ALIGN

ACHIEVING AND CHECKING THE ALIGNMENT BETWEEN
ACADEMIC PROGRAMMES AND QUALIFICATION FRAMEWORKS

A GUIDELINE FOR ALIGNING ACADEMIC PROGRAMMES TO THE ARMENIAN NATIONAL QUALIFICATIONS FRAMEWORK

YEREVAN 2017

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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 academicprogrammes by internal decision making through an ongoing 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.

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.

[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."

[2]The issue concerning "**sectoral 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.

KNOWLEDGEis 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.

[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.

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 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

[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.

(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 parameters 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 ongoing 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 ongoing 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 orhow its graduates 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]

[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.

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.

- 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

[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.

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 continuously 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

[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.

- 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 an academic 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?

2.22 Are the Unit teaching staff aware of Academic Program's Intended Learning Outcomes?

2.23 Have the exit outcomes been established?

2.24 Are the required intended Unit learning outcomes consistent with relevant Academic Program intended LOs?

2.25 Has 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 prospective 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 identified 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 programme 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 doin 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 DESCRITPORS												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

KNOWLEDGEis 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 coherentlyone'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 to the specialty area and offer innovative and creative solutions that extend knowledge and practices of the field	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 offer innovative and creative solutions that extend knowledge and practices		

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[8]

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.

These templates reflect the Irish reality with regard to levels which do not match those, proposed by the Armenian NQF. The templates may, however, well serve as alternative samples of descriptors to be later tailored to individual needs in the process of localization and customization.

Programme Template – Level 9

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

PROGRAMME LEARNING OUTCOMES: Level 9

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: A systematic understanding of knowledge at, or informed by, the forefront of a field of learning.

Kind: A critical awareness of current problems and/or new insights, generally informed by the forefront of a field of learning.

Know-How and Skill

Know-how and Skill sub-headings:

Range: Demonstrate a range of standard and specialised research or equivalent tools and techniques of enquiry

Selectivity: Select from complex and advanced skills across a field of learning; develop new skills to a high level, including novel and emerging techniques.

Competence

Competence sub-headings:

Context: Act in a wide and often unpredictable variety of professional levels and ill-defined contexts.

Role: Take significant responsibility for the work of individuals and groups; lead and initiate activity.

Learning to Learn: Learn to self-evaluate and take responsibility for continuing academic/professional development.

Insight: Scrutinise and reflect on social norms and relationships and act to change them.

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

PROGRAMME LEARNING OUTCOMES: Level 10

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: A systematic acquisition and understanding of a substantial body of knowledge which is at the forefront of a field of learning

Kind: The creation and interpretation of new knowledge, through original research, or other advanced scholarship, of a quality to satisfy review by peers.

Know-How and Skill

Know-how and Skill sub-headings:

Range: Demonstrate a significant range of the principal skills, techniques, tools, practices and/or materials which are associated with a field of learning; develop new skills, techniques, tools, practices and/or materials.

Selectivity: Respond to abstract problems that expand and redefine existing procedural knowledge.

Competence

Competence sub-headings:

Context: Exercise personal responsibility and largely autonomous initiative in complex and unpredictable situations, in professional or equivalent contexts..

Role: Communicate results of research and innovation to peers; engage in critical dialogue; lead and originate comple social processes.

Learning to Learn: Learn to critique the broader implications of applying knowledge to particular contexts.

Insight: Scrutinise and reflect on social norms and relationships and lead action to change them.

Module Template

Module Code
Module Name
Department
Credit Weighting (ECTS)
Semester
Module Coordinator
Available for international students?
Available outside chosen degree?

Module Overview
Further Module Information (Professional Accreditation)
Module Content
Module Pre-requisites
Module Co-requisites

Learning Outcomes On successful completion of the module, students should be able to: Note: Four Learning Outcomes are recommended for a five credit module.
Learning Outcome 1
Learning Outcome 2
Learning Outcome 3
Learning Outcome 4
Learning Outcome 5
Learning Outcome 6
Learning Outcome 7
Learning Outcome 8

Teaching and Learning Methods

Teaching and Learning Methods

Lecture (Hours)

Labs/Practical (Hours)

Tutorial (Hours)

Planned Learning Activities (Hours)

Independent Student Activities (Hours)

Assessment

Continuous Assessment

Continuous Assessment %

University Scheduled Written Examination

University Scheduled Written Examination %

Other Assessment

Other Assessment %

Total Marks

Penalties

Pass Standard

Autumn Supplemental Examination

University Scheduled Examination (Autumn)

Autumn University Scheduled Examination duration (Hours)

APPENDIX 5- PROGRAMME TEMPLATE – BACHELOR LEVEL (DUBLIN DESCRIPTOR)

Programme Code	
Programme Title/Award	
Programme Coordinator/Degree Leader	
Faculty and Department	
NFQ Level/EHEA Level/Aligned to Dublin Descriptor X	
National Credits	
ECTS Credits	
Number of Modules	
Programme Duration	
Programme Overview	
Mode of Provision (E.g., Full and/or Part-time; face-to-face, low-residence, distance, online, blended, intensive summer-school, collaborative--- with employers, professional association, other HEI.)	
Number and Nature of Student Intake Categorise the number and type (e.g., FT /PT) of the projected student intake (and indicative income from fees) over the first five-year period.	

Programme Learning Outcomes: Level X

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:

- demonstrate **knowledge and understanding** in a field of study that builds upon and their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study;
- **apply their** knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and **have competences** typically demonstrated through devising and sustaining arguments and solving problems within their field of study;
- **gather and interpret** relevant data (usually within their field of study) to inform judgements that include reflection on relevant social, scientific or ethical issues;
- **communicate** information, ideas, problems and solutions **to both specialist and non-specialist audiences**;
- have developed those learning skills that are necessary for them to continue to undertake further study with **a high degree of autonomy**.

For your Bachelor Programme, it may be useful to group your outcomes under Knowledge, Skill and Competence and indicate which Module/unit outcome it maps to:

Programme Learning Outcome	**Type (Knowledge/Skill/ Competence)**	**Aligned to which Module/unit(s) outcome**
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		

Programme Template – Masters Level (Dublin Descriptor)

Programme Code	
Programme Title/Award	
Programme Coordinator/Degree Leader	
Faculty and Department	
NFQ Level/EHEA Level/Aligned to Dublin Descriptor X	
National Credits	
ECTS Credits	
Number of Modules	
Programme Duration	
Programme Overview	
Mode of Provision (E.g., Full and/or Part-time; face-to-face, low-residence, distance, online, blended, intensive summer-school, collaborative--- with employers, professional association, other HEI.)	
Number and Nature of Student Intake Categorise the number and type (e.g., FT /PT) of the projected student intake (and indicative income from fees) over the first five-year period.	

PROGRAMME LEARNING OUTCOMES: Level X

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:

- have demonstrated knowledge and understanding that is founded upon and extends and/or enhances that typically associated with Bachelor's level, and that provides a basis or opportunity for originality in developing and/or applying ideas, often within a research context;
- can apply their knowledge and understanding, and problem solving abilities in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study;
- have the ability to integrate knowledge and handle complexity, and formulate judgements with incomplete or limited information, but that include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgements;
- can communicate their conclusions, and the knowledge and rationale underpinning these, to specialist and non-specialist audiences clearly and unambiguously;
- have the learning skills to allow them to continue to study in a manner that may be largely self-directed or autonomous.

