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INTERNAL QUALITY ASSURANCE FOR DOCTORAL PROGRAMS AT NATIONAL  
UNIVERSITY OF MONGOLIA  
**(Manual)**

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**Abbreviations:**

NUM	National University of Mongolia
SAS	School of Arts and Sciences
IQA	Internal quality assurance
MNCEA	Mongolian National Committee of Education Accreditation
HEI:	Higher education institution
EQA	External quality assurance
SAS	School of Arts ad Sciences
SEAS	School of engineering and applied sciences
SB	School of Business
SL	School of Law
SIRPA	School of International Relation and Public Administration

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## BRIEF INFORMATION

University name	National University of Mongolia
Total number of students	20 755
Number of Bachelor students	17621
Number of Master and Doctor Students	3134 (848 Doctor students)
Number of facultees	775
Percentage of facultees holding PhD	55%
Number of Bachelor programs	115
Number of Master programs	97
Number of Doctor programs	44
Number of programs accredited at national level	30
Number of programs accredited at international level	5
Official Address of the University	National University of Mongolia, Ikh surguuliin gudamj 01, Sukhbaatar duureg 08 khoroo, Ulaanbaatar8 Mongolia
Web page	<a href="http://num.edu.mn">http://num.edu.mn</a>

## Forewords

For Mongolia's higher education system and Mongolian Higher Education Institutions (HEI) it is crucial to scope with newest higher education trends and successes while making coherence with our national characteristics and identities. In order to do so we need to renew our higher education policies, structures, to build mechanisms/systems that protect both teaching and research staffs and students' interests, and to improve the quality of education on continuous bases. For this Higher education policy must be consistent with "Education – National program", Education Law and "State policy on Education" and requires to build effective higher education system which ensures social equity, supports country's economic development, rise of public living standard and contributes to the building of knowledge based economy.

On the other hand, providing high quality service which is consistent with learners' demands was top priority of higher education institution, however nowadays parallel with this priority, assessing and assuring quality in each education process and improving quality continuously is becoming also most important.

For these reasons, internal quality assurance system of programs is becoming more crucial for HEIs. Successful and effective quality assurance system in HEI will be a proof of quality of the programs and shows accountability of the institution, and will be an indicator of the quality of the teaching and learning process at the university.

The main distinction of C3 or doctoral programs from other level programs is individual research activity of a learner. By this reason the quality assurance of this level of program has its own characteristics and also requires to include its specialties.

This document is an Internal Quality Assurance Handbook for NUM prepared Under the Erasmus + C3QA project titled "Promoting internationalization of research through establishment and operationalization of cycle 3 quality assurance system in line with the European integration", by the working subgroup from NUM developed.

## The National University of Mongolia

National University of Mongolia is a first university of Mongolia founded in 1942. The university has five school/faculty, two local branches, three National research institutes and other research units. National University of Mongolia is a biggest intelligence center of the country which runs various undergraduate and graduate programs.

NUM had big contribution to the development of higher education in the country as all other six state universities of Mongolia branched from NUM.

The University approved and working toward its strategic plan for development for 2016-2024.

**Vision of the university:** To become "world known university". By 2014 is setting a goal to become one of the leading research university of Asia and become one of the 100 best universities of Asia.

**Mission of the University:** Under this vision NUM will become an academic organization with missions to spread out knowledge and with curricula based on liberal art tradition, and conduct sustainable reasearch and teaching activities in the various fields of natural science, economics and social development.

### Values:

**Academic freedom:** explore free and open mind and support to deliver its results in all ways, and support critical thinking

**Values:** widen teaching, learning and knowledge, promote critical thinking and attitudes

**Ethics:** respect ethics of teaching staff and students, to be honest and respect others

**Leadership:** to be a leader for national and public well being and bring positive changes in the society

**Respect:** respect and promote individual's knowledge, skills, creativity and novice ideas

### Priorities:

- ✓ To widen research areas, reach to world levels.
- ✓ To reach world level in teaching and learning.
- ✓ To lead the society with knowledge and be one of the motors of the development of society.
- ✓ To keep organizations independence and introduce internation management approaches and widen financial stability.

## Organizational structure of the university

As stated in “Rule of NUM” NUM is a “...collaborative and self administered organization” and the president manages everyday activity of the university. The management structure is given in Figure 1.

