



Republic of the Philippines
OFFICE OF THE PRESIDENT
COMMISSION ON HIGHER EDUCATION



CHED MEMORANDUM ORDER (CMO)

No. 12
Series of 2015

SUBJECT: STANDARDS FOR THE SELECTION OF CENTERS OF EXCELLENCE (COEs) AND CENTERS OF DEVELOPMENT (CODs) CRITERIA FOR SCIENCE AND MATHEMATICS PROGRAMS

In accordance with the pertinent provisions of Republic Act No. 7722, otherwise known as the "Higher Education Act of 1994," and for the purpose of establishing Centers of Excellence (COEs) and Centers of Development (CODs) that serve as potent catalysts in Science and Mathematics education needed for the development of world-class scholarships, nation building and national development, the criteria and implementing guidelines for the identification, support and development of COEs and CODs as embodied in CHED Memorandum (CMO) No. 55, series of 2006 shall be adopted as the general guidelines for Science and Mathematics programs. Per Commission *en Banc* Resolution No. 139, dated March 30, 2015, the following detailed criteria specific for the different Science and Mathematics programs shall be adopted:

- Annex A – Biology
- Annex B – Chemistry
- Annex C – Environmental Science
- Annex D – Geology
- Annex E – Marine Science
- Annex F – Mathematics
- Annex G – Physics
- Annex H – Statistics

This Order containing the amendments shall take effect immediately and shall remain in force and effect until revoked or further amended.

Issued this 13th day of April 2015, Quezon City, Philippines

R. S. Sangalang

RUPERTO S. SANGALANG, Ph.D.

Commissioner
Officer-In-Charge, Office of the Chairperson
April 6-17, 2015

STANDARDS FOR THE SELECTION OF COEs and CODs FOR SCIENCE AND MATHEMATICS

BIOLOGY AND MOLECULAR BIOLOGY PROGRAM

Elements	%	Score	Standards and Indicators	Documentary Requirements	COE	COD	Remarks
1. Instructional Quality	45%	45%	COEs and CODs must provide excellent human resources and facilities to attain its academic objectives. The instruction offered by COEs and CODs are based on good program administration, a faculty roster that strikes a balance between higher academic studies and professional experience, a flexible and dynamic curriculum, and student facilities that are sufficient to meet the demands of the academic community it serves.				
1.1 Faculty		19	The faculty is the primary operative resource in an academic institution. They shoulder the institution's responsibilities to teach and facilitate learning, generate new knowledge, and assist in providing service programs of the institution to the community. The faculty roster of the unit should be composed of professionals qualified in terms of education, experience and skills.	a) Catalog or summary list of faculty and the degrees they hold. b) Individual Faculty Information Sheet (FIS)	At least 6 full-time in the discipline	At least 3 full-time PhDs in the discipline	Pre-Qualification Diploma, TOR, CV updated (January 2010-2015)
1.1.1 Qualifications		12	Educational qualifications are consistent with the programs and expected learning outcome of students. Faculty qualification shall be indicated by these standards:		2 pts. per full-time PhD faculty	4 pts. per full-time PhD faculty	



			<p>Faculty must be at least master's level for undergraduate programs and MS or PhD for graduate programs. Specializations of the faculty must be in the field or in a closely allied field. Specifically, the following standards shall apply:</p> <ul style="list-style-type: none"> • COEs must have at least five (5) full-time PhDs. (This is based on the number of core courses in the programs.) • CODs must have on full-time appointment at least two (2) PhDs and three (3) master's degree holders. <p>There are evidences of self-improvement among the faculty such as participation in postgraduate programs, trainings and skills development. Undertaking postgraduate trainings is a manifestation of self-motivation on the part of the faculty with the interest to improve its prime resource.</p> <p>Core faculty is adequate in number.</p> <ul style="list-style-type: none"> • Full-time faculty constitutes 70% of total faculty complement of the unit. Faculty to student ration is 1:30 or better for both undergraduate lecture and laboratory classes and 1:15 or better graduate classes. • There is ample distribution of faculty experience in the unit. Experience is measured either by the distribution of the levels or ranks of the faculty
1.1.2 Quantity	2		<p>Core faculty is adequate in number.</p> <ul style="list-style-type: none"> • Full-time faculty constitutes 70% of total faculty complement of the unit. Faculty to student ration is 1:30 or better for both undergraduate lecture and laboratory classes and 1:15 or better graduate classes. • There is ample distribution of faculty experience in the unit. Experience is measured either by the distribution of the levels or ranks of the faculty



				in the unit or by the average number of teaching years of the faculty.				laboratory classes and 1:15 or better graduate classes. • There is ample distribution of faculty experience in the unit. Experience is measured either by the distribution of the levels or ranks of the faculty in the unit or by the average number of teaching years of the faculty.
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1.1.3 Productivity		4	This is a showcase of the faculty's outputs and other achievements, except publications. • Participation in scientific meetings • Awards • Faculty participate in institutional activities • Faculty are active leaders or members of scientific organizations	List of faculty output to be appended in the FIS			This is a showcase of the faculty's outputs and other achievements, except publications. • Participation in scientific meetings • Awards • Faculty participate in institutional governance activities • Faculty are active leaders or members of scientific organizations
1.1.4 Hiring and Promotion		1	There is a written policy on faculty hiring and promotion. A faculty manual or similar document should define the	Copy of faculty manual or similar document detailing this			There is a written policy on faculty hiring and promotion. A



			criteria, qualifications, procedures adopted by the unit.	requirement.		faculty manual or similar document should define the criteria, qualifications, procedures adopted by the unit.
1.2 Curriculum	10%	4.5	The curriculum must be characterized by the following: a) Curriculum is a coherent program of study. b) Curriculum has sufficient content and depth to characterize the different levels of study (BS, MS, PhD), as appropriate. c) Graduate courses are focused on and structured for specialized study and independent research.	Sample curriculum for every program offered by the unit.	Coherence must have sufficient content and depth to characterize the BS, MS and PhD Programs	Copy of Implemented Curriculum
1.3 Administration	10%	3.5	Generally, this will refer to the Director or Chair of the unit. a) Chair/Director is suitably qualified. b) Leadership must be strongly evident particularly in terms of <ul style="list-style-type: none"> • Efficient operation. • Presence of a clear direction and time bound goals. • Roles of administration, faculty and staff are clearly defined. • Presence of a system for self-assessment. 		Chair should have a PhD degree in Biology or its equivalent degree	CV of Chair
1.4 Facilities	25%	9	Only facilities and equipment that are under the direct responsibility of the unit shall be included for this element.			
1.4.1 Laboratories, Facilities and Equipment		6	a) Physical resources are planned and developed according to target goals.	List of specialized laboratories, facilities and equipment used		Must have facilities for at least five (5) of the seven (7) major areas in



<p>1.4.2 Library</p>	<p>2</p>	<p>b) Laboratories and facilities are adequate for the programs offered.</p> <p>c) Laboratories and facilities are suitable and have amenities appropriate and necessary to facilitate student learning.</p> <p>d) Equipment is adequate and appropriate for the courses listed in the curriculum.</p> <p>e) There is a system to select, maintain, and replace equipment.</p> <p>The library is the primary learning resource unit in the institution. It is the main repository of learning materials available to constituent members of the community. The library holdings should not simply be a collection of materials but a collection that is supportive of the needs and requirements of the degrees and programs offered in the institution.</p> <p>a) The library has adequate and suitably qualified staff. Chief librarian must have a master's degree in an appropriate professional training and registered with the PRC. There should be at least one (1) professional librarian for every 1000 students.</p>	<p>for the programs, acquisition cost for each major equipment should be indicated.</p> <p>Description of development plans for facilities.</p> <p>Description of plans for acquisition and maintenance of equipment.</p>	<p>Biology</p> <ol style="list-style-type: none"> 1. Physiology, 2. Systematic Biology, 3. Developmental Biology, 4. Genetics, 5. Ecology, 6. Microbiology, 7. Cell and Molecular Biology <p>*not necessarily 5 laboratories but facilities for use in the 5 areas in Biology</p>	<p>List of library staff and the degrees they hold.</p>
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<p>1.4.3 Information Technology capability</p>		<p>b) Library holdings are sufficient in quality, depth, diversity and currentness to support the courses, programs and degrees. Fifty percent (50%) of library holdings should be distinct titles. Basic collection should include: general References, Cultural, Filipiniana, Humanities, Social Science and Science and Tech.</p> <p>c) Library resources are accessible. Office hours should be reasonable to accommodate all users, including graduate students with night classes. Space should accommodate at least five percent (5%) of total enrollment.</p> <p>d) There is sufficient and consistent budgetary support for the effective maintenance, security, and improvement of library resources. Library fees should be used for library operations and development.</p> <p>e) Faculty, students and other members of academic community are involved in the planning and improvement of library holdings and other learning resources. Mechanisms to facilitate the development of the library should be in place.</p> <p>f) Current content subscriptions.</p> <p>Information technology provides wide access to information that may be available to faculty, students and administrators.</p> <p>a) There is a reliable and fast internet</p>			<p>List of library holdings for the degree programs applied for.</p> <p>Functional description of the library operations.</p> <p>List of journal of current content subscriptions.</p> <p>List of information technology resources, their location and their use.</p>
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<p>1.5 Students 1.5.1 Enrollment and Graduate Profile</p>	<p>15%</p>	<p>and intranet access. b) Information technology facilities are accessible to all users. c) Use and limits of information technology resources are properly communicated. d) Qualified and sufficient personnel manage information technology facilities.</p>				
<p>1.5.2 Selection and retention of students</p>		<p>Enrollment and graduation profile is indicative of the state of the program. It gives an idea on the progression of students across curricular levels. Attrition rate of students should be at a minimum level.</p> <p>Suitable students are recruited and admitted to the programs. The institution provides prospective and currently enrolled students sufficient information about its programs, admissions policies and graduation requirements, social and academic policies, refund policies, student conduct standards, and complaint and grievance procedures.</p>				<p>Record of average yearly enrollment and graduation profile for the past seven (7) years.</p> <p>Functional description of this element.</p>
<p>1.5.3 Performance in Licensure Examinations</p>		<p>This is part of student outcomes assessment. It demonstrates student knowledge, skills, and competencies consistent with institutional goals and the learning goals of the respective programs from which students have graduated.</p>				<p>If applicable, a record of PRC results for the last seven (7) years.</p>
<p>1.5.4 Student Support System</p>		<p>Student learning is enhanced by the quality of campus life. Student support should aim to address this and deal</p>				<p>List of student support services.</p>





