchmarking with other international peer programmes.

[5] To have the LOs documented and effectively communicated to the students, it is advisable to create and circulate a programme handbook which may contain a template of programme specifications and description of programme LOs,unit learning outcomes, teaching, learning and assessment methodologies as reflecting the programme and the unit learning outcomes, credit allocated to each programme – in accordance with agreed credit ranges for award type, title, access, transfer and progression as clearly described in programme document and related materials.

- Programme LOs as referenced with the National Qualifications Framework award type descriptor,
- Unit learning outcomes as collectively leading to the achievement of the programme learning outcomes,
- Teaching, learning and assessment methodologies as reflecting the programme and the unit learning outcomes,
- Credits allocated to each programme – in accordance with agreed credit ranges for award type.

Below please find the steps to undertake in the process of aligning academic programmes:

1. **Determine the extent to which the programme learning outcomes cover the range of NQF descriptor details** in terms of the strands and substrands proposed in the NQF for the body of knowledge. This exercise helps to identify the gaps between the NQF requirements for the qualification and the Intended Los of the proposed academic programme.

2. **Determine the level of inheritance from the higher level NQF descriptors down to the academic programme LOs.** This is possible to do by means of discursive analysis of the NQF descriptors in order to single out the key words specifying the types, breadth, complexity, selectivity, context and other elements of knowledge, skills and competences. Since the overarching and umbrella descriptors of the AP LOs state what the graduates of the programme will be able to do as a result of their education, they do not refer to concrete body of knowledge (including the skills and competences). That is why a matrix that elicits the relationship among the NQF descriptors, the AP LOs and the body of knowledge (programme content) to trace the relationship among the NQF and LO statements to either prove or ensure alignment.

3. **Map unit learning outcomes to Academic Programme LOs.** This reveals the interrelation between intended learning outcomes at the two different levels. As in the case of the semantic analysis of descriptors and LOs, the verbs listed as indicative of learning and competence, help to detect and trace the relations and inheritance in the top-down hierarchy which, in reverse order, will add up to the aggregated LO at programme level through the set of units to achieve the established knowledge, skills, and competences. The mapping of AP LOs against NFQ descriptors, the underpinning programme content, and unit Los will lead to the next logical step: assessment of alignment.

4. **Assess alignment to identify gaps and unnecessary duplication.** The review of the qualification and behavioral/learning objectives (i.e., identification of where they are currently being addressed, locate the gaps and the tactics of addressing and eliminating them) is completed in this step. This process ensures that the content is current and sequenced in a way that is meaningful to learners and enables the achievement of intended outcomes. In case gaps are identified, the alignment team will undertake the introduction of new units or revision of units and unit content, entailing recalculation and reallocation of credits.

5. **Revise the curriculum** to reflect the desired unit sequence, unit credits, and student learning experiences to be made available at each level of the academic programme. The new curriculum accommodates the behavioral/learning objectives that have been identified for inclusion in the programme but may not be currently addressed in the units comprising the academic programme. At this time a determination is made regarding whether new units need to be added to the programme sequence or if

existing units can be modified to address the new knowledge, skills, and competences. In the case of an entirely new programme, qualification and behavioral/learning objectives are aligned with all the units and student-learning experiences are identified as a part of the course sequence.

6. **Start curriculum mapping.** Through curriculum mapping, each instructor develops a framework of instructional units relating to the pertinent standards and objectives, producing a visual that can be developed and discussed among like-content area instructors, as well as instructors of different subject matter for cross-curriculum connections.[6]

7. **Align prerequisite knowledge and skills** (with unit requirements, assessments, certifications, and credentials to be attained at the completion of each course) and identify, develop, and/or adapt assessments that produce valid and reliable results for all students. This step involves looking at the academic programme from the most advanced coursework and certification/credential to be attained at the completion of the programme—a process that is called "back-mapping." This approach provides a picture of the prerequisite knowledge and skills for each unit and the level of instruction leading to completion. Additionally, this review provides the key concepts and foundational themes that permeate the entire programme, which is a necessary discovery for establishing or improving a career-focused orientation course.