NUM consists of 5 schools and 33 departments. It also has a satellite high school and two local branch schools and local branches has 12 departments and 90 teachers.

Detailed information on number of staffs and programs given in Table 1.

*Table 1. Brief information of Faculties and schools of NUM (As June 2017)*

	Faculty and schools	Number of departments	Number of programs			Number of teachers	Number of support staffs	Number of students
1	School of Arts and Sciences	19	63	48	29	416	128	9311
2	School of engineering and applied sciences	5	22	24	12	129	44	3241
3	School of Business	4	27	19	1	57	18	2049
4	School of Law	2	1	4	1	57	18	2049
5	School of International Relation and Public Administration	2	2	2	1	20	16	891
6	Zavkhan school	5	7	6	-	29	41	402
7	Orkhon School	7	8	5	-	61	46	649



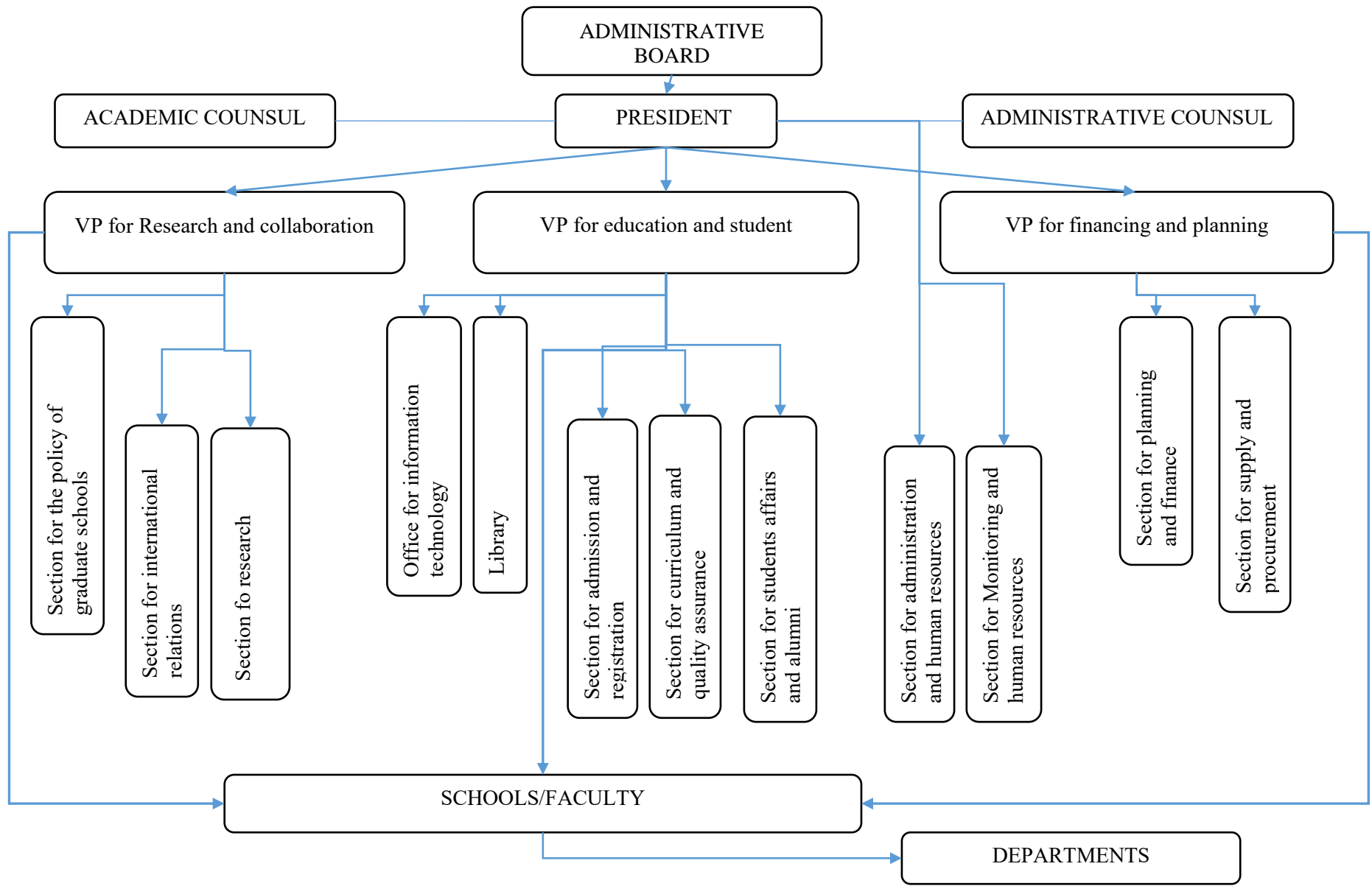


Figure 1. Organizational structure of NUM

## Doctoral programs at NUM

In accordance of the “Law of education”, “Law of Higher education”, “General rule of undergraduate teaching and study” and “General rule of graduate teaching and study”, NUM is implementing doctoral programs under the accreditation of MECS (Table 2).

*Table 2. Doctoral programs of NUM*

№	Programs	Indexes	Link to program plan
1	<a href="#">Anthropology</a> (SAS)	F 03140301	<a href="#">Файлаар харах</a>
2	<a href="#">Archeology</a> (SAS)	F 02220201	<a href="#">Файлаар харах</a>
3	<a href="#">Business Management</a> (SB)	F 04130101	<a href="#">Файлаар харах</a>