<p>1.5.5 Graduate Tracer Study / Employment of graduates</p>			<p>with the spectrum of student needs, abilities and culture. Support services may include but are not limited to admissions, financial aid, registration, orientation, advising, counseling, tutoring, discipline, health, housing, placement, student organization and activities, cultural programming, security, and athletic activities.</p> <p>The career success of graduates is an indication of confidence from employers and clients. It supports the belief that the products (graduates) of the institution are significant contributors and achievers in their chosen professions. At a minimum, the institution should have at least information where its graduates go. It is ideal that institutions keep track of their graduates' careers and use this information to enhance its programs.</p>			<p>Employment record of graduates or similar document, which provides such information.</p>
<p>2. Research and Publication</p>	<p>30%</p>		<p>A COE or COD must exhibit a strong commitment to undertake research activities and an environment that encourages the conduct of such activities. Faculty and students must be given the opportunity to undertake research and must be able to access documents, references and equipment necessary for undertaking research work. There should be a clear plan for research projects consistent with the mission of the institution.</p>			<p>List of research staff including</p>
<p>2.1 Personnel</p>	<p>25%</p>		<p>Research personnel shall be defined herein as faculty or other full-time personnel doing research. a) Research is undertaken by</p>			

<p>2.2 Facilities and equipment</p>	<p>25%</p>	<p>professional and qualified staff</p> <p>b) There is sufficient number of qualified support staff to aid in the conduct of research activities.</p> <p>These are the institutional resources (facilities and equipment) utilized for purposes of research and accessible to the unit.</p> <p>a) Attendant facilities appropriate for research are present. b) Facilities must be furnished with necessary amenities and constant supply of utilities (power, water, communications, etc.). c) Development plan for research facilities must be available.</p>				<p>qualifications and research undertakings, both accomplished and ongoing, for the past seven (7) years.</p> <p>List of research support staff, their qualifications and current assignments. List of specialized facilities, if any.</p> <p>Functional description of each indicator under this standard.</p>
<p>2.3 Publications and other scientific activities</p>	<p>50%</p>	<p>Publications and the involvement of personnel in scientific activities are emphasized because these are direct measures of quality and recognized productivity.</p> <p>a) Non ISI publications both local and international b) Number of non-ISI publications (local and foreign). Included</p>				



						chapters in books, c) Number of ISI publications (local and foreign). d) Number of faculty with non-ISI publications. Include chapters in books. e) Number of faculty with ISI publications. f) Number of patents registered by faculty members of the Center. g) Number of books published by faculty members of the Center. h) Number of presentations at local scientific meetings, symposia, etc. i) Number of presentations at international scientific meetings, symposia, etc. j) Number of scientific meetings organized by faculty and other research staff.					
3. Extension and Linkages						COEs and CODs have a good background to undertake joint activities beyond their institutions in order to develop the quality of their programs. COEs and CODs must also be able to tap into the expertise and insights of private industries, government agencies and NGOs to enhance their program offerings.					
4. Institutional Qualifications						A good academic program stems from a clear and achievable institutional vision for excellence and quality. The institution's policies, strategies and principles coupled with excellence student support services and facilities must all be geared towards this vision.					
4.1 Mission/Vision						a) There is a defined institutional purpose.					Description of the institution. Copy of



4.2 Institutional policies, strategies and principles	35%	<p>b) There are defined and attainable goals.</p> <p>a) Policies, strategies and principles are congruent with the mission/vision of the institution</p> <p>b) Policies, strategies and principles are written and clearly communicated to the constituent members of the academic community.</p> <p>c) Strategies for development are time bound.</p>		mission and vision statement.
4.3 Support from higher administration	40%	<p>a) The institution has adequate financial resources to maintain and enhance its programs and services. The level of financial resources provides a reasonable expectation of financial viability and institutional improvement.</p> <p>b) Financial planning supports institutional goals and is linked to other institutional planning efforts.</p> <p>c) There are appropriate mechanisms in place to assess current policies and activities.</p> <p>d) Demonstrable/evident institutional support for faculty advancement.</p>		Functional description and examples of each of the indicators.
				List of faculty development activities in the past seven (7) years including the budget.



STANDARDS FOR THE SELECTION OF COEs and CODs FOR SCIENCE AND MATHEMATICS

CHEMISTRY PROGRAM

Elements	%	Score	Standards and Indicators	Documentary Requirements
1. Instructional Quality	45%		COEs and CODs must provide excellent human resources and facilities to attain its academic objectives. The instruction offered by COEs and CODs are based on good program administration, a faculty roster that strikes a balance between higher academic studies and professional experience, a flexible and dynamic curriculum, and student facilities that are sufficient to meet the demands of the academic community it serves.	
1.1 Faculty	40%		The faculty is the primary operative resource in an academic institution. They shoulder the institution's responsibilities to teach and facilitate learning, generate new knowledge, and assist in providing service programs of the institution to the community. The faculty roster of the unit should be composed of professionals qualified in terms of education, experience and skills. Educational qualifications are consistent with the programs and expected learning outcome of students. Faculty qualification shall be indicated by these standards: Faculty must be at least master's level for undergraduate programs and MS or PhD for graduate programs. Specializations of the faculty must be in the field or in a closely allied field. Specifically, the following standards shall apply:	a) Catalog or summary list of faculty and the degrees they hold. b) Individual Faculty Information Sheet (FIS).
1.1.1 Qualifications			<ul style="list-style-type: none"> • COEs must have at least five (5) full-time PhDs. (This is based on the number of core courses in the programs.) • CODs must have on full-time appointment at least two (2) PhDs and three (3) master's degree holders. <p>There are evidences of self-improvement among the faculty such as participation in postgraduate programs, trainings and skills development. Undertaking postgraduate trainings is a manifestation of self-motivation on the part of the faculty with the interest to improve its prime resource.</p>	



1.1.2 Quantity			<p>Core faculty is adequate in number.</p> <ul style="list-style-type: none"> • Full-time faculty constitutes 70% of total faculty complement of the unit. Faculty to student ratio is 1:30 or better for both undergraduate lecture and laboratory classes and 1:15 or better graduate classes. • There is ample distribution of faculty experience in the unit. Experience is measured either by the distribution of the levels or ranks of the faculty in the unit or by the average number of teaching years of the faculty or practice of the profession. 	
1.1.3 Recognition of Expertise			<p>This is a showcase of the faculty's outputs and other achievements, except publications.</p> <ul style="list-style-type: none"> • Participation in scientific meetings • Awards • Faculty participate in institutional governance activities • Faculty are active leaders of scientific/professional organizations <p>There is a written policy on faculty hiring and promotion. A faculty manual or similar document should define the criteria, qualifications, procedures adopted by the unit.</p>	List of faculty output to be appended in the FIS
1.1.4 Hiring and Promotion			<p>The curriculum must be characterized by the following:</p> <ol style="list-style-type: none"> a) Curriculum is compliant to the CHED-mandated curricula. b) Graduate courses are focused on and structured for specialized study and independent research. 	Copy of faculty manual or similar document detailing this requirement.
1.2 Curriculum	10%		<p>Generally, this will refer to the Director or Chair of the unit.</p> <ol style="list-style-type: none"> a) Chair/Director must have an earned Doctorate Degree and actively engaged in research. b) Leadership must be strongly evident particularly in terms of his accomplishments. <ul style="list-style-type: none"> • Presence of a clear direction and time bound goals. • Roles of administration, faculty and staff are clearly defined. • Presence of a system for self-assessment. 	Sample curriculum for every program offered by the unit.
1.3 Administration 1.4 Facilities 1.4.1 Laboratories, Facilities and Equipment	10%	25%	<ol style="list-style-type: none"> a) Physical acquisition and maintenance plan must be evident with appropriate budget allocation. 	List of specialized laboratories, facilities and equipment used for the programs, acquisition cost for each major equipment should be indicated.