8. **Developunit descriptions and identify instructional strategies,** emphasizing contextualized, work-based[7] , and problem-based learning opportunities, when all the gaps have been recognized and addressed in the mitigation decision-making process. This is where horizontal alignment starts. During this step, the identification of how knowledge, skills, and behavioral/learning objectives will be taught occurs. Consideration is given to the level of content acquisition desired, as well as the variety of learning styles demonstrated by the students. Ensuring there are multiple approaches to addressing the same content is essential, especially if addressing a level and/or unit in which specific content is to be mastered.

9. **Constructively align learning outcomes to the pedagogic methodology and to the assessment methods** (Biggs and Tang, 2007). When endeavouring to align learning outcomes, the following approach may be useful:

- state intended learning outcomes,
- select learning activities to facilitate achievement of learning outcomes,
- identify appropriate assessments to enable students to demonstrate achievement of learning outcomes,
- consider how the unit learning outcomes relate to the programme outcomes and other unit learning outcomes though consultation with the programme team, and
- review and revise learning outcomes, teaching and learning activities and assessment.

10. **Determine the types of assessments** that are needed to measure student performance, as well as program improvements needed after alignment modifications are in place. This is key to continuous-

[6] Among other advantages, curriculum mapping can help in (a) the allocation of time for each unit of instruction, (b) the identification of when to use instructor-directed or student-directed instruction, c) types of assessments that may be useful, and (d) resource sharing opportunities.

[7] Work-based learning is an important component of programmes. An instructional strategy is key to preparing students for success. All work-based learning experiences involve interaction with industry or community professionals and are tied to student outcomes, from the provision of resource speakers in the classroom, to field trips, to intensive internships or apprenticeships in the workplace as a capstone educational experience.

ly improving the programme. The following sequence of steps may be useful:

- Inventory the assessments that are given to students on an institution-wide basis (both benchmark and summative assessments), identifying when they are given. This inventory includes determining what knowledge, skills, and standards are measured, and establishing how to inform the success of the academic programme,
- Review existing assessments to include examine alignment with content and occupational standards associated with the academic programme, and
- Identify and modify assessments to eliminate gaps between the curriculum and assessment instruments.

11. Identify resources necessary to adapt existing and adopt new curriculum, to access instructional resources, and, as necessary, develop written articulation agreements. Once gaps and redundancies in content are located at the course and programme level, after these gaps and redundancies in curriculum and instructional strategies have been established, opportunities for credit-generating alternatives (i.e., dual credit, articulated credit, credit by examination) can be discussed and articulation agreements can be developed. In addition to credit-generating alternatives, key discussions and considerations regarding articulation agreements might include the sharing of facilities and equipment, the sharing of instructional staff, the creation of work-based learning experiences, the delivery of professional development, the consultation with businesses, and the pursuit of additional funding and other resources necessary for the implementation of new academic programmes. This step also guides the partnership through defining which department, institution, or business partner is responsible for implementation of the agreed-upon courses.

12. Identify and develop student support services and offer individualized strategies to assist students who demonstrate the need for high-level support and assistance. The development of a strategy to assist students who require support in various and possibly all subject matter areas. Establishing an institution-wide support strategy as well as program-based strategies for enhancing the potential of all students to attain critical knowledge and skills is addressed during this step. Again, a focus on individual learning styles and needs is critical in this conversation.

Post-Alignment Activities

Assess alignment processes as part of the continuous improvement process. At this point, evaluation measures are identified to determine the effectiveness of the improvement strategy; in this case, a new and improved alignment process. Student performance data derived from summative assessments are collected and analysed by the alignment team and shared with the local partnership to aid in identifying the new challenges and the potential opportunities for the academic programme.

CHAPTER 3. CHECKING ALIGNMENT

Domains of Checking Alignment

Since alignment is about ensuring the quality of education, it is but obvious that it needs to be checked as part of quality assurance. In this regard, self-evaluation is an exercise aimed at the systematic and critical self-analysis leading to judgments and/or recommendations about the quality of the academic programme.