Learning Outcome Mapping

	Module/unit Intended Learning Outcomes	Programme Intended Learning Outcomes							
No	Module/Unit Name	1	2	3	4	5	6	7	8
1	ILO 1 is mapped to the following Programme ILOs								
2	ILO 2 is mapped to the following Programme ILOs								
3	ILO 3 is mapped to the following Programme ILOs								
4	ILO 4 is mapped to the following Programme ILOs								

Module/Unit Descriptor Template

1.	**Module/unit Code**	
2.	**Module/unit Title**	
3.	**Subject Field**	
4.	**Faculty/Department**	
5.	**Programme(s) to which the module/unit is attached**	
6.	**Pathway(s)**	
7.	**Level**	
8.	**National Credits**	
9.	**ECTS Credits**	
10.	**Core or Optional**	
11.	**Module/unit Dependencies (pre-requisites, co-requisites, incompatible modules)**	
12.	**Acceptable for**	
13.	**Excluded Combinations**	
14.	**Class Contact Time**	**Total Hours:** **Distribution of Hours:**
15.	**Guided Independent Study Time**	**Total Hours:**
16.	**Duration of the Module/unit**	
17.	**Campus Location**	
18.	**Module/unit Co-ordinator**	
19.	**Brief Description of Module/unit**	
20.	**Indicative Syllabus**	

21.	**Module/unit Learning Outcomes** ***On completion of the module/unit the learner will be able to:*** **1.** **2.** **3.** **4.** **5.**	***How assessed***
22.	**Programme Learning Outcome to which this is mapped.**	
23.	**Teaching and Learning Activities**	
24.	**Assessment and Feedback** ***Formative Exercises and Tasks:***	
25.	**Assessment and Feedback** ***Summative Assessments:*** **1.** **2.** **3.** **4.** **5.**	***Weighting %***
26.	**Learning Resources** ***Key Texts:*** ***Key Web-based and Electronic Resources:***	
27.	**Preparatory Work and Advice**	

Guidance Notes to Module/Unit Template

Module/unit Descriptors provide a formal statement of the key features of an accredited unit of study within a programme. Although all modules must be approved by the HEI's Quality Management processes, module/unit descriptors are vital sources of information and advice for students before and during their studies. So, where appropriate, descriptors should be addressed to 'you', the students.

1. Module/unit Code
This is the unique identifier for the module/unit; giving information on subject field and level of study.

2. Module/unit Title
The full title of the module/unit.

3. Subject Field
This is the home field of study for the module/unit.

4. Faculty/Department
The Faculty and Department where the module/unit is owned. Include reference to departments where service teaching occurs.

***5.* Programme(s) to which the module/unit is attached**
Identify the Programme(s) on which this module/unit is taught.

6. Pathway(s)
Note any requirements for named pathways.

7. Level
Where a Qualifications Framework is in place, each module/unit must be assigned a level. It does not have to be the same level as the Programme level. A programme must have all final year modules at the level of the programme, but earlier modules may be at lower levels.

8. ***National Credits***

Describe any national system

9. ***ECTS: European Credit and Transfer System***
Indicate any national mapping to the ECTS. 20-30 hours of student study time is normally regarded as equivalent to one ECTS credit.

10. ***Core or Optional***

A core module/unit is mandatory for all students studying at that level on a particular programme. An optional module/unit (subject to availability) offers students the opportunity to take or not to take the module/unit according to their individual interests.

11. ***Module/unit Dependencies (pre-requisites, co-requisites, incompatible modules)***
List modules that are pre-requisites, co-requisites, etc.

12. ***Acceptable for***
List any other degrees/programmes that have approved the module/unit as acceptable for their students.

13. ***Excluded Combinations***
List any modules within the programme that cannot be taken with this module/unit.

14. Class Contact Time
The total time (in hours) that each student can normally expect to be in direct contact with their teacher(s) during the module/unit. This should include all scheduled face-to-face teaching/learning sessions (e.g., lectures, seminars, workshops, directed laboratory/studio work, field/study trips, tutorials etc.) and, where appropriate, equivalent online/e-learning class-contact time (e.g., through webinars, individual Skype tutorials).

The distribution of the total contact hours should tell students how much time they will spend in the main kinds of teaching sessions. For example, 'Class Contact Time' for a 20 credit module/unit might be expressed as 40 hours; distributed as '5 in lectures, 20 in seminars, 6 on fieldtrip, 5 in webinars, 2 on tutor-led Skype, 2 in personal tutorials', or '16 in two-day residential learning activities, 20 in webinars, 4 in Google Hangout tutorials'.

15. Guided Independent Study Time
This is the time that students are expected to spend in studying outside their class contact hours: e.g., 160-260 hours for a 10 ECT (200-300 hours) module/unit that has 40 hours of class contact.

16. Duration of the Module/unit
Expressed as the time-span for provision of the module/unit: e.g., 30 weeks throughout terms 1, 2 and 3 (for PGT); or 15 weeks throughout semester 2 (for BA/BSc).

17. Campus Location
The main campus for attendance at scheduled classes.

18. Module/unit Co-ordinator
The member of academic staff who is formally designated with responsibility for the quality of the module/unit: its delivery, management, evaluation, and the marks awarded. In cases where the designated Co-ordinator is unable/unavailable to fulfil this role (e.g., due to research leave), a deputy Co-ordinator may be appointed subject to approval by the appropriate Head of School.

19. Description of the Module/unit
Provide an outline of the module/unit for students: e.g., how it relates to the overall goals of the programme; the main contexts, theories and ideas, themes and topics, controversies and issues, case studies and questions to be explored; the kind of learning activities students will experience, and the enduring academic, personal and professional value of the learning that will be achieved.

20. Indicative Syllabus
Brief overview of the curriculum

21. Teaching and Learning Activities
Introduce students to the range of scheduled teaching sessions in which they will be engaged (in workshops, seminars, tutorials, study-trips, webinars etc.) and how these relate to the work that they will do in their independent study time: e.g., in preparing for and reflecting on classes, presentations and projects; undertaking reading/studio/lab/group work, formative tasks and summative assessments, revision for examinations etc. Providing students with guidance on how best to use and distribute their independent study time will help them to work more efficiently and effectively, and thus enhance the quality of their learning outcomes.

***22.* Programme Learning Outcome to which this is mapped**

Identify which Programme Learning Outcome the successful completion of this module/unit will fulfil.

23. Learning Outcomes

Learning Outcomes should be informed by the aims of the programme, and be articulated as a short list of the key learning that students will be able to demonstrate at this level of study. Students' attainment of learning outcomes must be tested through summative assessments. The 'How Assessed' column should therefore identify the summative assessment(s) that test attainment of each learning outcome: e.g., LO1: SA3. (The Learning Outcomes for all modules should be mapped against the Programme Aims in the Student Programme Handbook: showing how each module/unit is contributing to the attainment of one or more of the Programme Aims.)

24. Assessment and Feedback

a. Formative Exercises and Tasks:

Provide a short account for students of the kind of formative exercises and tasks in which they will be engaged. Formative exercises are designed to enable students to develop particular aspects of their learning, prior to summative assessments. As well as enabling students (individually and/or collectively) to chart their progress, formative exercises should be designed to help students use feedback and self-reflection to manage and develop their learning so that they can see how to improve their work. Feedback can be from tutors, peers, mentors or a wide range of external audiences. Formative exercises may take many forms, in and out of class, and they are not formally assessed. Tutors can use formative exercises to monitor the pace and progress of students' learning throughout the module/unit, and to adjust the pace and focus of teaching activities accordingly.

b. Summative Assessments:

Provide a brief description for students of the summative assessments for the module/unit, and their relative weighting : e.g. ' 30-minute group seminar presentation (20%); 3,000-word review of research topic (60%); one-hour, multiple-choice knowledge-test examination (20%). Summative Assessments are formally marked/graded pieces of work that must be designed (collectively) to test the standard of students' attainment of all of the learning outcomes for the module/unit. The marks/grades awarded will count towards each student's record of achievement at Assessment Boards. Summative assessments need to be valid, reliable, and fair to all students. The number, variety, nature, timing and sequencing of assessments, and the quality of feedback on them, will exercise a powerful influence on all aspects of students' learning.

25. Learning Resources

a. *Key Texts:*

These are the works that all students would normally be expected to study or consult during the module/unit. (Full 'Reading Lists' should be included in the Module/unit Handbook, available on Minerva.) Wherever possible, key texts should be freely or readily available online. Texts should be cited in the style common for the HEI.

b. Key Web-based and Electronic Resources:

List the titles of (and links to) recommended websites, software, videos and other electronic resources that will support student learning on the module/unit.

26. Preparatory Work

Prospective and continuing students often like to know how best to prepare for their studies, before their modules start. Please provide some advice on one or two things that students might like to read or do on their own inpreparation for the programme.

Module Learning Outcomes Criteria

While the process of writing learning outcomes can seem quite straightforward there are challenges associated with it. Some of these are:

-including too many learning outcomes

-using too many verbs in one learning outcome

-overusing the same verb and using vague terms

-devising learning outcomes that are not assessable or not realistic in terms of resources/time/assessment approach

-incoherence –where the module learning outcomes bear no relation to the programme outcomes

- using an inappropriate cognitive level

These challenges may be overcome by considering the following module learning outcomes criteria checklist when reviewing learning outcomes.