<p>1.4.2 Library</p>		<p>b) Laboratories and facilities must be compliant to CHED mandated CMO.</p> <p>c) Equipment is adequate and appropriate for the research plan for the program.</p> <p>g) The library must be equipped in accordance to CHED-mandated requirements.</p> <p>h) It must have access to chemistry journals, indexed by Scopus or ISI, printed or electronic copies of journals or scientific databases such as Science Direct, Web of Science, Elsevier, Springer, etc.</p> <p>i) Library holdings are sufficient in quality, depth, diversity and currentness</p> <p>j) Library resources are accessible in any part of the campus and off-campus.</p> <p>k) The library must have an acquisition and development plan with corresponding budgetary allocation.</p> <p>l) Faculty, students and other members of academic community are involved in the planning and improvement of library holdings and other learning resources.</p> <p>Information technology provides wide access to information that is available to faculty, students and administrators.</p> <p>a) There is a reliable and fast internet and intranet access.</p> <p>b) Information technology facilities are accessible to all users.</p> <p>c) Qualified and sufficient personnel manage information technology facilities.</p>	<p>Description of development plans for facilities.</p> <p>Description of plans for acquisition and maintenance of equipment.</p> <p>List of library staff and the degrees they hold.</p> <p>List of library holdings for the degree programs applied for.</p> <p>Functional description of the library operations.</p> <p>List of journal of current content subscriptions.</p> <p>List of information technology resources, their location and their use.</p> <p>List of information technology resources, their location and their use.</p>
<p>1.5 Students 1.5.1 Enrollment and Graduate Profile</p>	<p>15%</p>	<p>Enrollment and graduation profile is indicative of the state of the program. It gives an idea on the progression of students across curricular levels.</p>	<p>Record of average yearly enrollment an graduation profile for the past seven (7) years.</p>
<p>1.5.2 Selection and retention of students</p>		<p>Graduate student enrolment should be at least five percent (5%) of the total enrolment in the program.</p>	<p>Functional description of this element.</p>



<p>1.5.3 Performance in Licensure Examinations</p> <p>1.5.4 Student Support System</p> <p>1.5.5 Graduate Tracer Study / Employment of graduates</p>		<p>The institution must have a well-defined admission and retention policy.</p> <p>Students are able to pass the licensure examination. The institution must have a commendable performance in the licensure examination, i.e., at least higher than the national passing rate for the past five (5) years.</p> <p>Student support system exists that enhances student learning. Support services may include financial aid, registration, orientation, advising, counseling, tutoring, discipline, health, housing, placement, student organization and activities, cultural programming, security, and athletic activities.</p> <p>The university tracks the career success of graduates and makes use of this information to enhance the program.</p> <p>At a minimum, the institution should have at least information where its graduates go. Graduates are able to find employment within a reasonable time and within their field of study.</p> <p>Graduates are able to find acceptance in graduate programs.</p> <p>A COE or COD is able to produce significant research output.</p> <p>There should be a clear and sustained research programs/projects consistent with the mission of the institution.</p> <p>Research personnel shall be defined as academic or non-academic staff engaged in research.</p> <p>a) All full-time faculty members must be engaged in research.</p>	<p>If applicable, a record of PRC results for the last seven (7) years.</p> <p>List of student support services.</p> <p>Employment record of graduates or similar document, which provides such information.</p>
<p>2. Research and Publication</p> <p>2.1 Personnel</p>	<p>30%</p> <p>25%</p>		<p>List of research staff including qualifications and research undertakings, both accomplished and ongoing, for the past seven (7) years.</p> <p>List of research support staff, their qualifications and current assignments.</p>



2.2 Facilities and equipment	25%	These are the institutional resources (facilities and equipment) utilized for purposes of research and accessible to the unit. a) Availability of research space and attendant facilities appropriate for research are present. b) Development and maintenance plans for research facilities must be available.	List of specialized facilities, if any. Functional description of each indicator under this standard.
2.3 Publications	50%	Publications and the involvement of personnel in scientific activities are emphasized because these are direct measures of quality and recognized productivity. a) At least fifty percent (50%) of the full-time faculty members must have published in ISI/Scopus journals within the last three (3) years. b) A patent can be credited as an ISI publication. c) A chapter in a specialized book/monograph may be credited as an ISI publication.	
2.4 Other Scientific Activities	10%	All full-time faculty members must have at least one (1) paper presentation in a national or international scientific meeting every two (2) years. The department is encouraged to organize a national or international scientific meetings/conference/seminars.	
3. Extension and Linkages	20%	The COE undertakes joint activities beyond their institutions in order to develop the quality of their programs. COEs and CODs must also be able to tap into the expertise and insights of private industries, government agencies and NGOs to enhance their program offerings. The unit is engaged in extension activities that provide assistance to others such as, human resource development.	
3.1 Extension	50%		<ul style="list-style-type: none"> • Record of extension services provided in the last 7 years. • Description of activities undertaken
3.2 Linkages	50%	The unit has existing local and international linkages to enhance academic programs and research activities. The linkages can involve industry, government or other Higher Education Institutions (HEIs).	<ul style="list-style-type: none"> • Record of local and international linkages. • Description of linkages established.
4. Institutional Qualifications	5%	A good academic program stems from a clear and achievable institutional vision for excellence and quality. The institution's policies, strategies and principles coupled with excellence student support services and facilities	



4.1 Mission/Vision	25%	<p>must all be geared towards this vision.</p> <p>a) There is a defined institutional purpose. b) There are defined and attainable goals.</p>	Description of the institution. Copy of mission and vision statement.
4.2 Institutional policies, strategies and principles	35%	<p>a) Policies, strategies and principles are congruent with the mission/vision of the institution b) Policies, strategies and principles are written and clearly communicated to the constituent members of the academic community. c) Strategies for development are time bound.</p>	Functional description and examples of each standard in this element.
4.3 Support from higher administration	40%	<p>a) The institution has adequate financial resources to maintain and enhance its programs and services. The level of financial resources provides a reasonable expectation of financial viability and institutional improvement. b) Financial planning supports institutional goals and is linked to other institutional planning efforts. c) There are appropriate mechanisms in place to assess current policies and activities. d) Demonstrable/evident institutional support for faculty advancement.</p>	Functional description and examples of each of the indicators.
			List of faculty development activities in the past seven (7) years including the budget.



STANDARDS FOR THE SELECTION OF COEs and CODs FOR SCIENCE AND MATHEMATICS

ENVIRONMENTAL SCIENCE

Elements	%	Score	Standards and Indicators	Documentary Requirements
1. Instructional Quality	45%		COEs and CODs must provide excellent human resources and facilities to attain its academic objectives. The instruction offered by COEs and CODs are based on good program administration, a faculty roster that strikes a balance between higher academic studies and professional experience, a flexible and dynamic curriculum, and student facilities that are sufficient to meet the demands of the academic community it serves.	
1.1 Faculty	40%		The faculty is the primary operative resource in an academic institution. They shoulder the institution's responsibilities to teach and facilitate learning, generate new knowledge, and assist in providing service programs of the institution to the community. The faculty roster of the unit should be composed of professionals qualified in terms of education, experience and skills. Educational qualifications are consistent with the programs and expected learning outcome of students.	a) Catalog or summary list of faculty and the degrees they hold. b) Individual Faculty Information Sheet (FIS)
1.1.1 Qualifications			Faculty qualification shall be indicated by these standards: Faculty must be at least master's level for undergraduate programs and MS or PhD for graduate programs. Specializations of the faculty must be in the field or in a closely allied field. Specifically, the following standards shall apply: <ul style="list-style-type: none"> • COEs must have at least five (5) fulltime PhDs. (This is based on the number of core courses in the programs.) • CODs must have on fulltime appointment at least two (2) PhDs and three (3) masters degree holders. There are evidences of self-improvement among the faculty such as participation in postgraduate programs, trainings and skills development. Undertaking postgraduate trainings is a manifestation of self-motivation on the part of the faculty with the interest to	