4	<a href="#">Bioengineering</a> (SEAS)	F 07880301	<a href="#">Файлаар харах</a>
5	<a href="#">Biology</a> (SAS)	F 05110101	<a href="#">Файлаар харах</a>
6	<a href="#">Biochemistry</a> (SAS)	F 05120101	<a href="#">Файлаар харах</a>
7	<a href="#">Education</a> (SAS)	F 01110101	<a href="#">Файлаар харах</a>
8	<a href="#">Buddha Philosophy</a> (SAS)	F 02230102	<a href="#">Файлаар харах</a>
9	<a href="#">Foreign Languages</a> (SAS)	F 02320202	<a href="#">Файлаар харах</a>
10	<a href="#">Foreign Language Translating and Interpreting</a> (SAS)	F 02310101	<a href="#">Файлаар харах</a>
11	<a href="#">Geography</a> (SAS)	F 05320201	<a href="#">Файлаар харах</a>
12	<a href="#">Geology</a> (SAS)	F 05320301	<a href="#">Файлаар харах</a>
13	<a href="#">Geophysics</a> (SAS)	F 05320501	<a href="#">Файлаар харах</a>
14	<a href="#">Computer Networking</a> (SEAS)	F 06120101	
15	<a href="#">Computer Science</a> (SEAS)	F 06130101	<a href="#">Файлаар харах</a>
16	<a href="#">Mathematics</a> (SAS)	F 05410102	<a href="#">Файлаар харах</a>
17	<a href="#">Information technology</a> (SEAS)	F 06130401	Файлаар харах
18	<a href="#">Nanoscience and engineering</a> (SEAS)	F 07880101	<a href="#">Файлаар харах</a>
19	<a href="#">Social Work</a> (SAS)	F 09230101	<a href="#">Файлаар харах</a>
20	<a href="#">Financing</a> (SB)	F340100	<a href="#">Файлаар харах</a>
21	<a href="#">Forest study</a> (SEAS)	F 08210101	<a href="#">Файлаар харах</a>
22	<a href="#">Country study</a> (SAS)	F 02220301	<a href="#">Файлаар харах</a>