This chapter addresses the academic programme evaluation. As a collective reflection tool to enhance quality, this exercise culminates in a report which will also provide information for an external peer-review panel for an independent, external evaluation (the material for training external experts is attached in the Appendices). The self-evaluation of anacademic programme is typically conducted by the academic owners of the programme with support from quality management staff and is primarily and essentially a major internal quality assurance tool.

As an evidence-based exercise, self-evaluation entails reflection of the effectiveness of the academic programme with an analytical review of systematically collected administrative data, student and graduate evaluations of the programme through sampled surveys or focus groups, moderated interviews with lecturers and students; **the constructive analysis (not description or restatement) of the information collated in light of a specific set of criteria for the approval (alignment of learning outcomes) of an academic programme;** resulting in two outputs:

- A written report encapsulating the findings and improvement recommendations, in order to make a statement about the presence and extent of alignment,
- Complemented by an Academic Programme Handbook/Academic Programme Document which provides evidence of alignment.

The standards proposed for checking the alignment of academic programmes are primarily viewed as relating to HEI internal developments, mainly the design of the academic programme and its internal evaluations through self-evaluation. In this regard, alignment may be check in relation to two major overarching criteria:

1. Consistency of academic programme intended learning outcomes with the
   - relevant subject/professional field standards and
   - the National Qualifications Framework,
   - with clearly set prerequisites for enrolment:
2. Teaching, Learning and Assessment
   - in an appropriate academic environment,
   - in an appropriate mode of instruction and learning,
   - with appropriate assessment policies and practices,
   - due workload,
   - staff support, and
   - resources.

In order to address the criteria in a self-evaluation of an academic programme it is important to consider many concepts and details underpinning the overarching criteria statements. A sample set of questions for internal quality assurance (and those an external panel may pose) to assess compliance

with these are presented below. A self-evaluation should critically answer the questions asked.

A Questionnaire for Checking Alignment

1.1 Are the required intended academic programme learning outcomes consistent with any applicable national and international subject/professional field standard and the National Qualifications Framework?
1.2 Do the required intended academic programme learning outcomes meet the needs of any applicable national and international subject/professional field?
1.3 Do the intended learning outcomes of the academic programme correspond with the descriptions of Bachelor/Master level in the NQF?
1.4 Are the entry requirements for this academic programme clear and in compliance with national norms?
1.5 Can it be clearly demonstrated that the academic programme's prerequisite learning specification includes the knowledge, skill and competence specified at lower Framework levels?
1.6 Do the intended learning outcomes correspond with national legislation and international recommendations?
1.7 Have the academic programme and unit learning outcomes been specified describing what a student will know and be able to do at the end of the academic programme and/or unit?
1.8 Are the intended learning outcomes appropriate to the intended professional field (work field) of a graduate of this study programme?
1.9 Do the learning outcomes correspond with the needs of a beginning professional in the particular discipline?
2.1 Has careful attention been paid to curriculum and academic programme design and content?
2.2 Are the learning outcomes at academic programme level underpinned by learning outcomes at unit level?
2.3 Has the academic programme been developed so that its learning outcomes are visibly mapped to specific modules or programme units?
2.4 Are the academic programme's content and learning environment appropriate to the programme's intended learning outcomes? Specifically:
(a) Are the academic programme's staff (assessors, teachers, etc.) as a group competent to enable learners to develop (achieve) the intended academic programme learning outcomes and to assess learners' achievements and expert in their respective disciplines?
(b) Are the staff members who are to provide both academic and administrative support for the provision of this academic programme familiar with any national standards?
(c) What training/induction has been provided for these staff members?
(d) What are their precise roles and responsibilities?
(e) Are the nominated persons competent to fulfil their roles?
(f) Is the learning environment of the academic programme and its constituent units (physical, social, and intellectual and recognising that the environment may be virtual)
- and resources, such as libraries and online databases and physical resources, such as laboratories, equipment, study areas and studios;
- and human resources, such as tutors, counsellors, advisors and peers where applicable
- and other supports consistent with the intended academic programme/unit learning outcomes?