1.1.2 Quantity			<p>improve its prime resource. Core faculty is adequate in number.</p> <ul style="list-style-type: none"> • Full-time faculty constitutes 70% of total faculty complement of the unit. Faculty to student ration is 1:30 or better for both undergraduate lecture and laboratory classes and 1:15 or better graduate classes. • There is ample distribution of faculty experience in the unit. Experience is measured either by the distribution of the levels or ranks of the faculty in the unit or by the average number of teaching years of the faculty. 	
1.1.3 Productivity			<p>This is a showcase of the faculty's outputs and other achievements, except publications.</p> <ul style="list-style-type: none"> • Participation in scientific meetings • Awards • Faculty participate in institutional governance activities • Faculty are active leaders or members of scientific organizations 	List of faculty output to be appended in the FIS
1.1.4 Hiring and Promotion			<p>There is a written policy on faculty hiring and promotion. A faculty manual or similar document should define the criteria, qualifications, procedures adopted by the unit.</p>	Copy of faculty manual or similar document detailing this requirement.
1.2 Curriculum	10%		<p>The curriculum must be characterized by the following:</p> <ol style="list-style-type: none"> Curriculum is a coherent program of study. Curriculum has sufficient content and depth to characterize the different levels of study (BS, MS, PhD), as appropriate. Graduate courses are focused on and structured for specialized study and independent research. 	Sample curriculum for every program offered by the unit.
1.3 Administration	10%		<p>Generally, this will refer to the Director or Chair of the unit.</p> <ol style="list-style-type: none"> Chair/Director is suitably qualified. Leadership must be strongly evident particularly in terms of <ul style="list-style-type: none"> • Efficient operation. • Presence of a clear direction and time bound goals. • Roles of administration, faculty and staff are clearly defined. • Presence of a system for self-assessment. 	
1.4 Facilities	25%		<p>Only facilities and equipment that are under the direct responsibility</p>	



<p>1.4.1 Laboratories , Facilities and Equipment</p>		<p>of the unit shall be included for this element.</p> <p>a) Physical resources are planned and developed according to target goals.</p> <p>b) Laboratories ad facilities are adequate for the programs offered.</p> <p>c) Laboratories and facilities are suitable and have amenities appropriate and necessary to facilitate student learning.</p> <p>d) Equipment is adequate and appropriate for the courses listed in the curriculum.</p> <p>e) There is a system to select, maintain, and replace equipment.</p>	<p>List of specialized laboratories, facilities and equipment used for the programs, acquisition cost for each major equipment should be indicated.</p> <p>Description of development plans for facilities.</p> <p>Description of plans for acquisition and maintenance of equipment.</p>
<p>1.4.2 Library</p>		<p>The library is the primary learning resource unit in the institution. It is the main repository of learning materials available to constituent members of the community. The library holdings should not simply be a collection of materials but a collection that is supportive of the needs and requirements of the degrees and programs offered in the institution.</p> <p>a) The library has adequate and suitably qualified staff. Chief librarian must have a master's degree in an appropriate professional training and registered with the PRC. There should be at least one (1) professional librarian for every 1000 students.</p> <p>b) Library holdings are sufficient in quality, depth, diversity and currentness to support the courses, programs and degrees. Fifty percent (50%) of library holdings should be distinct titles. Basic collection should include: general References, Cultural, Filipiniana, Humanities, Social Science and Science and Tech.</p> <p>c) Library resources are accessible. Office hours should be reasonable to accommodate all users, including graduate students with night classes. Space should accommodate at least five percent (5%) of total enrollment.</p>	<p>List of library staff and the degrees they hold.</p> <p>List of library holdings for the degree programs applied for.</p> <p>Functional description of the library operations.</p>



			<p>d) There is sufficient and consistent budgetary support for the effective maintenance, security, and improvement of library resources. Library fees should be used for library operations and development.</p> <p>e) Faculty, students and other members of academic community are involved in the planning and improvement of library holdings and other learning resources. Mechanisms to facilitate the development of the library should be in place.</p> <p>f) Current content subscriptions.</p>	List of journal of current content subscriptions.
1.4.3 Information Capability			<p>Information technology provides wide access to information that may be available to faculty, students and administrators.</p> <p>a) There is a reliable and fast internet and intranet access.</p> <p>b) Information technology facilities are accessible to all users.</p> <p>c) Use and limits of information technology resources are properly communicated.</p> <p>d) Qualified and sufficient personnel manage information technology facilities.</p>	List of information technology resources, their location and their use.
1.5 Students	15%			
1.5.1 Enrollment and Graduate Profile			<p>Enrollment and graduation profile is indicative of the state of the program. It gives an idea on the progression of students across curricular levels. Attrition rate of students should be at a minimum level.</p> <p>Suitable students are recruited and admitted to the programs. The institution provides prospective and currently enrolled students sufficient information about its programs, admissions policies and graduation requirements, social and academic policies, refund policies, student conduct standards, and complaint and grievance procedures.</p>	Record of average yearly enrollment and graduation profile for the past seven (7) years.
1.5.2 Selection and retention of students			<p>This is part of student outcomes assessment. It demonstrates student knowledge, skills, and competencies consistent with institutional goals and the learning goals of the respective programs from which students have graduated.</p> <p>Student learning is enhanced by the quality of campus life. Student support should aim to address this and deal with the spectrum of student needs, abilities and culture. Support services may include but are not limited to admissions, financial aid, registration,</p>	Functional description of this element.
1.5.3 Performance in Licensure Examinations				If applicable, a record of PRC results for the last seven (7) years.
1.5.4 Student Support System				List of student support services.



1.5.5 Graduate Tracer Study / Employment of graduates			orientation, advising, counseling, tutoring, discipline, health, housing, placement, student organization and activities, cultural programming, security, and athletic activities. The career success of graduates is an indication of confidence from employers and clients. It supports the belief that the products (graduates) of the institution ate significant contributors and achievers in their chosen professions. At a minimum, the institution should have at least information where its graduates go. It is ideal that institutions keep track of their graduates' careers and use this information to enhance its programs.	Employment record of graduates or similar document, which provides such information.
2. Research and Publication	30%		A COE or COD must exhibit a strong commitment to undertake research activities and an environment that encourages the conduct of such activities. Faculty and students must be given the opportunity to undertake research and must be able to access documents, references and equipment necessary for undertaking research work. There should be a clear plan for research projects consistent with the mission of the institution. Research personnel shall be defined herein as faculty or other full-time personnel doing research.	
2.1 Personnel	25%		a) Research is undertaken by professional and qualified staff b) There is sufficient number of qualified support staff to aid in the conduct of research activities. These are the institutional resources (facilities and equipment) utilized for purposes of research and accessible to the unit. a) Attendant facilities appropriate for research are present. b) Facilities must be furnished with necessary amenities and constant supply of utilities (power, water, communications, etc.). c) Development plan for research facilities must be available.	List of research staff including qualifications and research undertakings, both accomplished and ongoing, for the past seven (7) years. List of research support staff, their qualifications and current assignments. List of specialized facilities, if any. Functional description of each indicator under this standard.
2.2 Facilities and Equipment	25%		Publications and the involvement of personnel in scientific activities	
2.3 Publications and other	50%			



scientific activities			are emphasized because these are direct measures of quality and recognized productivity.	
			<ul style="list-style-type: none"> a) Non ISI publications both local and international b) Number of non-ISI publications (local and foreign). Included chapters in books, c) Number of ISI publications (local and foreign). d) Number of faculty with non-ISI publications. Include chapters in books. e) Number of faculty with ISI publications. f) Number of patents registered by faculty members of the Center. g) Number of books published by faculty members of the Center. h) Number of presentations at local scientific meetings, symposia, etc. i) Number of presentations at international scientific meetings, symposia, etc. j) Number of scientific meetings organized by faculty and other research staff. 	
3. Extension and Linkages		20%	COEs and CODs have a good background to undertake joint activities beyond their institutions in order to develop the quality of their programs. COEs and CODs must also be able to tap into the expertise and insights of private industries, government agencies and NGOs to enhance their program offerings.	
3.1 Extension		50	Extension refers to assistance that the unit provides to other entities (i.e., outreach)	<ul style="list-style-type: none"> • Record of extension services provided in the last seven (7) years. • Description of activities undertaken.
3.2 Linkages		50	Linkages refer to activities that seek to enhance the academic offerings or research activities of the unit.	<ul style="list-style-type: none"> • Record of existing local and international linkages. • Description of linkages established.
4. Institutional Qualifications		5%	A good academic program stems from a clear and achievable institutional vision for excellence and quality. The institution's	