<b>№</b>	<b>Programs</b>	<b>Indexes</b>	<b>Link to program plan</b>
23	<a href="#">International relations</a> (SIRPA)	F 02220401	<a href="#">Файлаар харах</a>
24	<a href="#">Software</a> (SEAS)	F 06130201	<a href="#">Файлаар харах</a>
25	<a href="#">Sociology</a> (SAS)	F 03140201	
26	<a href="#">Renewable energy engineering</a> (SEAS)	F 07130101	
27	<a href="#">Journalism</a> (SAS)	F 03210101	<a href="#">Файлаар харах</a>
28	<a href="#">Psychology</a> (SAS)	F 03130101	<a href="#">Файлаар харах</a>
29	<a href="#">Administration management</a> (SIRPA)	F 04130301	<a href="#">Файлаар харах</a>
30	<a href="#">History</a> (SAS)	F 02220101	<a href="#">Файлаар харах</a>
31	<a href="#">Political Science</a> (SAS)	F 03120101	<a href="#">Файлаар харах</a>
32	<a href="#">Arts</a> (SAS)	F 02180101	<a href="#">Файлаар харах</a>
33	<a href="#">Literature study</a> (SAS)	F 02320301	<a href="#">Файлаар харах</a>
34	<a href="#">Physics</a> (SAS)	F 05330101	<a href="#">Файлаар харах</a>
35	<a href="#">Philosophy</a> (SAS)	F 02230101	<a href="#">Файлаар харах</a>
36	<a href="#">Chemistry</a> (SAS)	F 05310101	<a href="#">Файлаар харах</a>
37	<a href="#">Demography</a> (SAS)	F 03110201	<a href="#">Файлаар харах</a>
38	<a href="#">Environment study</a> (SEAS)	F 05210201	<a href="#">Файлаар харах</a>
39	<a href="#">Language study</a> (SAS)	F 02320201	<a href="#">Файлаар харах</a>
40	<a href="#">Applied Mathematics</a> (SEAS)	F 05480101	<a href="#">Файлаар харах</a>
41	<a href="#">Applied Chemistry</a> (SEAS)	F 05310201	<a href="#">Файлаар харах</a>
42	<a href="#">Climate study</a> (SEAS)	F 05330301	<a href="#">Файлаар харах</a>
43	<a href="#">Nuclear Technology</a> (SEAS)	F 07880402	<a href="#">Файлаар харах</a>
44	<a href="#">Religion study</a> (SAS)	F 02210101	<a href="#">Файлаар харах</a>
45	<a href="#">Economy</a> (SAS)	F 03110101	<a href="#">Файлаар харах</a>
46	<a href="#">Ecology</a> (SAS)	F 05210101	<a href="#">Файлаар харах</a>
47	<a href="#">Electronics</a> (SEAS)	F07140101	<a href="#">Файлаар харах</a>
48	<a href="#">Law</a> (SL)	F 04210101	

## **General guidelines for IQA of programs**

Within the framework of Quality Assurance System, the quality assurance in the University comprises of two parts: internal quality assurance and external quality assurance. Internal quality assurance is inherent of the University and relies on its own sources to make sure that the implementation of all educational processes complies with all provisions of higher education and follow the prescribed courses of actions. External quality assurance, on the other hand, uses (independent) external entity to assess the implementation of educational program as to avoid bias and maintain greater public accountability. In Figure 1a typical university quality assurance scheme can be seen. Internal quality assurance can be established as can be seen in the right column of the Figure 1.

When designing an internal quality assurance system (IQA), both the explicit and implicit quality requirements of the different interest groups must be taken into consideration in relation to the programs given in an institution, with special attention being paid to the students.

Once the needs and expectations of the interest groups have been analyzed, it is the responsibility of the HEIs to then establish their internal quality assurance systems. The designed set of systems must be visible both in the institution and, above all, to interest groups outside of it. It is the responsibility of the external QA agencies to evaluate and accredit the suitability of these systems so that they fulfil the needs and expectations of the different interest groups.