Active: Do they describe what students will be able to do?	_____
Attractive: Will the student want to achieve them?	_____
Comprehensible: Will students/employers understand them?	_____
Appropriate: Are the verbs appropriate to the level of learning and domain for the stage of learning?	_____
Attainable/Realistic: Will most students meet them with reasonable effort?	_____
Assessable: Can you observe whether the learning outcomes have been achieved?	_____
Aligned: Are they aligned to teaching, learning and assessment activities?	_____
Visible: Are they available to students?	_____

(Adapted from Baume, 2009)

Module Constructive Alignment Template

Intended Learning Outcomes	Assessment	Teaching and Learning Activities
On successful completion of the module, student should be able to:	Continuous Assessment? % Final Examination-Format? %	What will the students do to learn?
LO1		
LO2		
LO3		
LO4		
LO5		
LO6		
LO7		
LO8		

APPENDIX 6- ACADEMIC PROGRAMME DOCUMENT (Package)

CONTENTS

INTRODUCTION

ACADEMIC PROGRAMME DESCRIPTION (for Bachelor's and Master's degrees separately)

- **goal**
- **objectives**
- **qualification**
- **mode of learning**
- **duration**

ADMISSION

- **requirements**
- **assessment**
- **criteria**

MODES AND METHODS OF TEACHING AND LEARNING

LEARNING OUTCOMES

- **knowledge**
- **competence**
- **skill**

KNOWLEDGE ASSESSMENT METHODS

- **assessment methods**
- **assessment scale**

CURRICULUM

(for Bachelor's or Master's)

COURSE INPUT SCALE IN ACHIEVING LEARNING OUTCOMES SPECILIZATION ISSUES TEACHING STAFF

APPENDIX 7- FORMS AND METHODS OF TEACHING AND LEARNING

Forms of Teaching

The basic forms of teaching are lectures, seminars, laboratory training and practical (hands-on) training; field study; course paper/project; Bachelor's, Master's, and Doctoral Theses; consultation, among others.

The lecture is a process that involves both the teacher and the students to help the latter to comprehend the major notions of the subject taught. It requires creative and active perception of the material while paying attention to basic concepts, definitions, designations, and assumptions to provide for scientific and logically consistent cognition of basic concepts. Visual aids should help explain the idea conveyed by the lecture.

The material studied at the lecture makes for the formation of a whole system of knowledge by means of students' **independent work**. The students should be stimulated to study independently which is the basis for independent thinking, analyzing and conclusion-making.

To help students internalize the theoretical material delivered at the lecture and the information collected in self-study seminars, laboratory training and practical (hands-on) training are valuable forms of teaching.

The aim of the **seminar** is to enable students to deepen their knowledge of the themes studied at the lecture and/or independently, to find and perceive additional information, prepare presentations, write essays, and so on. At the seminar reports are presented and discussed, conclusions are made. The supervisor of the seminar coordinates these processes.

The laboratory training is more demonstrable and helps students to better perceive processes and phenomena while conducting experiments. During the laboratory training a student learns how to handle, regulate and fix the laboratory equipment. The skills acquired at experimental-training laboratories help to better comprehend the theoretical material studied at the lecture and independently.

The aim of **practical training** is the gradual learning of the theoretical material by solving concrete problems; this is the basis for developing skills for independent use. The teacher should pay special attention to problem-solving methods, making drafts, sketches and schemes, using appropriate techniques for calculations.

Field study helps students to deepen and consolidate the acquired knowledge. It develops the skills of implementing their theoretical knowledge in practice, using the methods characteristic of the subject in question for problem-solving.

Working on **a course paper/project** is a creative process. It comprises both theory and practice. The projects are, in fact, the first results of students' independent work though they are performed under the teacher's supervision. While **designing and later presenting a project** a student applies the knowledge and skills he has acquired for solving a problem. This form of teaching increases students' motivation and responsibility. Working on a project involves the stages of planning, research, practical activity and presenting the results according to the chosen issue. The project is considered to be completed if its results are presented

clearly, convincingly, and correctly. Projects are valuable since they can be carried out individually, in pairs or in groups; also, within the framework of one or several subjects (integration of subjects) and they are presented to a large audience upon completion.

The thesis (**Bachelor's, Master's, and Doctoral)** is the final stage of the teaching process at a higher educational institution. Its aim is to systematize the theoretical and practical knowledge which students have received as well as to reach the substantiated solution of concrete scientific, technical, economic or industrial problems. The thesis should reveal the level of mastering research methods and conducting experiments in relation to the research questions posed as well as the student's readiness to work independently in the sphere of their future profession. An experienced teacher supervises the fulfilment of the project.

During **consultations** a teacher should help the students to acquire independent working skills, to learn how to use research resources properly and to solve the problems that arise during their independent work.

Teaching and Learning Methods

In their role as facilitators of student-centred education and student learning, teachers use combinations of different methods that often supplement one other to attain the concrete objective.

The most widely spread teaching and learning methods as well as their definitions are given below. However, the list does not pretend to be exhaustive.

- **Discussion/debates.** This is the most widely spread method of interactive teaching that greatly increases the quality of students' involvement and their activity. A discussion may turn into an argument, developing the students' skills of reasoning and substantiating their own ideas.
- **Cooperative teaching** is a teaching strategy in the process of which each member of a group not only has to learn the subject himself, but also to help his fellow-student to learn it better. Each member of the group works at the problem until all of them master the issue.
- **Collaborative work** implies dividing students into separate groups and giving each group its own task. The group members work at their issues individually and at the same time share their opinions with the rest of the group with probable reassignment of tasks and functions. This strategy ensures the students' maximum involvement in the learning process.
- **Problem-based learning (PBL)** is a method which uses a concrete problem as the initial stage both for acquiring new knowledge and integration process.
- **Heuristic method** is based on the step-by-step solving of a given problem. It is realized by means of independent fixing of the facts in the teaching process and determining the ties among them.
- **Case study** – the teacher discusses concrete cases together with the students and they study the issue thoroughly. For example, in the sphere of engineering safety it can be a discussion of a concrete

accident or catastrophe, or in political science it can be a study of a concrete conflict situation - the Karabakh problem (Armenian-Azeri conflict), a clinical case with real or hypothetical patient.

- **Brain storming** – this method implies forming and presenting as many radically different ideas and opinions on a given topic as possible thus creating conditions for developing a creative approach towards a problem. This method is effective in a large group of students where students define a problem/issue, listing students' ideas on the problem (mainly on the blackboard) without any criticism. When all the initial ideas are proposed, the evaluation criteria for stating the correspondence of the idea to the aim of the research are determined and the most relevant ideas are selected by applying the method of exclusion in order to reveal the best idea for solving the given problem.
- **Role-playing games and simulations.** Games played according to a previously prepared scenario enable students to estimate the problem from different standpoints. They help students to form alternative points of view. Such games as well as discussions help students to develop skills of independently expressing their own ideas and participating in discussions.
- The d**emonstration method** implies presenting information with the help of visual aids to reach the required result. It is frequently advisable to present the material simultaneously through audio and visual means by both a teacher and a student. This method visually shows the essence of an issue/problem.
- The i**nductive method** determines such a form of conveying any kind of knowledge when in the process of learning the train of thought is oriented from facts towards generalization, i.e. while presenting the material the process goes from concrete to general.
- **Deductive method** determines such a form of conveying any kind of knowledge which presents a logical process of discovering new knowledge on the basis of general knowledge, i.e. the process goes from general to concrete.
- **Analytical method** helps to divide the whole teaching material into constituent parts. In this way the detailed interpretation of separate issues within the given complex problem is simplified.
- **Synthetic method** implies forming one issue from several separate ones. This method helps students to develop the ability of seeing the problem as a whole.
- **Verbal or oral method** comprises a lecture, narration, conversation, and so on. During the process the teacher explains the material verbally, and students perceive and learn it by comprehending and memorizing.
- **Written method** implies the following forms of activity: copying, taking notes, composing theses, writing essays and so on.
- **Explanatory method** is based on concrete examples provided by the teacher the detailed analysis of which is made in the framework of the given topic.