				<p>policies, strategies and principles coupled with excellence student support services and facilities must all be geared towards this vision.</p> <p>a) There is a defined institutional purpose. b) There are defined and attainable goals.</p> <p>a) Policies, strategies and principles are congruent with the mission/vision of the institution b) Policies, strategies and principles are written and clearly communicated to the constituent members of the academic community. c) Strategies for development are time bound.</p> <p>a) The institution has adequate financial resources to maintain and enhance its programs and services. The level of financial resources provides a reasonable expectation of financial viability and institutional improvement. b) Financial planning supports institutional goals and is linked to other institutional planning efforts. c) There are appropriate mechanisms in place to assess current policies and activities. d) Demonstrable/evident institutional support for faculty advancement.</p>	<p>Description of the institution. Copy of mission and vision statement.</p> <p>Functional description and examples of each standard in this element.</p> <p>Functional description and examples of each of the indicators.</p> <p>List of faculty development activities in the past seven (7) years including the budget.</p>
4.1 Mission/Vision	25%				
4.2 Institutional policies, strategies and principles	35%				
4.3 Support from higher administration	40%				



STANDARDS FOR THE SELECTION OF COEs and CODs FOR SCIENCE AND MATHEMATICS

GEOLOGY PROGRAM

Elements	%	Score	Standards and Indicators	Documentary Requirements
1. Instructional Quality	45%		COEs and CODs must provide excellent human resources and facilities to attain its academic objectives. The instruction offered by COEs and CODs are based on good program administration, a faculty roster that strikes a balance between higher academic studies and professional experience, a flexible and dynamic curriculum, and student facilities that are sufficient to meet the demands of the academic community it serves.	
1.1 Faculty	40%		The faculty is the primary operative resource in an academic institution. They shoulder the institution's responsibilities to teach and facilitate learning, generate new knowledge, and assist in providing service programs of the institution to the community. The faculty roster of the unit should be composed of professionals qualified in terms of education, experience and skills.	a) Catalog or summary list of faculty and the degrees they hold. b) Individual Faculty Information Sheet (FIS).
1.1.1 Qualifications			Educational qualifications are consistent with the programs and expected learning outcome of students. Faculty qualification shall be indicated by these standards: Faculty must be at least master's level for undergraduate programs and MS or PhD for graduate programs. Specializations of the faculty must be in the field or in a closely allied field. Specifically, the following standards shall apply: <ul style="list-style-type: none"> • COEs must have at least five (5) full-time PhDs. (This is based on the number of core courses in the programs.) • CODs must have on full-time appointment at least one (1) PhDs and one (1) master's degree holders. There are evidences of self-improvement among the faculty such as participation in postgraduate programs, trainings and skills development. Undertaking postgraduate trainings is a manifestation of self-motivation on	



			<p>the part of the faculty with the interest to improve its prime resource. Core faculty is adequate in number.</p> <ul style="list-style-type: none"> For COE, full-time faculty constitutes 70% of total faculty complement of the unit. Faculty to student ration is 1:30 or better for both undergraduate lecture and laboratory classes and 1:15 or better for graduate classes. For COD, full-time faculty constitutes 50% of total faculty complement of the unit. Faculty to student ratio is 1:30 or better for both undergraduate lecture and laboratory classes and 1:15 or better graduate classes. There is ample distribution of faculty experience in the unit. Experience is measured either by the distribution of the levels or ranks of the faculty in the unit or by the average number of teaching years of the faculty.
1.1.2	Quantity		

1.1.3	Productivity		<p>This is a showcase of the faculty's outputs and other achievements, except publications.</p> <ul style="list-style-type: none"> Participation in scientific meetings Awards Faculty participate in institutional governance activities Faculty are active leaders or members of scientific organizations <p>There is a written policy on faculty hiring and promotion. A faculty manual or similar document should define the criteria, qualifications, procedures adopted by the unit.</p>	List of faculty output to be appended in the FIS
1.1.4	Hiring and Promotion		<p>The curriculum must be characterized by the following:</p> <ol style="list-style-type: none"> Curriculum is a coherent program of study. Curriculum has sufficient content and depth to characterize the different levels of study (BS, MS, PhD), as appropriate. Graduate courses are focused on and structured for specialized study and independent research. 	Copy of faculty manual or similar document detailing this requirement.
1.2	Curriculum	10%	<p>Generally, this will refer to the Director or Chair of the unit.</p> <ol style="list-style-type: none"> Chair/Director is suitably qualified. Leadership must be strongly evident particularly in terms of <ul style="list-style-type: none"> Efficient operation. Presence of a clear direction and time bound goals. Roles of administration, faculty and staff are clearly defined. Presence of a system for self-assessment. 	Sample curriculum for every program offered by the unit.
1.3	Administration	10%	<p>Only facilities and equipment that are under the direct responsibility of the unit shall be included for this element.</p>	
1.4	Facilities	25%		



1.4.1 Laboratories, Facilities and Equipment	Physical resources are planned and developed according to target goals.	List of specialized laboratories, facilities and equipment used for the programs, acquisition cost for each major equipment should be indicated.
<p>b) Laboratories ad facilities are adequate for the programs offered.</p> <p>c) Laboratories and facilities are suitable and have amenities appropriate and necessary to facilitate student learning.</p> <p>d) Equipment is adequate and appropriate for the courses listed in the curriculum.</p> <p>e) There is a system to select, maintain, and replace equipment.</p>	<p>a) Physical resources are planned and developed according to target goals.</p>	<p>Description of development plans for facilities.</p>
<p>1.4.2 Library</p> <p>The library is the primary learning resource unit in the institution. It is the main repository of learning materials available to constituent members of the community. The library holdings should not simply be a collection of materials but a collection that is supportive of the needs and requirements of the degrees and programs offered in the institution.</p> <p>a) The library has adequate and suitably qualified staff. Chief librarian must have a master's degree in an appropriate professional training and registered with the PRC. There should be at least one (1) professional librarian for every 1000 students.</p> <p>b) Library holdings are sufficient in quality, depth, diversity and currentness to support the courses, programs and degrees. Fifty percent (50%) of library holdings should be distinct titles. Basic collection should include: general References, Cultural, Filipiniana, Humanities, Social Science and Science and Tech.</p> <p>c) Library resources are accessible. Office hours should be reasonable to accommodate all users, including graduate students with night classes. Space should accommodate at least five percent (5%) of total enrollment.</p> <p>d) There is sufficient and consistent budgetary support for the effective maintenance, security, and improvement of library resources. Library fees should be used for library operations and development.</p> <p>e) Faculty, students and other members of academic community are</p>	<p>a) Physical resources are planned and developed according to target goals.</p> <p>b) Laboratories ad facilities are adequate for the programs offered.</p> <p>c) Laboratories and facilities are suitable and have amenities appropriate and necessary to facilitate student learning.</p> <p>d) Equipment is adequate and appropriate for the courses listed in the curriculum.</p> <p>e) There is a system to select, maintain, and replace equipment.</p> <p>The library is the primary learning resource unit in the institution. It is the main repository of learning materials available to constituent members of the community. The library holdings should not simply be a collection of materials but a collection that is supportive of the needs and requirements of the degrees and programs offered in the institution.</p> <p>a) The library has adequate and suitably qualified staff. Chief librarian must have a master's degree in an appropriate professional training and registered with the PRC. There should be at least one (1) professional librarian for every 1000 students.</p> <p>b) Library holdings are sufficient in quality, depth, diversity and currentness to support the courses, programs and degrees. Fifty percent (50%) of library holdings should be distinct titles. Basic collection should include: general References, Cultural, Filipiniana, Humanities, Social Science and Science and Tech.</p> <p>c) Library resources are accessible. Office hours should be reasonable to accommodate all users, including graduate students with night classes. Space should accommodate at least five percent (5%) of total enrollment.</p> <p>d) There is sufficient and consistent budgetary support for the effective maintenance, security, and improvement of library resources. Library fees should be used for library operations and development.</p> <p>e) Faculty, students and other members of academic community are</p>	<p>Description of plans for acquisition and maintenance of equipment.</p> <p>List of library staff and the degrees they hold.</p> <p>List of library holdings for the degree programs applied for.</p> <p>Functional description of the library operations.</p> <p>-ditto-</p> <p>-ditto-</p>