(g) How are learners represented and how is feedback obtained?
(h) Is the academic programme/unit content including reading lists, lecture notes, and any other material used by the academic programme/unit appropriate?
(i) Does the academic programme/unit make reasonable accommodation for people with disabilities?

2.7 Does the academic programme/unit involve authentic learning opportunities to enable the achievement of the intended study programme learning outcomes?
2.8 Are the academic programme's/unit's use of ECTS or other Credit systems and provisions for recognition of prior learning consistent with any national policy on these areas?
2.9 Does the academic programme/unit meet genuine education and training needs?
(a) Does the HEI have evidence that the academic programme/unit meets the proposed target learners' education and training needs?
(b) Is the academic programme as a process and are the intended academic programme learning outcomes adequately informed by the views of appropriate stakeholders such as learners, graduates, lecturers, employers, relevant advisory bodies, social and community representatives?
2.10 Has the mode of learning – distance, electronic, part-time, full-time, blended, etc. been clearly stated and is it appropriate to the cohort of intended participants and the intended learning outcomes?
2.11 Has an academic programme assessment strategy been provided for the academic programme as a whole and unit assessment strategies for each of the constituent units?
2.12 Are the academic programme and unit assessment strategies (for both formative and summative assessment) both clear and appropriate? Do they provide for the verification of the attainment of the intended learning outcomes?
2.13 Are all the academic programme and unit intended learning outcomes assessable?
2.14 Are all assessments fair, valid, reliable and transparent? Does the assessment design process ensure valid assessment of the intended learning outcomes?
2.15 Are assessment decisions in relation to design, development and variety made within an academic programme context and focused on academic programme learning outcomes?
2.16 In respect of a master's academic programme, is there a thesis in which the student shows analytical capacity or an independent problem-solving capacity at academic level as indicated in the relevant NQF descriptors?
2.17 Are the academic programme's procedures for assessment of learners consistent with any institutional or national assessment regulations for the purpose of ultimate alignment?
2.18 Do the module/unit aims and objectives map to the Academic Program's aims and objectives?
2.19 How is the introduction of the unit to the Academic programme substantiated?
2.20 Can the HEI demonstrate that the proposed unit compares favourably with other HEI programmes unit (external benchmarking)?
2.21.1 Is the study unit of the Academic Programme viable?
2.22Are the Unit teaching staff aware of Academic Program's Intended Learning Outcomes?
2.23Have the exit outcomes been established?
2.24Are the required intended Unit learning outcomes consistent with relevant Academic Program intended LOs?
2.25Has an entry standard been established? Is the prerequisite learning for participation in the Unit and are any other relevant assumptions relating to the academic programme's prospec-

tive learners made explicit?

2.26 Have the Unit learning outcomes been specified describing what a student will know and be able to do at the end of the Unit? Is this language and verb use precise and concise?

2.27 Have the academic programme's Unit learning outcomes been specified describing what a student will know and be able to do at the end of the Unit? Is this language and verb use precise and concise?

2.28 Has careful attention been paid to module content?

2.29 Do the learning outcomes at Unit level contribute to the attainment of the overarching academic programme learning outcomes?

2.30 Has the Unit been developed so that the Unit outcomes are visibly mapped to programme learning outcomes?

2.31 What evidence is there that the target/prospective learners may achieve the intended Unit learning outcomes?

2.32 Is the Unit to be provided in a way that its intended learning outcomes can be reliably and efficiently attained by the learners?

2.33 Is it reasonable to expect that all learners who are judged qualified to access this particular Module/Unit's should be able to complete it subject to their making a reasonable effort and complying with the Module/Unit's conditions?

2.34 Does the Module/Unit's compare well against benchmarks (where appropriate)?

2.35 Has clear information been prepared for students on the intended learning outcomes of Module/Unit's, content, study and learning methodology, assessment, credits, learning materials, etc. presented in a clear study programme handbook?

2.36 Has student workload been considered carefully and realistic credit assigned? (E.g. using the Gonzalez &Wagenaar Tuning documents)

2.37 Has it been verified that there are no assessments being administered which do not map to a learning outcome?

2.38 Where possible has it been determined that 'marks' are not allocated for attendance, or for the completion of units which do not align to the programme learning outcomes?