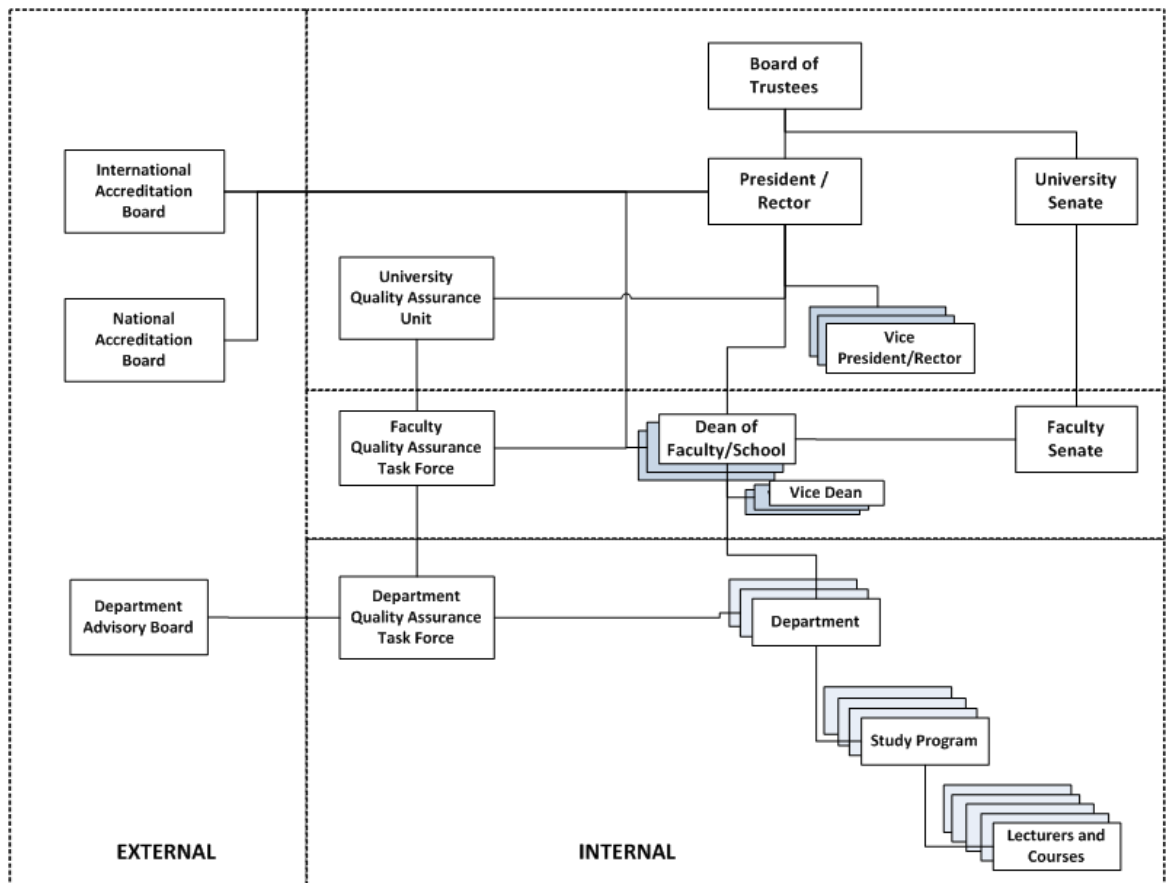


Figure 1. Framework of Quality Assurance System.

The Internal Quality Assurance or IQA encompasses the assessment of all aspects of quality in academic activities within the university: teaching and learning, research, and engagement with community/industry. The scope of assessment includes the availability and adequacy of governance/management, resources and education programs to deliver the program educational objectives. The main purpose of IQA is to improve quality of academic program through the cycle of betterment of the academic processes. With respect to undergraduate education program, in particular, IQA emphasis on the maintenance and continuous improvement teaching and learning quality at study program level.

### Quality Assurance at University Level

University's internal quality assurance is performed hierarchically at all levels of university structure, from the university down to the study program. As an instrument to the President/Rector, internal quality assurance unit has duties to perform and administer quality assurance system and is responsible for setting up the standards and assuring the continuous improvement of quality in all institutional programs and activities within the university.

In general, the responsibilities of university quality assurance unit are:

1. To assist President/Rector in implementing quality policy of the university

2. To develop guidelines and instruments of QA for academic programs and the supporting activities.
3. To develop quality standards for academic programs.
4. Working in coordination with faculty task force, to assist the university management, faculty and department in monitoring the implementation academic process and activities.
5. Study, analysis and evaluate quality data as the result of academic process and activities.
6. Prepare and report results of QA evaluation and recommendations to head of departments, deans of faculty. At university level, this report and recommendation is submitted to President/Rector of university, academic senate and board of trustees.
7. Promote continuous quality improvement at all level or university.