<p>1.4.3 Information Technology capability</p>		<p>involved in the planning and improvement of library holdings and other learning resources. Mechanisms to facilitate the development of the library should be in place.</p> <p>f) Current content subscriptions.</p> <p>Information technology provides wide access to information that may be available to faculty, students and administrators.</p> <p>d) There is a reliable and fast internet and intranet access.</p> <p>e) Information technology facilities are accessible to all users.</p> <p>f) Use and limits of information technology resources are properly communicated.</p> <p>g) Qualified and sufficient personnel manage information technology facilities.</p>	<p>List of journal of current content subscriptions.</p> <p>List of information technology resources, their location and their use.</p>
<p>1.5 Students 1.5.1 Enrollment and Graduate Profile</p>	<p>15%</p>	<p>Enrollment and graduation profile is indicative of the state of the program. It gives an idea on the progression of students across curricular levels. Attrition rate of students should be at a minimum level.</p>	<p>Record of average yearly enrollment an graduation profile for the past seven (7) years.</p>
<p>1.5.2 Selection and retention of students</p>		<p>Suitable students are recruited and admitted to the programs. The institution provides prospective and currently enrolled students sufficient information about its programs, admissions policies ad graduation requirements, social and academic policies, refund policies, student conduct standards, and complaint and grievance procedures.</p>	<p>Functional description of this element.</p>
<p>1.5.3 Performance in Licensure Examinations</p>		<p>This is part of student outcomes assessment. It demonstrates student knowledge, skills, and competencies consistent with institutional goals and the learning goals of the respective programs from which students have graduated.</p>	<p>If applicable, a record of PRC results for the last seven (7) years.</p>
<p>1.5.4 Student Support System</p>		<p>Student learning is enhanced by the quality of campus life. Student support should aim to address this and deal with the spectrum of student needs, abilities and culture. Support services may include but are not limited to admissions, financial aid, registration, orientation, advising, counseling, tutoring, discipline, health, housing, placement, student organization and activities, cultural programming, security, and athletic activities.</p>	<p>List of student support services.</p>
<p>1.5.5 Graduate Tracer Study</p>		<p>The career success of graduates is an indication of confidence from</p>	<p>Employment record of</p>



/ Employment of graduates		employers and clients. It supports the belief that the products (graduates) of the institution ate significant contributors and achievers in their chosen professions. At a minimum, the institution should have at least information where its graduates go. It is ideal that institutions keep track of their graduates' careers and use this information to enhance its programs.	graduates or similar document, which provides such information.
2. Research and Publication	30%	A COE or COD must exhibit a strong commitment to undertake research activities and an environment that encourages the conduct of such activities. Faculty and students must be given the opportunity to undertake research and must be able to access documents, references and equipment necessary for undertaking research work. There should be a clear plan for research projects consistent with the mission of the institution.	
2.1 Personnel	25%	Research personnel shall be defined herein as faculty or other full-time personnel doing research. b) Research is undertaken by professional and qualified staff	List of research staff including qualifications and research undertakings, both accomplished and ongoing, for the past seven (7) years.
2.2 Facilities and equipment	25%	c) There is sufficient number of qualified support staff to aid in the conduct of research activities. These are the institutional resources (facilities and equipment) utilized for purposes of research and accessible to the unit. a) Attendant facilities appropriate for research are present. b) Facilities must be furnished with necessary amenities and constant supply of utilities (power, water, communications, etc.). c) Development plan for research facilities must be available.	List of research support staff, their qualifications and current assignments. List of specialized facilities, if any. Functional description of each indicator under this standard.
2.3 Publications and other scientific activities	50%	Publications and the involvement of personnel in scientific activities are emphasized because these are direct measures of quality and recognized productivity. a) Non ISI publications both local and international b) Number of non-ISI publications (local and foreign). Included chapters in books,	



				<p>c) Number of ISI publications (local and foreign).</p> <p>d) Number of faculty with non-ISI publications. Include chapters in books.</p> <p>e) Number of faculty with ISI publications.</p> <p>f) Number of patents registered by faculty members of the Center.</p> <p>g) Number of books published by faculty members of the Center.</p> <p>h) Number of presentations at local scientific meetings, symposia, etc.</p> <p>i) Number of presentations at international scientific meetings, symposia, etc.</p> <p>j) Number of scientific meetings organized by faculty and other research staff.</p>	
3. Extension and Linkages	20%		<p>COEs and CODs have a good background to undertake joint activities beyond their institutions in order to develop the quality of their programs. COEs and CODs must also be able to tap into the expertise and insights of private industries, government agencies and NGOs to enhance their program offerings in accordance with the provisions of CMO No. Series 2006.</p>		
4. Institutional Qualifications	5%		<p>A good academic program stems from a clear and achievable institutional vision for excellence and quality. The institution's policies, strategies and principles coupled with excellence student support services and facilities must all be geared towards this vision.</p>	<p>Description of the institution. Copy of mission and vision statement.</p>	
4.1 Mission/Vision	25%		<p>a) There is a defined institutional purpose.</p> <p>b) There are defined and attainable goals.</p>		
4.2 Institutional policies, strategies and principles	35%		<p>a) Policies, strategies and principles are congruent with the mission/vision of the institution</p> <p>b) Policies, strategies and principles are written and clearly communicated to the constituent members of the academic community.</p> <p>c) Strategies for development are time bound.</p>	<p>Functional description and examples of each standard in this element.</p>	
4.3 Support from higher administration	40%		<p>a) The institution has adequate financial resources to maintain and enhance its programs and services. The level of financial resources provides a reasonable expectation of financial viability and institutional improvement.</p> <p>b) Financial planning supports institutional goals and is linked to other institutional planning efforts.</p>	<p>Functional description and examples of each of the indicators.</p>	



		<p>c) There are appropriate mechanisms in place to assess current policies and activities.</p> <p>d) Demonstrable/evident institutional support for faculty advancement.</p>	<p>List of faculty development activities in the past seven (7) years including the budget.</p>
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STANDARDS FOR THE SELECTION OF COEs and CODs FOR SCIENCE AND MATHEMATICS

MARINE SCIENCE PROGRAM

Elements	%	Score	Standards and Indicators	Documentary Requirements
1. Instructional Quality	45%		COEs and CODs must provide excellent human resources and facilities to attain its academic objectives. The instruction offered by COEs and CODs are based on good program administration, a faculty roster that strikes a balance between higher academic studies and professional experience, a flexible and dynamic curriculum, and student facilities that are sufficient to meet the demands of the academic community it serves.	
1.1 Faculty	40%		The faculty is the primary operative resource in an academic institution. They shoulder the institution's responsibilities to teach and facilitate learning, generate new knowledge, and assist in providing service programs of the institution to the community. The faculty roster of the unit should be composed of professionals qualified in terms of education, experience and skills.	a) Catalog or summary list of faculty and the degrees they hold. b) Individual Faculty Information Sheet (FIS).
1.1.1 Qualifications			<p>Educational qualifications are consistent with the programs and expected learning outcome of students.</p> <p>Faculty qualification shall be indicated by these standards: Faculty must be at least master's level for undergraduate programs and MS or PhD for graduate programs. Specializations of the faculty must be in the field or in a closely allied field. Specifically, the following standards shall apply:</p> <ul style="list-style-type: none"> • COEs must have at least seven (7) full-time PhDs. (This is based on the number of core courses in the programs). Core courses include oceanography, marine chemistry, sea grass, mangrove, corals, fish and specialization (niche). • CODs must have on full-time appointment at least three (3) PhDs and four (4) master's degree holders. <p>There are evidences of self-improvement among the faculty such as participation in postgraduate programs, publishable research, trainings and skills development. Undertaking postgraduate trainings is a manifestation of</p>	



			self-motivation on the part of the faculty with the interest to improve its prime resource.	
1.1.2 Quantity			<p>Core faculty is adequate in number.</p> <ul style="list-style-type: none"> • Full-time faculty constitutes 70% of total faculty complement of the unit. Faculty to student ratio is 1:30 or better for both undergraduate lecture and laboratory classes and 1:15 or better graduate classes. • There is ample distribution of faculty experience in the unit. Experience is measured either by the distribution of the levels or ranks of the faculty in the unit, average number of teaching years of the faculty and number of publication per faculty per year (International peer reviewed). 	
1.1.3 Productivity			<p>This is a showcase of the faculty's outputs and other achievements, in addition to publications.</p> <ul style="list-style-type: none"> • Participation in scientific meetings • Awards • Faculty participate in institutional governance activities • Faculty are active leaders or members of scientific organizations <p>There is a written policy on faculty hiring and promotion. A faculty manual or similar document should define the criteria, qualifications, procedures adopted by the unit.</p>	List of faculty output to be appended in the FIS
1.1.4 Hiring and Promotion			<p>There is a written policy on faculty hiring and promotion. A faculty manual or similar document should define the criteria, qualifications, procedures adopted by the unit.</p>	Copy of faculty manual or similar document detailing this requirement.
1.2 Curriculum	10%		<p>The curriculum must be characterized by the following:</p> <ol style="list-style-type: none"> Curriculum is a coherent program of study. Curriculum has sufficient content and depth to characterize the different levels of study (BS, MS, PhD), as appropriate. Graduate courses are focused on and structured for specialized study and independent research. 	Sample curriculum for every program offered by the unit.
1.3 Administration	10%		<p>Generally, this will refer to the Director or Chair of the unit.</p> <ol style="list-style-type: none"> Chair/Director is suitably qualified (clear selection process). Leadership must be strongly evident particularly in terms of <ul style="list-style-type: none"> • Efficient operation. • Presence of a clear direction and time bound goals. • Roles of administration, faculty and staff are clearly defined. • Presence of a regular system for external and self-assessment (e.g., ISO Criteria). 	
1.4 Facilities	25%		<p>Only facilities and equipment that are under the direct responsibility of the unit shall be included for this element.</p>	