2.39 Has it been verified that the Module/Unit learning outcomes map directly to the programme learning outcomes?

2.40 Has it been verified that all Module/Unit(s) outcomes are assessed and has it been iden tified how they are assessed?

2.41 Is there awareness of the spectrum of assessment methodologies and are they utilised as relevant to the Module/Unit?

2.42 Can the assessment satisfactorily verify whether the students have realised the learning outcomes of the components of the curriculum in a way that is insightful for students?

2.43 Are the procedures for Module/Unit assessment of learners consistent with study pro gramme and institutional assessment regulations?

2.44 Is there a confidence that assessment tasks demand high standards of learning?

2.45 Is assessment and feedback planned within and across Module/Unit to ensure appropriate student preparation and practice before summative assessment takes place?

2.46 Is there an emphasis on assessment for learning over assessment of learning?

2.47 Are students encouraged to participate in disciplinary communities – communities of practice?

2.48 Is there an emphasis on building students' assessment literacy through a learning process in which they internalise, apply and reflect on assessment standards?

2.49 Are there appropriate student representation opportunities and student feed-back opportunities? Where the Module/Unit is being provided in more than one location including another jurisdiction how is this managed?

2.50 Have the specific needs of different modes of provision been considered, e.g. distance, part-time, online?

CONCLUSION

Alignment process is essential to the development and improvement of the academic programme and "can be broadly defined as the degree to which the components of an education system—such as standards, curricula, assessments, and instruction—work together to achieve desired goals" (Pearson Assessment Report, p. 2). Alignment activities provide universities with the opportunity to work together to identify when, where, and how extensively the qualifications, standards and body of knowledge associated with the academic programme will be addressed. The alignment phases, as identified in this guideline, appear linear but may also be addressed simultaneously.

Researchers have noted the importance of connections between alignment and improved student achievement. A point not to be missed is that the focus of instruction and learning is on the individual student and her/his needs, which is supported by successful alignment efforts. Working collaboratively, educators who seek to align academic programmes find ways to sequence content and support learner achievement and progression so that all students are able to succeed.

Thus, alignment targets the key reference points and constituents of academic programmes, focusing on the general educational environment and incorporating the educational requirements at the national level as well as the expectations of the professional field that creates jobs for the graduates of the programmes with appropriate qualifications. Alignment of academic programmes is seen primarily major internal and external quality assurance exercise which is enhanced by communication between different external and internal stockholders. Communication helps analysing the gaps and finding out the issues concerning different processes and aims at making team decisions on the raised issues. This Guideline has outlined a number of steps to assist the partners in working through relevant tasks included in the process of academic programme alignment.

Before dealing with alignment process, it is vital to state that the universities should adopt outcome-based approach to education. The outcome-based approach brings paradigm change to the academic programme development and review from a more input-oriented curricular design based on the description of course content, to an approach in which the course content/teaching and learning and assessment are developed in orientation to learning outcomes. In this paradigm, students are made aware of what they ought to know, understand and be able to do after completing a unit of study: i.e., the students construct the context of their learning. At the same time, it guides the instructors to develop their course activities oriented to the developed programme learning outcomes.

The "Design Down, Deliver Up" approach has been proposed by this Guideline. 'Designing down' is the approach, which moves from an analysis of the qualification to the academic programme and exit outcomes, and finally to a close examination of the outcome, its assessment criteria and other relevant information. Since the academic programme ordinarily consists of several (up to 15) outcomes, the idea is to fully analyse each outcome, and then put the analyses together in order to identify overlaps and

points at which learning and assessment could be integrated.

It is important to note that the learner achieves curriculum content which build up to the generic learning outcomes of the academic programme, and achieves exit outcomes, which build towards the purpose of the qualification. This is why it is important to design down from the purpose of the qualification or the academic programme, so that it is always foregrounded when we plan learning and assessment for the outcomes.