- **Activity-oriented teaching** implies teachers' and students' active involvement in the teaching process, when practical interpretation of the theoretical material takes place.
- **E-learning** implies using the Internet and multi-media means in the process of teaching. It comprises all the components of the teaching process (aims, content, methods, means, etc.); the realization of these components takes place through specific means. There are three types of e-learning:
  - Full-time tuition; when the teaching process takes place during teachers' and students' contact hours, and conveying the teaching material occurs through an e-course;
  - Distant learning implies conducting the teaching process in the absence of a professor. The teaching course is conducted distantly; in the e-format.
  - Hybrid (full-time/distant) – teaching is mainly conducted distantly but a certain part of it is conducted during contact hours.

APPENDIX8- ASSESSMENT METHODS AND DESCRIPTIONS

Assessment methods and descriptions

Assessment types for learning, as learning, and of learning

References

QAA (2006) Code of Practice for the Assurance of Academic Quality and Standards in Higher Education, Gloucester: Quality Assurance Agency for Higher Education.

Brown, S., Rust, C., Gibbs, G. (1994) Strategies for Diversifying Assessment Oxford Centre for Staff Development, UK.

Assessment methods and descriptors

Assessment for learning, as learning, and of learning

Coursework	General description of assessed work capable of transmission or reproduction. Primarily associated with the printed word--mirroring prevailing conventions in the wider professional environment--, more graphic and videographic media are becoming more common in coursework assessment. Coursework is generally longditudinal and developed in directed study time for ongoing formative feedback and final submission for summative assessment purposes.		
Specification	***Descriptor***	***Advantages***	***Considerations***
Report	Review of given subject with due regard to secondary literature and contextual exploration of a given topic.	Good for assessing development of arguments, reflection, information literacy, judgement and expression.	Potential for surface level learning of knowledge and facts, risk of plagiarism and tendency for development of assessed work to become isolating or an overtly individualised experience.
Book/research paper review	Review of prescribed academic text requiring analysis and evaluation of concepts, ideas, research methods, and cohesion of research arguments.	Facilitates deep level of engagement with secondary research. Focused and standardised format supports consistency of assessment outcomes.	Potential for 'copy-and-paste' editing approach to assessment preparation and for isolation of assessment development process.
Essay	Assigned task that requires the student to demonstrate their involvment and production of a 'tangible' coherent written outcome in their own words.	Personalisable and flexible with potential for provision of standardised or optional title selection. Focused context for practice of acadenmic referencing techniques.	Difficult to connect directly with identifiable vocational parallels. Potentially overtly academic in format and difficult to engage effective learning.
Dissertation	Extended text documenting defined primary and secondary research. Subject definition often a significant component of the prescribed task. Primarily associated with later stages of undergraduate and postgraduate study.	Closely aligned with academic conventions and professional research environment. Open opportunity for personalised learning and for innovation.	Traditionally very text-based with the potential for research and enquiry to be subsumed within a process of writing and text editing.
Mock newspaper article	More journalistic approach to the review of information and the identification of key data.	Accessible and personalisable format. Potential for collation of group work into peer reviewable outcomes.	Potential for informality and lack of criticality.
Mock news broadcast	On camera presentation of research material requiring scripting, verbal dexterity and clarity of expression.	Dynamic format with potential for sharing of outcomes more widely. Engaging and exciting format.	Potentially technically complex with resource implications.
Journal article	Mapped to specific editorial and formatting guidelines, journal articles are a useful formative or summative assessment tool.	Provides formative opportunity for development of scholarly writing techniques.	Potentially overtly prescriptive format.

Annotated bibliography	Format for substantiation of secondary research and literature review work. Abbreviated text review summaries of set reading.	Most efficient format for assessment of secondary research of set texts.	Limited scope for synthesis of knowledge and understanding.
Literature review	Formal component of secondary research projects. Primarily mapped to specific topics rather than set texts.	Flexible and personalisable.	Potentially somewhat text centred with emphasis on writing and editing rather than synthesis and understanding.
Research poster	Development of single page poster communicating complex research data in accessible form.	Opportunity for visualisation of ideas and for interaction with knowledge and information in different domains. Outcomes shareable.	Potential for supplementary design, visual literacy, specialist software knowledge and skills development.
Blog or wiki	Online coursework assessments developed incrementally and/or collaboratively. Generally less formal in tone than more traditional academic writing assignments.	Wikis can be developed collaboratively and can encourage group work. Openness of blogs and scope for comment and response encourages focused effort.	Openness of student work can be emotionally challenging for learners.
Mock research funding bid	Mapped to specific funding guidelines, learners pitch their research ideas through a given evaluation framework.	Encourages comprehension by learners and can help measure students innovation or evaluation.	Potentially overtly simulated learning experience.
Lab report	Documented report of lab-based research activity.	Encourages critical reflection and evaluation, and formalises planning and research methods adaptation.	Potential for lab report development to become a distraction in the experimentation process.
Devised encyclopedia entry	Development of succinct definitions and explanations of complex concepts, ideas or theories.	Encourages development of language skills, text editing and brevity of expression. Enforces focus on key points.	Potentially overtly focused on text rather than concepts and ideas.
Critical review	Literature review with specific emphasis on challenging concepts, ideas and theory.	Encourages debate and criticism of concepts and ideas. Can sponsor development of confidence and critical thinking.	Can be difficult to promote criticism effectively without identifiable sources open to criticism.
Problem solution	Open opportunity to consider specified problem and to develop meaningful responses to problem resolution.	Can encourage lateral thinking and innovation. Adaptable according to subject context.	Can be difficult to promote lateral thinking and innovation.
Personal development plan	Preparation of a structured plan for development of given knowledge and skills.	Can encourage more focused planning and consequent perception of progress and achievement.	Potential for planning to become more abstract and idealised.
Reflective diary	Potentially developed in the form of a blog, reflective accounts of development of given area of study.	Good context through which to develop more reflective approach to study.	Potential for overt informality and lack of criticality.
Project	Open, often learner designated context of study with longditudinal development and realisation. Outcomes may include text, practical artefacts, presentations etc.	Can assess students creative and innovative ideas, transforming their understanding of one subject to solve an alternative problem.	Potential for development of assessed work to become isolating if developed individually and for group dynamics to compromise team-based project work.

Practical assessments	General description of non text-based assessed work involving more physical processes or leading to event-based or artefact-based outcomes.		
Specification	***Descriptor***	***Advantages***	***Considerations***
Individual presentation	Individual presentation using material aids to demonstrate knowledge, understanding and insight.	Emotionally challenging format requiring and encouraging deep learning and development of transferable skills.	Can be significally challenging and lead to sever anxiety in some learners.
Group presentation	Presentation of project outcomes or research work prepared in teams/groups.	More dynamic and interactive and can encourage shared learning.	Can be useful means of reducing individual anxiety in presentation contexts.
Design pitch	Vocationally orientated pitch of given concept within the context of a defined brief.	Vocationally relevant and opportunity for development of transferable skills. Potential for involvement by industrial partners.	Can be logistically challenging to develop 'real-world' context of assessment.
Fieldwork	Assessed work centred on dynamic, external field-work.	Physically dynamic and involving learning in different contexts and spaces.	Logistically complex organisation issues.
Observation report	Relevant to forms of ethnographic study, observational reports document reflection of specific research activities.	Can promote deeper levels of engagement with observed research events and activities.	Documentation during observation sessions can prove distracting.
Role play simulation	Simulation of given learning scenario and opportunity for projection of ideas.	Highly dynamic. Encourages deep learning.	Simulation, improvisation and more theatrical formats can prove difficult for some learners. May be more appropriate for some discplines.
Exhibition or demonstration	Often associated with arts-based disciplines but with relevance to many other subjects, practical outcomes are presented or exhibited for wider appraisal.	Excellent context for sharing of outcomes and opportunity for wider critique.	Can be logistically challenging but technology does provide opportunity for more virtual approaches.
Creative portfolio	Primarily associated with arts-based disciplines, portfolio work draws together a body of work developed within a defined brief.	Highly personalised and transferable outcomes. Highly adaptable and flexible format.	Potential for highly variable outcomes making summative assessment complex.
Performance	Associated primarily with arts-based disciplines, performance events test learners' ability to realise stipulated technical abilities under pressure of an audience and formal assessment.	Directly relevant to vocational context and highly focused source of lerning motivation.	Can prove challenging if not accompanied by necessary development of coping mechanisms and preparatory techniques.
Vocational placement	Formal, mentored and observed placement in a given vocational context.	Excellent opportunty for development of work experience and to improve employability.	Difficult to organise for large cohorts and management of learning can prove logistically challenging.
Mock interview	Organisation of a mock interview related to a specific job, industrial role, or other opportunity.	Excellent context for development of transferable skills.	Simulation can produce superficial engagement.