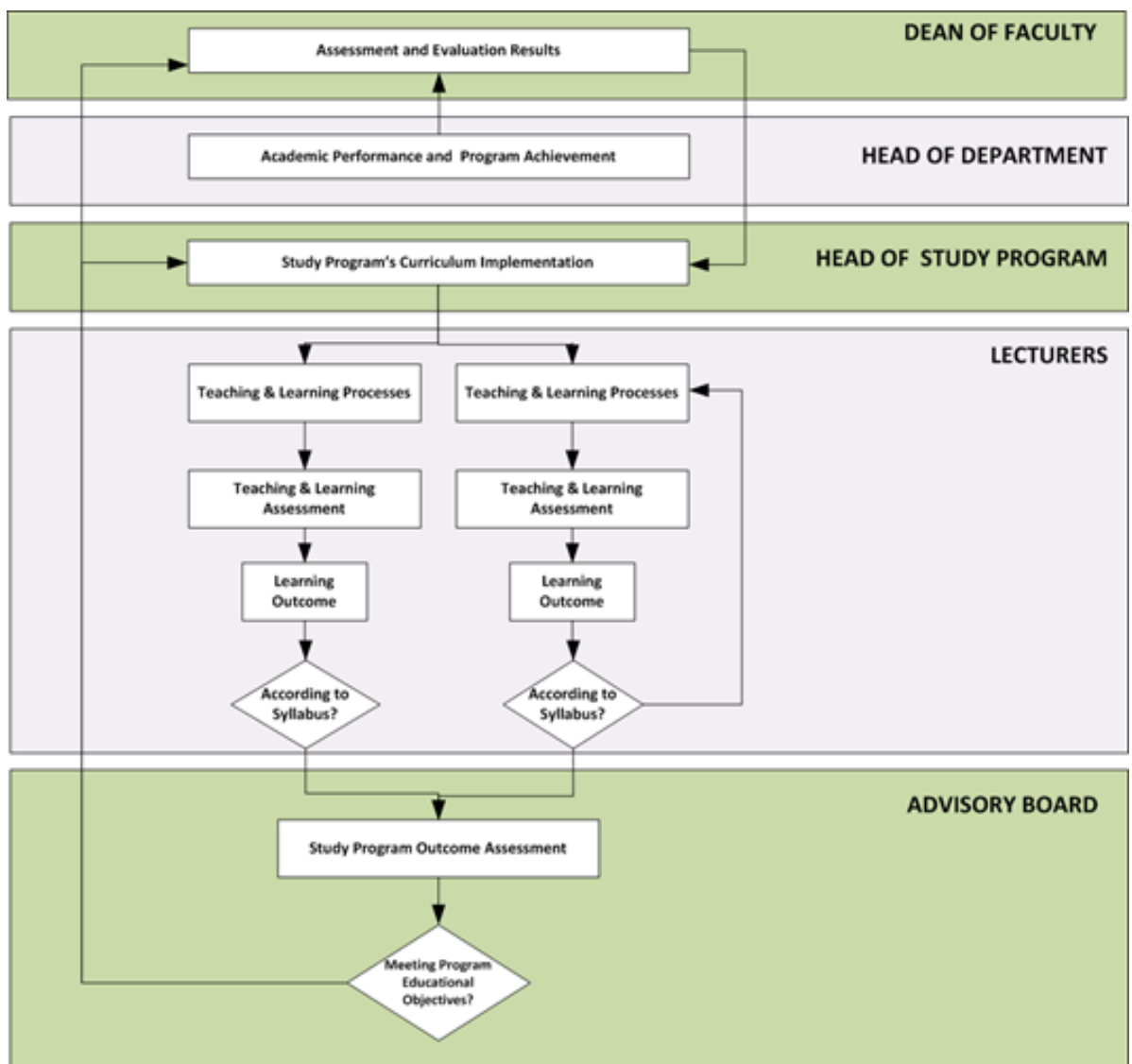
### **Quality Assurance at Faculty and Department/ Study Program Level**

At lower level, Deans of faculty and heads of department can establish similar units that are responsible for the implementation of quality assurance at faculty, department and study program levels. These task forces will assist the deans and head of department to monitor, assess and evaluate the quality of academic programs, activities and process at departments and study programs respectively. Results of internal quality evaluation and recommendations are reported to Dean and Faculty Senate, as well as head of Department for further actions.

University's QA unit and QA task forces at faculty and department level are to work integrated manners as to give assurance that all academic activities, programs and process are executed in conformance with the policy, regulation and standards quality set forth at university. In times, QA unit and task forces also have special duties assisting Department/ study program for external quality review process. During the process of getting accreditation, QA unit and task force help the study program through facilitating and coordinating with related units at the University.

To gain feedback from external parties, faculty or department can establish advisory board. This board acts as partner for faculty or department in providing valuable feedback concerning the education program. While internal quality evaluation provides continuous reflection of education process, external quality evaluation can give supposedly clearer and unbiased comments on educational outputs.

The quality of bachelor education program shall be arranged in such a way that in-line with outcome-based education and at least fulfilling level 6 of National Qualification Framework as described in Bologna Process. Bachelor degree with level 6 qualifications will produce specialists with high level knowledge of an area of work or study that will enable the use of individual's own ideas and research in response to complex problems and situations. Learning at this level involved the achievement of a high level of professional knowledge and was appropriate for people working as knowledge-based professionals or in professional management positions.