1.4.1 Laboratories, Facilities and Equipment		<p>a) Physical resources are planned and developed according to target goals.</p> <p>b) Laboratories and facilities are adequate for the programs offered.</p> <p>c) Laboratories and facilities are suitable and have amenities appropriate and necessary to facilitate student learning.</p> <p>d) Equipment is adequate and appropriate for the courses listed in the curriculum.</p> <p>e) There is a system to select, maintain, and replace equipment.</p>	List of specialized laboratories, facilities and equipment used for the programs, acquisition cost for each major equipment should be indicated.
1.4.2 Library		<p>The library is the primary learning resource unit in the institution. It is the main repository of learning materials available to constituent members of the community. The library holdings should not simply be a collection of materials but a collection that is supportive of the needs and requirements of the degrees and programs offered in the institution.</p> <p>a) The library has adequate and suitably qualified staff. Chief librarian must have a master's degree in an appropriate professional training and registered with the PRC. There should be at least one (1) professional librarian and two (2) more library staff for every 1000 students at least one (1) of the staff should be adept at IT to facilitate access to e-resources.</p> <p>b) Library holdings are sufficient in quality, depth, diversity and currentness to support the courses, programs and degrees. Library holdings should include at least five (5) current books (distinct titles) per discipline focus.</p> <p>c) Library resources are accessible. Office hours should be reasonable to accommodate all users, including graduate students with night classes. Space should accommodate at least five percent (5%) of total enrollment.</p> <p>d) There is sufficient and consistent budgetary support for the effective maintenance, security, and improvement of library resources.</p>	<p>Description of development plans for facilities.</p> <p>Clear documentation of utilization.</p> <p>Description of plans for acquisition and maintenance of equipment.</p> <p>List of library staff and the degrees they hold.</p> <p>List of library holdings for the degree programs applied for.</p> <p>Functional description of the library operations.</p>



<p>1.4.3 Information Technology capability</p>		<p>Library fees should be used for library operations and development.</p> <p>e) Faculty, students and other members of academic community are involved in the planning and improvement of library holdings and other learning resources. Mechanisms to facilitate the development of the library should be in place.</p> <p>f) Current content subscriptions and access to e-resources.</p> <p>Information technology provides wide access to information that may be available to faculty, students and administrators.</p> <p>a) There is a reliable and fast internet and intranet access.</p> <p>b) Information technology facilities are accessible to all users.</p> <p>c) Use and limits of information technology resources are properly communicated.</p> <p>d) Qualified and sufficient personnel manage information technology facilities.</p>	<p>List of journal of current content subscriptions.</p> <p>List of information technology resources, their location and their use.</p>
<p>1.5 Students</p> <p>1.5.1 Enrollment and Graduate Profile</p>	<p>15%</p>	<p>Enrollment and graduation profile is indicative of the state of the program. It gives an idea on the progression of students across curricular levels. Attrition rate of students should be at a minimum level.</p>	<p>Record of average yearly enrollment and graduation profile for the past seven (7) years.</p>
<p>1.5.2 Selection and retention of students</p>		<p>Suitable students are recruited and admitted to the programs. The institution provides prospective and currently enrolled students sufficient information about its programs, admissions policies and graduation requirements, social and academic policies, refund policies, student conduct standards, and complaint and grievance procedures.</p>	<p>Functional description of this element.</p>
<p>1.5.3 Publication Performance of students</p>		<p>This is part of student outcomes assessment. It demonstrates student knowledge, skills, and competencies consistent with institutional goals and the learning goals of the respective programs from which students have graduated.</p>	<p>If applicable, a record of PRC results for the last seven (7) years.</p>
<p>1.5.4 Student Support System</p>		<p>Student learning is enhanced by the quality of campus life. Student support should aim to address this and deal with the spectrum of student needs, abilities and culture. Support services may include but are not limited to admissions, financial aid, registration, orientation, advising, counseling, tutoring, discipline, health, housing, placement, student organization and activities, cultural programming, security, and athletic activities.</p>	<p>List of student support services.</p>
<p>1.5.5 Graduate Tracer Study</p>		<p>The career success of graduates is an indication of confidence from</p>	<p>Employment record of</p>





/ Employment of graduates		employers and clients. It supports the belief that the products (graduates) of the institution are significant contributors and achievers in their chosen professions. At a minimum, the institution should have at least information where its graduates go. It is ideal that institutions keep track of their graduates' careers and use this information to enhance its programs.	graduates or similar document, which provides such information.
2. Research and Publication	30%	A COE or COD must demonstrate a strong commitment to undertake research activities and an environment that encourages the conduct of such activities. Faculty and students must undertake research and must be able to access documents, references and equipment necessary for undertaking research work. There should be a clear plan for research projects consistent with the mission of the institution. Institutions must provide an enabling environment for faculty and students to undertake research [fifty percent (50%) of the full-time faculty load should be dedicated to research] because COEs and CODs must generate new information.	Documentation of faculty loading.
2.1 Personnel	25%	Research personnel shall be defined herein as faculty or other full-time personnel doing research. a) Research is undertaken by professional and qualified staff b) There is sufficient number of qualified research and admin support staff to aid in the conduct of research activities.	List of research staff including qualifications and research undertakings, both accomplished and ongoing, for the past seven (7) years.
2.2 Facilities and equipment	25%	These are the institutional resources (facilities and equipment) utilized solely for the purposes of research and accessible to the research needs of the unit. These should be distinct from the teaching laboratories. a) Attendant facilities appropriate for research are present. b) Facilities must be furnished with necessary amenities and constant supply of utilities (power, water, communications, etc.). c) Development and maintenance plan for research facilities must be current.	List of research support staff, their qualifications and current assignments. List of specialized facilities. Functional description of each indicator under this standard.
2.3 Publications, patents and other scientific activities	50%	Publications, patents and the involvement of personnel in scientific activities are emphasized because these are direct measures that the science you	

			are producing is recognized by your peers. a) Non ISI publications both local and international b) Number of non-ISI publications (local and foreign). Included chapters in books, c) Number of ISI publications (local and foreign). d) Number of faculty with non-ISI publications. Include chapters in books. e) Number of faculty with ISI publications. f) Number of patents registered by faculty members of the Center. g) Number of books published by faculty members of the Center. h) Number of presentations at local scientific meetings, symposia, etc. i) Number of presentations at international scientific meetings, symposia, etc. j) Number of scientific meetings organized by faculty and other research staff. k) Number of patents produced.	
3. Extension and Linkages	20%		COEs and CODs have a good background to undertake joint activities beyond their institutions in order to develop the quality of their programs. COEs and CODs must also be able to tap into the expertise and insights of private industries, government agencies and NGOs to enhance their program offerings.	
3.1 Extension	50%		Extension refers to assistance that the unit provides to other entities (i.e., outreach, capacity building, institutional mentoring, input to policies, involvement in national marine and maritime related issues).	<ul style="list-style-type: none"> Record of extension services provided in the last seven (7) years. Description of activities undertaken
3.2 Linkages	50%		Linkages refer to activities that seek to enhance the academic offerings or research activities of the unit benchmarked against international standards. a) Local cross pollination b) International collaboration	<ul style="list-style-type: none"> Record of existing local and international linkages. Description of linkages established.
4. Institutional Qualifications	5%		A good academic program stems from a clear and achievable institutional vision for excellence and quality. The institution's policies, strategies and principles coupled with excellence student support services and facilities must all be geared towards this vision.	



4.1 Mission/Vision	25%	<p>a) There is a defined institutional purpose. b) There are defined and attainable goals.</p>	Description of the institution. Copy of mission and vision statement with measurable metrics of outcomes.
4.2 Institutional policies, strategies and principles	35%	<p>a) Policies, strategies and principles are consistent with the mission/vision of the institution b) Policies, strategies and principles are written and clearly communicated to the constituent members of the academic community. c) Strategies for development are time bound.</p>	Functional description and examples of each standard in this element.
4.3 Support from higher administration	40%	<p>a) The institution has adequate financial resources to maintain and enhance its programs and services. The level of financial resources provides a reasonable expectation of financial viability and institutional improvement. b) Financial planning supports institutional goals and is linked to other institutional planning efforts. c) There are appropriate mechanisms in place to assess current policies and activities. d) Demonstrable/evident institutional support for faculty advancement.</p>	Functional description and examples of each of the indicators reflected in the annual budget of the higher admin.
			List of faculty development activities in the past seven (7) years including the budget.