Examination	General description of time-constrained, individual assessment with short time-frames. Whilst traditional written exam papers and multiple choice tests remain valuable for efficiency of marking and consistency of outcomes, there are many other forms of examination assessment.		
Specification	***Descriptor***	***Advantages***	***Considerations***
Closed book	Traditional examination method requiring recall of facts and information plus some synthesis of knowledge.	Equity of assessment and consistency of cohort assessment outcomes. Efficiency of assessment processing.	Can be alienating for some learners and can encourage narrow range of skills development and surface learning.
Revealed question exam	Formal examination with exam question published with time for preparation and research.	More reflective of real-world application of knowledge and can reduce anxiety and abstract approaches to exam preparation.	Can exacerbate surface learning problems.
Open book	Exam allowing use of research sources.	Encourages development of scholarly approaches and more sophisticated information literacy.	Can compromise ownership and lead to surface learning.
Essay-based	Time-constrained development of discursive text in response to set question.	Personalisable and flexible.	Inefficient in assessment processing but can promote deeper learning in research preparation.
Multiple choice	Exam with selection of answers from a given range.	Efficient processing and completion. Potential for use of technology to automate marking processes.	Potential for surface learning and inaccurate results as a consequence of guesswork.
Computer-based	General term for integrated use of software to develop more dynamic examination formats. Can lead to incorporate of more dynamic graphical, videographic, audio-based, and media-based examination content.	More flexible and dynamic examination.	Development of computer-based assessment can be time-consuming and logistically challenging in organisation.
Time-constrained practical	Relevant to a wide range of subjects, time-constrained practical challenges are realised related to specific technical knowledge and skills.	Vocationally relevant and dynamic assessment.	Can be logistically complex and require significant resourcing.
Oral examination	Assesses student ability to present complex ideas in a structured logical way.	Flexible and personalisable.	Can be time consuming to manage with large cohorts.
In class quiz	Quick self-evaluation assessment useful for development of ongoing learning.	Quick feedback through self evaluation. Potential for more dynamic approaches through modelling of broadcast quiz formats.	Can be difficult to organise quickly.
Student generated quiz	Quiz developed by learners through collaborative submission of individual questions.	Dynamic, inclusive and fun assessment format.	Can be complex to organise and may not cover full range of necessary topics.
Debate	Formal socratic process exploring given topics and subjects.	Can encourage critical thinking, rhetorical skills and evaluation of different perspectives.	Time consuming and potential to favour the verbally fluent.

Viva voce	Formal discussion-based assessment normally associated with dissertation-based assessment.	Positive way to assess command of knowledge, ownership of a separate documentary submission, and real-time synthesis of knowledge and ideas.	Logistically challenging to organise for large cohorts.

Types of undergraduate assessment	
FORMATIVE	Contributes to learning through feedback and guidance of learning progress. Formative assessment supports ongoing learning progress and does not contribute to final grades.
SUMMATIVE	Summative assessment contributes to final marks and grades and ultimately final degree classifications.
DIAGNOSTIC ASSESSMENT	Forms of assessment designed to assess learning achievements and to identify areas for imporvement in knowledge, skills, understanding or ability. Diagnostic assessment in usually associated with profiling at the start of learning processes.
DYNAMIC ASSESSMENT	Assesses learning potential through expsoure to unfamiliar challenges and subject matter. Dynamic assessment is useful in a diagnostic sense for assessing learning ability in different contexts.
SYNOPTIC ASSESSMENT	Related to assessment of the synthesis of knowledge, skills and abilities developed though wider programmes of study. Often a component of other forms of assessment, synoptic assessment is often associated with project work in the later stages of undergraduate study. Synoptic assessment explores the combination of learning from different areas of study.
CRITERION REFERENCED ASSESSMENT	Learners' achievements are measured against a defined criteria and outcomes mapped to predetermined benchmarks. Individual learner performance is measured against the criterion and not related to relative performance within a group of learners.
OBJECTIVE ASSESSMENT	Assessment mapped to objectively measurable outcomes such as dates, terminology or titles in exam questions.
NORMATIVE ASSESSMENT	Assessment focused on dermining the position of a learner with respect to a wider peer group. Performance is measurabke against a wider cohort rather than a predetermined attainment scale.
IPSATIVE ASSESSMENT	Ipsative assessment is focused on measuring invidual learning development mapped to previous attainment levels. This can be effective in encouraging and focusing learning effort and setting invidual learning objectives.

GENERAL REFERENCES	QAA (2006) Code of Practice for the Assurance of Academic Quality and Standards in Higher Education, Gloucester: Quality Assurance Agency for Higher Education.
	Brown, S., Rust, C., Gibbs, G. (1994) Strategies for Diversifying Assessment Oxford Centre for Staff Development, UK.

APPENDIX 9-PROGRAMME LEARNING OUTCOMES & TLA (TEACHING, LEARNING AND ASSESSMENT)

Framework Descriptor	Programme Learning Outcomes On successful completion of the programme the student will be able to:	Suggested Teaching Strategies	Possible Assessment Strategies	Module/Unit(s)

Knowledge-Breadth An understanding of the theory, concepts and methods pertaining to a field (or fields) of learning	• Demonstrate an in-depth knowledge and critical understanding of psychology and its applications, (especially human-computer interaction) • Recognise the reciprocal relationship between theory and empirical evidence.	• Lectures/tutorials about research in psychology including referencing • Observational studies • Experiential learning through using technology • Lectures about the main areas of interest to psychologists. • Seminars - staff and student led • Reading research	• Psychological lab reports on observational studies • Essays on appropriate topics • Development and presentation of practical technology use e.g. blog, wiki, poster, presentation	All modules
Knowledge-Kind Detailed knowledge and understanding in one or more specialised areas, some of it at the current boundaries of the field(s)he	• Demonstrate an in-depth knowledge and critical understanding of psychology and its applications, (especially human-computer interaction) • Recognise the reciprocal relationship between theory and empirical evidence • Distinguish between quantitative and qualitative methods	• Seminars - staff and student led • Problem-solving questions of Internet use • Observational studies of technology use • Reading research • Tasks in technology labs	• Essays on appropriate topics • Reports, policy preparation for a specific brief • Development and presentation of scenarios of future technology use • Critiques of research literature	All modules

Know-How & Skill-Selectivity Exercise appropriate judgement in a number of complex planning, design, technical and/or management functions related to products, services, operations or processes	• Distinguish between different perspectives by drawing on their knowledge of the discipline • Recognise the reciprocal relationship between theory and empirical evidence • Apply their knowledge and understanding of the science of behaviour to real world situations • Practise a range of research skills and scientific methods for studying behaviour • Demonstrate a wide range of generic skills, including skills in communication, information processing, teamwork, critical and creative thinking, computing and independent learning • Utilise a range of tools and techniques for statistical analysis of data • Distinguish between quantitative and qualitative methods • Take a creative approach to using new and existing technologies for educational purposes, in industry and other areas	• Problem-solving • Workshops on technology and research • Designing and completing a research project • Creating prototypes • Evaluating prototypes	• Reports, policy preparation for a specific brief • Research project • Development and presentation of scenarios of future technology use • Assessment of project work and creation of prototypes.	All modules

Know-How & Skill-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	• Distinguish between different perspectives by drawing on their knowledge of the discipline • Recognise the reciprocal relationship between theory and empirical evidence • Apply their knowledge and understanding of the science of behaviour to real world situations • Practise a range of research skills and scientific methods for studying behaviour • Demonstrate a wide range of generic skills, including skills in communication, information processing, teamwork, critical and creative thinking, computing and independent learning • Utilise a range of tools and techniques for statistical analysis of data • Distinguish between quantitative and qualitative methods	• Lectures/ • tutorials about research in psychology including referencing • Literature reviews • Doing psychological experiments • Designing experiments • Observational studies • Usability studies • Creating prototypes • Evaluating prototypes	• Lab reports, • abstracts, posters, websites, wikis G, • Literature reviews • Research project • Assessment of project work and creation of prototypes.	All modules