*Figure 2. Typical Faculty Quality Assurance Scheme*

QA at Department/ study program level focuses on the implementation of curriculum. The core of internal quality assurance of education program is at the lecturers, where the implementation and learning outcomes are assessed by the lecturer and recorded in

lecturers' portfolios. Student review survey is used as an instrument to gather students' feedback for course delivery and syllabus.

Advisory board is involved in the evaluation of department/ study program's outcomes and educational objectives. The board can be formed by inviting people from industry or professional fields to represent the professional area where the graduates may be employed or work at. The board members typically consist of individuals with significant professional achievement and have interest in higher education and professional development. In most cases board members are also alumni of the university that will enable the creation of good emotional bond with the Department/ study program. The typical faculty quality assurance scheme can be seen in Figure 2. Basically, learning outcome-based IQA also based on PDCA cycle and the main aim of this IQA mechanism in any level (university, faculty or department level) is for the continuous improvement.

IQA is an integrated system that is implemented hierarchically from university level down to the faculty and department level. All quality regulations set up at university level must be followed by subordinate units, although lower level units can apply higher standards of quality. Instruments for general standards as part of monitoring and performance evaluation are given in separate book (Quality Standard Book).

Internal Quality Assurance starts from regular monitoring of academic program at the lowest level. As the key actors of academic services, lecturers/researchers perform their duties in teaching/education and research, as well as engaging in community and/or industrial services. The execution of teaching, research and community/industrial services must follow university regulations, and it is the duty of IQA unit to determine their adherence to quality regulations. At faculty and department level IQA unit is called Monitoring, Assessment and Evaluation task force or MONEV task force.

In term of education program, at every end of semester, lecturers are obligated to prepare course portfolio and/or rubric for every course subject they taught. Course portfolio is an instrument that reflects the implementation of courses based on syllabus and curriculum of study program and how the intended course learning outcomes are achieved. Courses' portfolios and other documents will be reviewed by MONEV task force; compared it against the syllabus and intended learning outcomes. The portfolios are assessed by the head of study program as teacher's performance.



Regular curriculum review is performed in two levels: study program level, every year and faculty level, every five years. The curriculum review in study program level aims at determining whether the implementation of education program during the year has been implemented in accordance to the applicable regulations and whether the program educational objectives and targeted education performance have been met or even exceeded. If the results are not as expected, the Head of Department will assign the head of study program to take necessary corrective actions. Result of study program's regular curriculum review is also reported to Dean of Faculty and university management as well as to the university IQA unit. In each level, QA task force and IQA unit will assess the record of academic performance to determine its adherence to faculty and university QA regulations and standards. Similarly, if the performance does not meet the minimum standard, university management and Dean of Faculty can order the Head of Department to take necessary corrective action. Using similar approach and process, if the review results are satisfactory, Head of Department can also initiate action plan for improvement.

Examples for instrument that can be developed in program level of some quality standards (student, lecturer and facilities/ laboratories) can be seen below and explanation for developing the general templates are given.

**General explanation for instruments templates as follows:**

1. IQA in university level should **set up standards** (student, lecturer, supporting staff, facilities, curriculum, academic activities, thesis/ final project report, internship, graduates and alumni) or others standards that the university thinks necessary. The **minimum standard** should be set up based on the average of every faculty/ school data and the need of university to serve quality education to the country.
2. In every standard, for example standard for facilities, several criteria can be set up, for example:
  - university provides classrooms, laboratories, studios and workspaces for undergraduate and graduate students which are enough to run good quality education
  - Laboratories and studios meet regulatory safety, health and environment, and maintained on a regular basis. The capacity of the laboratory / studio adjusted to the type / nature of the practicum / assignments and lab equipment used in order to be implemented properly. Extensive laboratory per work station is 1.5 to 5 m<sup>2</sup>, and spacious studio is 2-4 m<sup>2</sup> / work station.