The 'design down' approach can be represented as follows:

1. What is the purpose of the qualification?
2. How can this purpose be achieved? What will the students need to know and be able to do in order to achieve this purpose? What values are embodied in the purpose?
3. How will you know if the students have achieved the outcomes? What evidence should you look for? In other words, how will you assess whether the students have achieved the outcomes or not?
4. How will you prepare the students for the assessment? What teaching and learning activities will produce the knowledge, skills and values required by the assessment activity?

Once the 'design down' process is complete 'delivering up' starts: this means conducting learning activities which will prepare the learners for the assessment activities. These in turn will provide evidence that they have met the outcomes and thereby have achieved the purpose of the qualification.

It is in the light of this general approach that this Guideline has sought to devise a toolkit for those challenged by the need and necessity of alignment.

APPENDICES

APPENDIX 1- LO VERBS

The use of the list of verbs below facilitates the concretization and indication of the skills in terms of their breadth and complexity.

Knowledge: Breadth and Type

Describe, define, identify, list, quote, recall, recite, recognize, write, reproduce, select, state

Skills (breadth and complexity) – Apply, assess, associate, choose, clarify, classify, compute, contrast, complete, construct, convert, decode, defend, demonstrate, describe, develop, differentiate, discover, discriminate, discuss, distinguish, dramatize, employ, estimate, examine, explain, experiment, express, extend, extrapolate, generalize, give examples, identify, illustrate, indicate, interpret, modify, operate, organize, practice, produce, recognize, report, review, select, specify, stimulate, solve, summarize, translate, use

There are three sets of verbs that respectively cover the substrands of **competences** indicated in the National Qualifications Framework:

Autonomy and Responsibility (Insight) – acknowledge, appraise, ascertain, argue, assess, challenge, choose, conclude, contrast, convince, critique, defend, differentiate, discuss, dispute, discriminate, explain, evaluate, initiate, interpret, judge, justify, predict, persuade, question, recommend, resolve, select, standardize, summarize, synthesize, value

Self-development (Learning to Learn) – Acknowledge, attempt, challenge, combine, complete, defend, demonstrate (a belief or an appreciation of), differentiate, discuss, dispute, embrace, initiate, integrate, judge, justify, practice, question, relate, synthesize, value,

Role and Context – Acknowledge, act, adhere, ask, accept, answer, assist, challenge, combine, complete, conform, cooperate, defend, demonstrate (a belief or an appreciation of), differentiate, discuss, display, dispute, embrace, initiate, integrate, join, judge, justify, organize, participate, practice, question, report, resolve, synthesize, value.

Action Verbs for Bloom's Taxonomy

Knowledge	Understand	Apply	Analyse	Evaluate	Create
define	explain	solve	Analyse	reframe	design
identify	describe	apply	Compare	criticize	compose
describe	interpret	illustrate	Classify	evaluate	create
label	paraphrase	modify	Contrast	order	plan
list	summarize	use	Distinguish	appraise	combine
name	classify	calculate	Infer	judge	formulate
state	compare	change	separate	support	invent
match	differentiate	choose	explain	compare	hypothesize
recognize	discuss	demonstrate	select	decide	substitute
select	distinguish	discover	categorize	discriminate	write
examine	extend	experiment	connect	recommend	compile
locate	predict	relate	differentiate	summarize	construct
memorize	associate	show	discriminate	assess	develop
quote	contrast	sketch	divide	choose	generalize
recall	convert	complete	order	convince	integrate
reproduce	demonstrate	construct	point out	defend	modify
tabulate	estimate	dramatize	prioritize	estimate	organize
tell	express	interpret	subdivide	find errors	prepare
copy	identify	manipulate	survey	grade	produce
discover	indicate	paint	advertise	measure	rearrange
duplicate	Infer	prepare	appraise	predict	rewrite
enumerate	Relate	produce	break down	rank	role-play
listen	restate	report	calculate	score	adapt
observe	Select	teach	conclude	select	anticipate
omit	translate	act	correlate	test	arrange
read	Ask	administer	criticize	argue	assemble
recite	Cite	articulate	deduce	conclude	choose
record	discover	chart	devise	consider	collaborate
repeat	generalize	collect	diagram	critique	collect
retell	give examples	compute	dissect	debate	devise
visualize	Group	determine	estimate	distinguish	express
	illustrate	develop	evaluate	editorialize	facilitate
	Judge	employ	experiment	justify	imagine
	observe	establish	focus	persuade	infer
	Order	examine	illustrate	rate	intervene
	report	explain	organize	weigh	justify
	represent	interview	outline		make
	research	judge	plan		manage
	review	list	question		negotiate
	rewrite	operate	test		originate
	Show	practice			propose
	Trace	predict			reorganize
	transform	record			report
		schedule			revise
		simulate			simulate
		transfer			solve
		write			speculate
					structure
					support
					test
					validate