Competence-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	• Distinguish between different perspectives by drawing on their knowledge of the discipline • Recognise the reciprocal relationship between theory and empirical evidence • Apply their knowledge and understanding of the science of behaviour to real world situations • Practise a range of research skills and scientific methods for studying behaviour • Demonstrate a wide range of generic skills, including skills in communication, information processing, teamwork, critical and creative thinking, computing and independent learning • Take a creative approach to using new and existing technologies for educational purposes, in industry and other areas.	• Problem-solving questions of Internet use • Observational studies of technology use • Reading research • Given scenarios, analyse a situation and present a solution • Design experiments to test hypotheses • Apply theory to a known work or social context • Seminars • Reading research	• Report, policy development appropriate to scenario • Presenting experimental designs • Development and presentation of scenarios of technology use • Essay/presentation/ blog/research report on practical context	• Research Methods and Statistics • Major Research Project • IT Group Project/ IDEA Project • Web Applications Development • Learning and Instruction

Competence-Role Act effectively under guidance in a peer relationship with qualified practitioners; lead multiple, complex and heterogeneous groups	• Recognise the reciprocal relationship between theory and empirical evidence • Apply their knowledge and understanding of the science of behaviour to real world	• Problem-solving questions of Internet use • Observational studies of technology use • Doing research e.g. surveys, focus groups • Developing and	• Research reports • Peer and self-assessment of role competence at regular intervals	• Research Methods and Statistics • Major Research Project • IT Group Project • Learning & Instruction

	situations • Demonstrate a wide range of generic skills, including skills in communication, information processing, teamwork, critical and creative thinking, computing and independent learning • Adhere to high standards of ethical and professional behaviour	being responsible for a blog, discussion group, wiki. • Research project • Designing and completing a research project		

Competence-Learning to Learn Learn to act in variable and unfamiliar learning contexts; learn to manage learning tasks independently, professionally and ethically	• Distinguish between different perspectives by drawing on their knowledge of the discipline • Demonstrate a wide range of generic skills, including skills in communication, information processing, teamwork, critical and creative thinking, computing and independent learning • Develop the capacity for lifelong learning in psychology and other disciplines • Adhere to high standards of ethical and professional behaviour • Take a creative approach to using new and existing technologies for educational purposes, in industry and other areas	• Problem-solving • Real life observation studies • Class wiki, web, blog to develop an online community of practice • Using appropriate online resources to work with other students, discussion forums, Wiki's etc.	• Self and peer assessment of learning • Statement of learning and action plan for future learning	• Research Methods and Statistics • Major Research Project • IT Project / Group Project • Learning & Instruction • Human Computer Interaction • Information Design & Multimedia • Software Development

Competence-Insight Express a comprehensive, internalised, personal world view, manifesting solidarity with others	• Recognise the reciprocal relationship between theory and empirical evidence • Apply their knowledge and understanding of the science of behaviour to real world situations • Demonstrate a wide range of generic skills, including skills in communication, information processing, teamwork, critical and creative thinking, computing and independent learning • Adhere to high standards of ethical and professional behaviour • Take a creative approach to using new and existing technologies for educational purposes, in industry and other areas	• Problem-solving • Discussion topic/wiki - impact of cyberworld • Real life observation studies • Evaluation of cognate disciplines, themes e.g. mobile phones and cancer. • Class wiki, web, blog to develop an online community of practice	• Reports, acceptable user policies • Self, peer and tutor assessment • Group presentation, creation of a website or Wiki	• Research Methods and Statistics • Major Research Project • IT Group Project/IDEA project • Social Psychology

APPENDIX 10- PROGRAMME LEARNING OUTCOMES & ASSESSMENT STRATEGIES

Programme Learning Outcomes On successful completion of the programme students will be able to:	Possible Assessment Strategies
Demonstrate an in-depth knowledge and critical understanding of psychology and its applications, (especially human-computer interaction). Distinguish between different perspectives by drawing on their knowledge of the discipline. Recognise the reciprocal relationship between theory and empirical evidence. Apply their knowledge and understanding of the science of behaviour to real world situations. Practise a range of research skills and scientific methods for studying behaviour, including those acquired as part of a piece of independent research in their final year. Demonstrate a wide range of generic skills, including skills in communication, information processing, teamwork, critical and creative thinking, computing and independent learning. Develop the capacity for lifelong learning in psychology and other disciplines. Utilise a range of tools and techniques for statistical analysis of data. Distinguish between quantitative and qualitative methods. Adhere to high standards of ethical and professional behaviour. Take a creative approach to using new and existing technologies for educational purposes, in industry and other areas.	

Lab reports, quizzes, portfolios, essays, blogs, Wikis, posters, presentations, literature reviews and critiques, research projects, creation of prototypes, case studies, student led seminars, journals, video clips, peer marking, in-class test, websites, debates, online courses, podcasts.

Programme Intended Learning Outcomes	**Module/unit Intended Learning Outcomes**																												
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	28	29	30
Programme ILO 1 will be assessed in																													
Programme ILO 2 will be assessed in																													
Programme ILO 3 will be assessed in																													
Programme ILO 4 will be assessed in																													
Programme ILO 5 will be assessed in																													
Programme ILO 6 will be assessed in																													
Programme ILO 7 will be assessed in																													
Programme ILO 9 will be assessed in																													

APPENDIX 11- OVERVIEW OF EACH STAGE OF AN ACADEMIC PROGRAMME

Stage 1

Stage 1 is the foundation for the programme. It provides the basic contents and skills needed to study XXX. In stage one, all students take the modules Xxxxx.

Stage 2

In stage 2 students start to develop their knowledge and skills in XXXX and being to explore the different areas of XXXX. In stage two: all students take the core modules of xxx, the Cross Faculty electives andxxxx. Then students are split into paths for the remaining 20 credits:

- Module/Unit A
- Module/Unit B

Stage 3

Stage 3 contributes to the award; it is 1/3 of the final award. This stage builds and consolidates on students' knowledge and skills. Students complete a group project in XXXX. In stage three: all students take the core modules of XXXX. Then students are split into paths for the remaining 20 credits:

- Module/Unit C
- Module/Unit D

Stage 4

Stage 4 consolidates students' learning and enables them to complete an independent research project supervised by the lecturing team. It is 2/3 of the final award. In stage four: all students take the core modules of xxxxx and Major Research Project.

1- Module/Unit Title, Credits & Assessment Modes

Programme Title	

Stage	**Modules**						
1	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 5 credits X% CA Y% Exam	**Module/Unit** 5 credits X% CA Y% Exam
2	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 5 credits X% CA Y% Exam	**Module/Unit** 5 credits X% CA Y% Exam
3	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 5 credits X% CA Y% Exam	**Module/Unit** 5 credits X% CA Y% Exam
4	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 10 credits X% CA Y% Exam	**Module/Unit** 5 credits X% CA Y% Exam	**Module/Unit** 5 credits X% CA Y% Exam

2- Proposed Programme Schedule - Stage 1

Title of Award	**Bachelor/Master**									
Area of Specialisation:										
Learning Modes Offered:										
Stage Number										
Module/Unit Name	**Status (M Mandatory/ E Elective)**	**Credits Number**	**Contact Total Hours**	**Assessment Modes**				**Student Workload (Per Student)**		
				CA	**Project**	**Exam**	**Maximum**	**Directed**	**Self-Directed**	**Total**
Module/Unit	M									
Module/Unit	M									
Module/Unit	M									
Module/Unit	M									
Module/Unit	M									
Module/Unit	M									
Module/Unit	M									
Total		**60**								

3- Proposed Programme Schedule – Stage 2

Title of Award **Bachelor/Master**

Area of Specialisation:

Learning Modes Offered:

Stage Number

Module/Unit Name	**Status (M Mandatory/ E Elective)**	**Credits Number**	**Total Contact Hours**	**Assessment Modes**				**Student Workload (Per Student)**		
				CA	**Project**	**Exam**	**Maximum**	**Directed**	**Self-Directed**	**Total**
Module/Unit	M							100	150	250
Module/Unit	M							100	150	250
Module/Unit	M							100	150	250
Module/Unit	E							100	150	250
Module/Unit	E							100	150	250
Module/Unit	E							100	150	250
Module/Unit	E							100	150	250
Module/Unit	M							100	150	250
Module/Unit	M							100	150	250
Total		**60**								

4- Proposed Programme Schedule – Stage 3

Title of Award	**Bachelor/Master**
Area of Specialisation:	
Learning Modes Offered:	
Stage Number	

Module/Unit Name	**Status (M Mandatory/ E Elective)**	**Credits Number**	**Contact Total Hours**	**Assessment Modes**				**Student Workload (Per Student)**		
				CA	**Project**	**Exam**	**Maximum**	**Directed**	**Self-Directed**	**Total**
Module/Unit	M							100	150	250
Module/Unit	M							100	150	250
Module/Unit	M							100	150	250
Module/Unit	M							100	150	250
Module/Unit	M							100	150	250
Module/Unit	E							100	150	250
Module/Unit	E							100	150	250
Total		**60**								

This stage contributes 1/3 to the final award.