- Availability of the shared study room for Undergraduate students
  - And so on
3. For every criterion, indicator should be set up. For example for laboratories: availability of laboratories regulation must put in every lab.
  4. Minimum standard should be set up by IQA at least at university level. For example, for laboratories: The safety, health and environment regulations are met, the area of laboratory per workstation is 1.5 m<sup>2</sup>
  5. Measurement method: for example, for laboratories: Measure the laboratory's dimension and the highest number of students who study in that particular class. If there are more than one laboratory, take the least ratio number. Include the number / name of the laboratory and the course code
  6. The data source is also mentioned, whether in university level, faculty or school level or in program level.

The template can be adjusted according to the need of IQA and quality standard level of university, faculty or department level.

## **Internal quality assurance of doctoral program at NUM**

Internal quality assurance procedures is consistent with quality frameworks approved by MNCEA. Specifications of the IQA at this level are autonomy of research, scholarship for doctoral students, requirements for thesis supervisors and requirements for thesis.

Total credit hours(CH) for doctoral program is 60 (about 120 ECT) and it divided as follows:

Courses: 22-24 CH,

Research works: 12 CH,

Thesis: 24 CH.

The following are the check lists for doctoral level IQA and must be assessed by doctoral schools and quality assurance unit. Each items assessed by 1 to 5 scores where 1 corresponds to very poor mark/quality and 5 corresponds to very high mark/quality.

### **1) Entrance for doctoral study**

- a. Transparency of information for applicants, including information on:
  - Dates of registration
  - Date of examination and other examination related processes
  - Department and research unit
  - Staff who is able to supervise doctoral study
  - Financial assistance and scholarship
- b. Admission policy and criteria is clearly defined, communicated and up to date
- c. Selection method and criteria is clearly defined
- d. Use of ICT in registration

### **2) Quality of courses taught**

- a. **Learning outcomes**
  - i. The expected course learning outcomes are clearly formulated and consistent with the vision and mission of the university
  - ii. The expected course learning outcomes cover both subject specific and soft skills learning outcomes
  - iii. The expected course learning outcomes clearly reflect the requirements of the stakeholders and labor market
- b. **Course Specification**

- i. The information in the course specification is comprehensive and up-to-date
    - ii. The course specifications are communicated and made available to the stakeholders
  - c. **Curriculum and assessment**
    - i. The curriculum is designed based on constructive alignment with the expected learning outcomes
    - ii. The curriculum is logically structured, sequenced, integrated and up-to-date
    - iii. The student assessment is constructively aligned to the achievement of the expected learning outcomes
  - d. **Teaching and learning**
    - i. Teaching and learning activities are constructively aligned to the achievement of the expected learning outcomes
    - ii. Teaching and learning activities enhance life-long learning
  - e. **Assessment**
    - i. The student assessments uses various methods and grading are explicit and communicated to students
    - ii. Feedback of student assessment is on time and helps to improve learning
- 3) **Quality of research work**
  - a. Progression of doctoral student research is monitored yearly and communicated both to student and supervisor
  - b. Students provided with an opportunities to participate in domestic and international research conferences and scientific events
  - c. The school implements effective follow up policy/procedure/system for each students and the procedure helps student to finish his/her thesis defence successively on time
  - d. Doctoral students provided with physical (lab and etc) and psychological environments in order to finish his/her thesis research
  - e. Doctoral students participate and conduct their thesis in regular with close relation with thesis supervisor or research unit
- 4) **Scholarships, financial assistance and support**
  - a. Departments appoint advisory committee for doctoral students and the committee works in regular base
  - b. The school runs effective scholarship or financing system for doctoral students

- c. Doctoral students receive adequate financial support to conduct their thesis research
- d. School work in close relationship with domestic and international organizations in order to support doctoral students

5) **Thesis supervisors**

- a. Requirements for supervisors defined clearly
- b. Capacity building of supervisors for supervision conducted in regular base
- c. The school implements effective human resources development plans

**References and instruments for assessment and evaluation**

1. Doctoral student satisfaction survey results
2. Analysis and follow up reports on Doctoral student satisfaction survey
3. Annual report of departments on doctoral study program
4. Indicators
  - a. Graduation rate
  - b. Drop out rate
  - c. Pass rate
  - d. Staff-to-student ratio
5. Information on research activities of supervisors

Name of supervisor/Department	Number of publications				Total
	Institutional	National	International (without Tomson-Reuters indexes)	International (with Tomson-Reuters indexes)	

## **APPENDIX**

- ESG standards
- Salzburg principles
- Guide to AUN-QA Assessment at Institutional Level