Centre for University Teaching, Learning, and Assessment http://uwf.edu/cutla/SLO/ActionWords.

APPENDIX 2- TABLE ON ALIGNMENT OF THE AP WITH NQF

LEARNING OUTCOMES	NQF DESCRIPTORS												TOTAL
	Knowledge		Skills					Competences					
	1.1	1.2	2.1	2.2	2.3	2.4	2.5	3.1	3.2	3.3	3.4	3.5	
Learning outcome 1	1	1											2
Learning outcome 2		2											2
Learning outcome 3			2		1			1		2			6
Learning outcome 4		2		1		2		1			1		7
Learning outcome 5							2					1	3
Learning outcome 6	1	1					1		2				5
Learning outcome 7			2		1		2			1		2	8
Learning outcome 8											2		2
Learning outcome 9				1		1			1	1		1	5
TOTAL	**2**	**6**	**4**	**2**	**2**	**3**	**5**	**2**	**3**	**4**	**3**	**4**	**40**

The NQF describes the general level of knowledge, skills and competences for awarding qualifications at each educational level in the RA. At first sight, the levels of knowledge, skills and competences are described through specific texts different from the principle of describing educational level based on learning outcomes. However, a more careful observation of the text provides us with the opportunity to spot keywords or word combinations, which help to single out general learning outcomes describing knowledge, skills and competences for qualification, for instance, the ability to analyze and draw conclusions, teamwork skills, critical thinking and so on. Inserting the outcomes of NQF at the top of the chart and outcomes of the educational program on the left side we shall have the NQF – Programme LO matrix. Pointing out every Programme LO's contribution or compliance with any NQF LO one may conclude to what extent the Programme LOs cover the range of NQF descriptors and accordingly to what extent the education corresponds to the qualification awarded. According to Programme LO, 1 indicates"considerable contribution" to the formation of NQF LO (good correlation), and 2 indicates "correspondence" (strong correlation).

APPENDIX 3- NQF: INHERITANCE DOWN TO AP LOS AND CONTENT

KNOWLEDGE is what a graduate knows and understands. Knowledge is described in terms of breadth, depth, types and complexity of knowledge.

NQF MA	Strand	Sub-strand	Key words from NQF descriptors	Body of knowledge /content statements	Respective AP LOs
Demonstrates comprehensive knowledge and understanding of theories and methods of the given specialty and at the interface between different fields, some of which are at the forefront of knowledge in the field and serve as a basis for implementing autonomous research	Knowledge	**Breadth** How broad is the learner's knowledge?	given specialty and at the interface between different fields		
		Depth How deep and thorough is the learner's knowledge?	Comprehensive Knowledge and *understanding*		
		Types of knowledge What characteristics and quality of knowing has the learner engaged in?	theories and methods (factual knowledge)		
			theories and methods (conceptual knowledge)		
			theories and methods (procedural knowledge)		
			basis for implementing autonomous research (Meta-cognitive knowledge)		

SKILLS are what a graduate can do. Skills are described in terms of breadth and complexity of skills and include cognitive, technical, communication, creative, interpersonal and generic skills.