5- Proposed Programme Schedule – Stage 4

Title of Award	**Bachelor/Master**
Area of Specialisation:	
Learning Modes Offered:	
Stage Number	

Module/Unit Name	**Status (M Mandatory/ E Elective)**	**Credits Number**	**Contact Total Hours**	**Assessment Modes**				**Student Workload (Per Student)**		
				CA	**Project**	**Exam**	**Maximum**	**Directed**	**Self-Directed**	**Total**
Module/Unit	M	10	90	100%			100%	100	150	250
Module/Unit	M	10	90	50%		50%	100%	100	150	250
Module/Unit	M	20	50		100%			100	150	250
Module/Unit	M	10	90	50%		50%	100%	100	150	250
Module/Unit	E	10	90	50%		50%	100%	100	150	250
Module/Unit	E	10	90	50%		50%	100%	100	150	250
Total										

This stage contributes 2/3 to the final award. The overall award GPA is 1/3 Stage 3 and 2/3 Stage 4.

APPENDIX12- ACADEMIC PROGRAMME BENCHMARKING TEMPLATE

Academic Programme Benchmarking Template

University: _____

Program Title: _____

For (Degree/Major): _____

Departmental/Faculty Contact

Name: _____**Phone**: _____**Email**: _____

Date Submitted: _____

Program Mission Statement

Please paste program mission statement here.

Program Learning Outcomes Assessment

Learning Outcomes	Course/Module	Assessment Measures	Additional Data	Teaching methods	Learning Methods
Measurable statements that show student knowledge, behaviour, actions, and skills demonstrate that learning has taken place by the time a student successfully completes the program	The courses where the learning outcomes are represented, taught, and measured	Measurements designed to collect data as evidence that students achieved the Learning Outcomes (what assessment is used, examples of student work, results of assessment, surveys, graduation counts, follow up surveys, alumni info, etc)	Results of course evaluations by students, peer review, class observations, other results with respect to course flow, teaching, curriculum, feedback from internship sites, number of graduates, level of job entry, companies that hired graduates, alumni survey, etc.	Methods used to guide student learning	Methods used by students to learn
1					
2					
3					
4					

Student Learning Outcomes or Benchmarks

Learning outcome / Benchmark			**Resources/labs**

Learning Outcome / Benchmark	**Assessment or Performance Indicator** (Thesis, final project / performance, exam, portfolio)	**Criteria for Passing**	**Where Are the Learning Outcomes / Benchmarks Assessed** (course, internship, projects etc.)

Academic Programme Benchmarking Template

1. Purpose of Program (description of the broad purpose)
2. Learning Outcomes (broad descriptors of intended participant learning outcomes)
3. Target Audience (who participates in the program? is it a generic program delivered across campus, or is it customized for local area delivery?)
4. Organizational Context (description of who has responsibility for the organization of the program)
4.1 Who has responsibility for the Program's: a. Administration and Enrolment Process b. Design and Development c. Delivery and Facilitation d. Evaluation, Review and Revision

4.2 How is the Program Funded? (centrally funded or prioritized with center budget)

4.3 When is the Program Delivered? (frequency and time of year)

4.4 How are Access Issues Addressed? (how are participants encouraged / enabled to attend *eg time release*)

5. Program Content (Description of the broad content focus of the program)

The substantive theories / issues covered in the program include:

a. Learning	Yes ❑	No ❑
b. Teaching	Yes ❑	No ❑
c. Curriculum	Yes ❑	No ❑
d. Assessment	Yes ❑	No ❑
e. Feedback	Yes ❑	No ❑
f. Evaluation	Yes ❑	No ❑
g. Resource Development	Yes ❑	No ❑
h. Skills Development	Yes ❑	No ❑
i. Use of Technology	Yes ❑	No ❑

j. Other (please describe)

6. Program Structure (Description of how the program is delivered)	
6.1 The number of contact hours	
6.2 The number of sessions	
6.3 Timing of the sessions (*e.g.*days per week / hours per day)	
6.4. Out-of-class activities (broad description if applicable)	

7. Process of Engagement (Description of how the program encourages participation)

Teaching techniques and tools used in the Program include:

a. Workshops Yes ❑ No ❑

b. Seminars (guest presenters; panels etc.,) Yes ❑ No ❑

c. Lectures Yes ❑ No ❑

g. Videos Yes ❑ No ❑

h. Other (please describe)

8. Assessment of Program Outcomes (how you assess that the stated learning outcomes have been achieved)

In relation to the learning outcomes of the program:

8.1 The program assesses learning outcomes Yes ❑ No ❑

8.2 The program uses formative assessment Yes ❑ No ❑

8.3 The program uses summative assessment Yes ❑ No ❑

8.4 Participants assess themselves Yes ❑ No ❑

8.5 The facilitators assess participant outcomes Yes ❑ No ❑

8.6 Assessment looks at short-term outcomes Yes ❑ No ❑

8.7 Assessment looks at long-term outcomes Yes ❑ No ❑

8.8. What is the evidence of effective learning and how is it assessed? (brief outline)

9. Articulation Process (the extent to which the program articulates with other programs)

9.1 The program articulates with other PD/OD activities Yes ❑ No ❑

9.2 The program articulates with a post-graduate Certificate / Diploma / Masters etc. Yes ❑ No ❑

9.3. Other (please describe)

10. Program Evaluation (how is the efficiency and effectiveness of the program determined)

In relation to both efficiency and effectiveness of delivery, the focus of the evaluation is on:

10.1 Program organization Yes ❑ No ❑

10.2 Program Curriculum Yes ❑ No ❑

10.3 Student learning outcomes Yes ❑ No ❑

10.4 Other (please explain)

In relation to the impact of the program on practice, the evaluation focuses on:

10.5 Individual practice Yes ❑ No ❑

10.6 Other (please explain)

APPENDIX 13 EXTERNAL PANEL EXPERTS TRAINING MATERIALS (DRAFT)

ALIGN
ACHIEVING AND CHECKING THE ALIGNMENT BETWEEN
ACADEMIC PROGRAMMES AND QUALIFICATION FRAMEWORKS

Aim of the document

The current document has two objectives: to provide guidance for planning and checking alignment of the academic programmes and to guide the dialog between academic programme implementers and external review panel during programme quality assurance processes.

During programme quality assurance processes, the HEIs should provide evidences that the planned qualifications are respectively awarded and the components of an education system: such as standards, curricula, assessments, and instruction work together to achieve desired goals.

The structure of the document

The first section of the document describes the main principals to guide the HEIs in planning of alignment processes whereas the second part refers to the guiding questions for the external review panel when screening the alignment of programmes.

I. Guiding principles for planning alignment of the programmes

National Qualifications Framework and outcome-based education

The first and foremost principal that guides the HEIs in planning alignment is the National Qualifications Framework. In 2011, Armenia has adopted National Qualifications Framework and thus shifted the paradigm to the outcome-based education as the fundamental element of the framework is that the qualifications are described in terms of learning outcomes. The learning outcomes therefore show to what extant the delivered education ensures progression in the education system. This describes the progression of knowledge and understanding, level of skills and general competence. In addition, the adopted framework links the transparency, access, progression and quality of awarded qualifications in relation to the labour market.

Thereby, the adopted framework sets responsibilities for the HEIs when planning the alignment of academic programmes. It is expected that the HEIs ensure that the delivered education and the students' progress of particular time period bring to the achievement of qualification in the respective level (bachelor, master).

The checking of whether the above-mentioned process is effectively implemented is done through quality assurance activities.

Institutional competency framework of progression

The next principle of planning alignment is the institutional competency framework that guides the HEIs to inherit the main elements of national qualifications framework to the academic programmes focusing on the progression of delivered education. The HEIs can inherit the elements of NQF according to their ambitions through using institutional competency framework. It is expected that the framework outlines the levels of achievement for each student and shows the progression of students for the particular time period.

Institutional competency framework reflects the progression elements of NQF; such as autonomy and responsibility, complexity of tasks etc. and then distributes these elements in the education process so as the achievement of learning outcomes is done logically consecutive.

The HEIs can plan the progress that is intended to be achieved at the particular level according to years and can describe an increasing degree of complexity, level of responsibility and autonomy of the students during each phase/year. This applies to the actual knowledge and skills, and the situation they are to be used in. This also includes expectations with regard to the degree of autonomy of the students while implementing tasks/assignment, as well as complexity of the tasks/assignment and context applying the knowledge and skills.

Thereby, the following levels can be expressed in the framework and as the competence framework specifies the intended level of competence achievement and balance of workload, the following levels van be identified: *basic level (explore and process), continued growth level (broaden and deepen), advanced level (integrate and specialize, expert level (innovation and lifelong learning).*

This approach can differ from institution to institution, however the HEIs can keep the elements of NQF when developing the competency framework. This framework is useful for guiding the dialog between HEIs and external panels.

When planning the alignment processes, the HEIs can inherit the attributes of NQF to the programme vertically and can disseminate those attributes horizontally to the assessment and instruction methods.

Planning of Vertical alignment: Inheritance

For planning alignment processes, the HEIs take into account the external requirements and effectively inherit them into the internal processes. Therefore, alignment expresses how the requirements of the national qualifications and labor market inherit to the level of academic programme learning outcomes then to the level of module learning outcomes. The assessments and instruction methods, as well as assignments and tasks given

to the students are driven from those attributes inherited from labor market requirements and qualifications levels.

Planning of Horizontal alignment

Planning of horizontal alignment is essential for ensuring that the course learning outcomes, assessment and instruction methods bring to the progress of students for the particular time period. The teaching and assessment of students should ensure that the students gain autonomy, responsibility, and complexity of tasks for the particular time period.

II. Process of alignment evaluation: screening of alignment

In the external review process, the review panel take into account two major criteria: how the programme is planned and aligned and how it is being implemented and delivered. The essential is that the expert **screen** whether the progress of the students for the particular time period is logically done and whether the assessments and instruction is developed for that progress.

In addition, the experts focus on the logic of the progress in the programme and whether this progress brings to the achievement of the programme outcomes. They also concentrate on how the yearly progress/life cycle of students' achievement is reflected in the programme and whether this progress is well-balanced i.e the workload, assignments and assessment of students for each year is balanced and realistic.

In the implementation level, the external experts emphasize the assessment process at different levels. Important factor is that the students' assessment fosters progression in each year/phase. At this level, the experts look whether the assignments/projects are part of life cycle and are connected with the labor market needs.

In screening the alignment process of the programmes, external experts take into account the following questions:

Questions for inheritance

1. Does the final qualification of the programme reflect both the requirements from professional field (SQF and labor market) as well as the demands on qualification level (NQF)?
    a. Does Institutional competency framework set?
    b. What are the levels of students' achievement within the programme and how these levels reflect or are connected with the qualification level?
    c. Which factors or criteria determine the level of competence (complexity, autonomy, responsibility)?
    d. Is the logic of learning/achievement progress justifed?

2. What are the assessment criteria for degree awarding (taking into account institutional approach, policy)?
3. How internship mode is aligned with intended learning outcomes for better achievement of work-based relevant skills/competency?
    a. How internship activities (student progress in professional life cycle learning, product, professional thinking formation) and assessment of thesis work are aligned?
4. How the requirements of labor market are translated into the academic programme learning outcomes? How the professional competences are expressed in the programme learning outcomes?
5. How the progress of students is reflected in the programme? /Yearly outcomes/
6. What is logic of course and assessment sequence (for effective achievement of yearly outcomes)? How the logical sequence of courses, modules is ensured?
7. How subject-learning outcomes ensure the achievement of yearly learning outcomes?
8. How instruction methods are communicated with course outcomes for achievement of yearly learning outcomes (for student understanding, feedback of students' understanding/satisfaction)?
9. How student teaching and learning activities in scope of subject is communicated with student progress evaluation methods for achievement of yearly learning outcomes (for student progress evaluation, feedback to student learning)?

Questions for screening

1. Does the final examination/assessment phase assess all learning outcomes at the required level and is it clear which learning outcome is assessed by which part of the examination phase and how?
    a. Is the distribution of assessment activities balanced?
2. How the students become specialist (professional competency formation path)?
    a. How the competency achievement is realized in assessment tasks?
3. Are the assignments suitable for the assessment of the qualifications?
    a. Are assignments of a specific performance level developed and do they reflect the requirements of labor market and how?
    b. Does a panel of peers and representatives of the labor market screen student assessments and how?
4. Are the level of assignments (internship) determined in employer environment?
5. Are the requirements for the performance of students defined?
6. How the programme learning outcomes are broken down into assessment dimensions?

7. Are assessment methods/criteria appropriate for level/year and are the assessment for levels/years are aligned with each other?
8. Does the programme monitor the required degree of complexity of the assignments and the degree of independence of the students?
9. When developing their assignments, are teachers explicit about which part of their assignments address specific learning outcomes/objectives?
10. Are there enough items/tasks/rubrics/grades that make differentiation of performance levels possible?
11. Are the learning outcomes of the degree programme considered as relevant taking into account alumni's first steps in the labor market?
12. Does the programme survey check the readiness of alamni for the labor market?
13. How effective course outcomes are achieved (distribution of teacher satisfaction (exam) per outcome)?

APPENDIX 14 ARMENIAN NATIONAL QUALIFICATIONS FRAMEWORK
(LEVELS OF HIGHER EDUCATION)

Level	Qualification	Educational Program	Knowledge	Skills			Competence
				Knowledge use skills	Communication, information communication technologies (ICT)and work with data	Summative cognitive skills	Independence and responsibility
6	**Bachelor** **(Bachelor's Diploma)**	**Bachelor's educational program** Duration: at least 3 years (Credit transmission and accumulation system, from now on: CTAS) (180-240 CTAS)	Advanced knowledge of professional work or modern and principal concepts, theories and methods of learning area.	Skills which show contemporary and advanced approaches and are necessary to use the acquired knowledge to solve unpredictable problems during professional work or learning process.	● Skills of presenting and explaining the information, arguments, ideas, problems and their solutions about given area to professional and non-professional community. ● Skills of using ICTs in solving problems in professional area and facilitating the work. ● Skills of collecting, operating, analyzing and interpreting quantitative and qualitative data related to professional area to make well-grounded judgments.	● Skills of analyzing and concluding displaying critical thinking. ● Skills that require creative approach to reveal professional problems of the area and to propose different solutions.	● Escalate full professional activity. ● Manage professional functions and programs in unpredictable working or learning environment, take responsibility for professional development of separate individuals or the team. ● Decide further learning or working paths depending on own needs. ● Realize personal responsibility for the nation and the government, sleuth to realization of democratic principles, spread of national and universal values.
7	**Master (Master's Diploma)** **Certificated specialist**	**Master's educational program**	● Deep specialized knowledge, including the	Axial professional skills which are necessary for	● Skills to present and explain own conclusions, appropriate propositions and results of investigation	Skills which are necessary to investigate problems in professional area,	● Escalate an activity in professional or learning area which requires new strategic

	(Certificated specialist's diploma)	Duration: at least 1 year (60-120 CTAS) **Certificated specialist's educational program** Duration: at least 5 years	latest achievements of given area which are used during learning, research and work. ● Knowledge of theories, advanced principles and methods of given professional and inter-professional areas.	● combining knowledge of different areas and creating a new knowledge in research and contemporary activity ●to solve theoretical and practical problems in new and unfamiliar situations.	precisely and systematically to professional and non-professional community. ● Skills to swift-handedly use ICTs in solving complex problems in professional and (or) non-professional areas and doing a research. ● Skills which are necessary to deeply analyze and assess quantitative and qualitative data related to professional and (or) inter-professional areas to come up with conclusions and decisions in situations with not complete or limited information	to propose modern ideas and approaches, as well as, to suggest contemporary and creative solutions intended to expand knowledge and practice of the area.	approaches of management and redesign of complex and unknown working situations. ● Promote development of professional knowledge. ● Take the responsibility for supervision of realization of strategic goals. ● Assess his/her own needs of continuous education and professional development in context of modern technological developments` to be able to continue learning in rapid changing environments. ● Promote development of civil society. ● Act combining Armenian national system of values and historic-cultural experience with universal values.

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