NQFMA	Strand	Sub-strand	Key words from NQF descriptors	Body of knowledge /content statements	Respective AP LOs
Can apply in an integrated way the conceptual and methodological principles of the field for solving theoretical and practical problems with incomplete information or in new and unfamiliar situations within the specialty area (or interdisciplinary fields) Can use professional communication means to communicate coherently one's conclusions and research results to the specialist and non-specialist audiences Can apply ICTs to solve new complex problems and support research in the respective field Can analyse and evaluate relevant quantitative and qualitative data within the field to draw conclusions and make decisions on the basis of incomplete or limited information Can investigate and generate new ideas, concepts, theories and/or research issues related	Skill	Breadth What is the breadth of the physical, intellectual, social and other skills acquired by the learner?	an integrated way the conceptual and methodological principles of the field in the respective field specialist and non-specialist audiences related to the specialty area solving theoretical and practical problems with incomplete information or in new and familiar situations within the specialty area (or interdisciplinary fields) to communicate coherently one's conclusions and research results to the specialist and non-specialist audiences apply ICTs solve new complex problems support research analyse and evaluate relevant quantitative and qualitative data draw conclusions and make decisions on the basis of incomplete or limited information investigate and generate new ideas, concepts, theories and/or research issues		

COMPETENCE is the application of knowledge and skills in context. It is expressed in terms of autonomy, responsibility and accountability. Context ranges from predictable to unpredictable, known to unknown, routine to non-routine.					
NQF MA	Strand	Sub-strand	Key words from NQF descriptors	Body of knowledge/content statements	Respective AP LOs
Can deal with complex issues and problems in a specialized field of work or study, manage unpredictable work situations requiring new approaches with autonomy and professional independence, contribute to the advancement of professional knowledge, practice and research, take on lead responsibility in a team for the work of others and demonstrate leadership Is able to identify his/her own learning needs and continue study in a self-directed manner	Competence	Autonomy and responsibility How does the learner demonstrate the taking of responsibility personally and in groups? How does the learner deploy skills acquired in managing interactions with others and working on their own? Self- development To what extent can the learner operate in new environments, acquire new knowledge and skills; and assimilate these to their existing body of knowledge and skills? Role in Context Can the learner apply/deploy their knowledge and skills in a range of relevant contexts?	with autonomy and professional independence take on lead responsibility in a team for the work of others and demonstrate leadership identify his/her own learning needs and continue study in a self-directed manner deal with complex issues and problems in a specialized field of work or study, manage unpredictable work situations requiring new approaches with autonomy and professional independence, contribute to the advancement of professional knowledge, practice and research		

APPENDIX 4- PROGRAM AND MODULE LEARNING OUTCOMES TEMPLATES

Programme Template – Level 8

20-21

Programme Code
Programme Title/Award
Programme Coordinator
Department
NFQ Level
Credits (ECTS)
Programme Duration
Programme Overview

PROGRAMME LEARNING OUTCOMES: Level 8

Guideline: Eight to twelve programme learning outcomes are recommended for each programme with a guideline of two programme learning outcomes for each of the strands (Knowledge, Know-How and Skill and Competence).

On successful completion of the programme, a graduate should be able to:

Knowledge

Knowledge sub-headings:

Breadth: An understanding of the key theory, concepts and methods pertaining to a field (or fields) of learning.

Kind: Detailed knowledge and understanding in one or more specialised areas, some of it at the current boundaries of the field(s).

Know-How and Skill

Know-how and Skill sub-headings:

Range: Demonstrate mastery of a complex and specialised area of skills and tools; use and modify advanced skills and tools to conduct closely guided research, professional or advanced technical activity.

Selectivity: Exercise appropriate judgement in a number of complex planning, design, technical and/or management functions related to products, services, operations or processes, including resourcing.

Competence

Competence sub-headings:

Context: Use advanced skills to conduct research, or advanced technical or professional activity, accepting accountability for all related decision making; transfer and apply diagnostic and creative skills in a range of contexts.

Role: Act effectively under guidance in a peer relationship with qualified practitioners; lead multiple, complex and heterogeneous groups.

Learning to Learn: Learn to act in variable and unfamiliar learning contexts; learn to manage learning tasks independently, professionally and ethically.

Insight: Express a comprehensive, internalised, personal world view, manifesting solidarity with others.