STANDARDS FOR THE SELECTION OF COEs and CODs FOR SCIENCE AND MATHEMATICS

MATHEMATICS PROGRAM

Elements	%	Score	Standards and Indicators	Documentary Requirements
1. Instructional Quality	45%		COEs and CODs must provide excellent human resources and facilities to attain its academic objectives. The instruction offered by COEs and CODs are based on good program administration, a faculty roster that strikes a balance between higher academic studies and professional experience, a flexible and dynamic curriculum, and student facilities that are sufficient to meet the demands of the academic community it serves.	
1.1 Faculty	40%		The faculty is the primary operative resource in an academic institution. They shoulder the institution's responsibilities to teach and facilitate learning, generate new knowledge, and assist in providing service programs of the institution to the community. The faculty roster of the unit should be composed of professionals qualified in terms of education, experience and skills. Educational qualifications are consistent with the programs and expected learning outcome of students.	a) Catalog or summary list of faculty and the degrees they hold. b) Individual Faculty Information Sheet (FIS)
1.1.1 Qualifications			Faculty qualification shall be indicated by these standards: Faculty must be at least master's level for undergraduate programs and MS or PhD for graduate programs. Specializations of the faculty must be in the field or in a closely allied field. Specifically, the following standards shall apply: <ul style="list-style-type: none"> For COD – the HEI must have at least two (2) full-time (2) PhDs and three full-time (3) MS Mathematics or MS Applied Mathematics degree holders in their faculty For COE – the HEI must have at least five (5) full-time PhD Mathematics degree holders in their faculty There are evidences of self-improvement among the faculty such as participation in postgraduate programs, trainings and skills development. Undertaking postgraduate trainings is a manifestation	



				of self-motivation on the part of the faculty with the interest to improve its prime resource. Core faculty is adequate in number.	
1.1.2 Quantity				<ul style="list-style-type: none"> • Full-time faculty constitutes 70% of total faculty complement of the unit. Faculty to student ration is 1:30 or better for both undergraduate lecture and laboratory classes and 1:15 or better graduate classes. • There is ample distribution of faculty experience in the unit. Experience is measured either by the distribution of the levels or ranks of the faculty in the unit or by the average number of teaching years of the faculty. 	List of faculty output to be appended in the FIS
1.1.3 Productivity				<p>This is a showcase of the faculty's outputs and other achievements, except publications.</p> <ul style="list-style-type: none"> • Participation in scientific meetings • Awards • Faculty participate in institutional governance activities • Faculty are active leaders or members of scientific organizations 	
1.1.4 Hiring and Promotion				<p>There is a written policy on faculty hiring and promotion. A faculty manual or similar document should define the criteria, qualifications, procedures adopted by the unit.</p> <ul style="list-style-type: none"> • For COD – the HEI must have an active MS Mathematics or MS Applied Mathematics program recognized by CHED • For COE – the HEI must have an active PhD Mathematics program recognized by CHED 	Copy of faculty manual or similar document detailing this requirement.
1.2 Programs		10%		<p>The curriculum must be characterized by the following:</p> <ol style="list-style-type: none"> Curriculum is a coherent program of study. Curriculum has sufficient content and depth to characterize the different levels of study (BS, MS, PhD), as appropriate. Graduate courses are focused on and structured for specialized study and independent research. <p>Generally, this will refer to the Director or Chair of the unit.</p>	Sample curriculum for every program offered by the unit.
1.3 Curriculum		10%		<p>Generally, this will refer to the Director or Chair of the unit.</p> <ol style="list-style-type: none"> Chair/Director is suitably qualified. 	
1.4 Administration		5%			



1.5 Physical Plant	20%		<p>b) Leadership must be strongly evident particularly in terms of</p> <ul style="list-style-type: none"> • Efficient operation. • Presence of a clear direction and time bound goals. • Roles of administration, faculty and staff are clearly defined. • Presence of a system for self-assessment. <p>Only facilities and equipment that are under the direct responsibility of the unit shall be included for this element.</p>	
1.5.1 Laboratories , Facilities and Equipment			<p>a) Physical resources are planned and developed according to target goals.</p> <p>b) Laboratories and facilities are adequate for the programs offered.</p> <p>c) Laboratories and facilities are suitable and have amenities appropriate and necessary to facilitate student learning.</p> <p>d) Equipment is adequate and appropriate for the courses listed in the curriculum.</p> <p>e) There is a system to select, maintain, and replace equipment.</p>	<p>List of specialized laboratories, facilities and equipment used for the programs, acquisition cost for each major equipment should be indicated.</p> <p>Description of development plans for facilities.</p> <p>Description of plans for acquisition and maintenance of equipment.</p>
1.5.2 Library			<p>The library is the primary learning resource unit in the institution. It is the main repository of learning materials available to constituent members of the community. The library holdings should not simply be a collection of materials but a collection that is supportive of the needs and requirements of the degrees and programs offered in the institution.</p> <p>a) The library has adequate and suitably qualified staff. Chief librarian must have a master's degree in an appropriate professional training and registered with the PRC. There should be at least one (1) professional librarian for every 1000 students.</p> <p>b) Library holdings are sufficient in quality, depth, diversity and currentness to support the courses, programs and degrees. Fifty percent (50%) of library holdings should be distinct</p>	<p>List of library staff and the degrees they hold.</p> <p>List of library holdings for the degree programs applied for.</p>



			<p>titles. Basic collection should include: general References, Cultural, Filipiniana, Humanities, Social Science and Science and Tech.</p> <p>c) Library resources are accessible. Office hours should be reasonable to accommodate all users, including graduate students with night classes. Space should accommodate at least five percent (5%) of total enrollment.</p> <p>d) There is sufficient and consistent budgetary support for the effective maintenance, security, and improvement of library resources. Library fees should be used for library operations and development.</p> <p>e) Faculty, students and other members of academic community are involved in the planning and improvement of library holdings and other learning resources. Mechanisms to facilitate the development of the library should be in place.</p> <p>f) Current content subscriptions.</p>	Functional description of the library operations.
1.5.3 Information Capability			<p>Information technology provides wide access to information that may be available to faculty, students and administrators.</p> <p>a) There is a reliable and fast internet and intranet access.</p> <p>b) Information technology facilities are accessible to all users.</p> <p>c) Use and limits of information technology resources are properly communicated.</p> <p>d) Qualified and sufficient personnel manage information technology facilities.</p>	List of journal of current content subscriptions. List of information technology resources, their location and their use.
1.6 Students	15%			
1.6.1 Enrollment and Graduate Profile			<p>Enrollment and graduation profile is indicative of the state of the program. It gives an idea on the progression of students across curricular levels. Attrition rate of students should be at a minimum level.</p> <p>Suitable students are recruited and admitted to the programs. The institution provides prospective and currently enrolled students sufficient information about its programs, admissions policies and graduation requirements, social and academic policies, refund policies, student conduct standards, and complaint and grievance procedures.</p>	Record of average yearly enrollment and graduation profile for the past seven (7) years. Functional description of this element.
1.6.2 Selection and retention of students				
1.6.3 Performance in Licensure			This is part of student outcomes assessment. It demonstrates	If applicable, a record of PRC



Examinations			student knowledge, skills, and competencies consistent with institutional goals and the learning goals of the respective programs from which students have graduated.	results for the last seven (7) years.
1.6.4 Student Support System			Student learning is enhanced by the quality of campus life. Student support should aim to address this and deal with the spectrum of student needs, abilities and culture. Support services may include but are not limited to admissions, financial aid, registration, orientation, advising, counseling, tutoring, discipline, health, housing, placement, student organization and activities, cultural programming, security, and athletic activities.	List of student support services.
1.6.5 Graduate Tracer Study / Employment of graduates			The career success of graduates is an indication of confidence from employers and clients. It supports the belief that the products (graduates) of the institution are significant contributors and achievers in their chosen professions. At a minimum, the institution should have at least information where its graduates go. It is ideal that institutions keep track of their graduates' careers and use this information to enhance its programs.	Employment record of graduates or similar document, which provides such information.
2. Research and Publication	30%		A COE or COD must exhibit a strong commitment to undertake research activities and an environment that encourages the conduct of such activities. Faculty and students must be given the opportunity to undertake research and must be able to access documents, references and equipment necessary for undertaking research work. There should be a clear plan for research projects consistent with the mission of the institution.	
2.1 Personnel	25%		Research personnel shall be defined herein as faculty or other full-time personnel doing research. a) Research is undertaken by professional and qualified staff b) There is sufficient number of qualified support staff to aid in the conduct of research activities.	List of research staff including qualifications and research undertakings, both accomplished and ongoing, for the past seven (7) years. List of research support staff, their qualifications and current assignments.
2.2 Facilities and Equipment	15%		These are the institutional resources (facilities and equipment) utilized for purposes of research and accessible to the unit.	List of specialized facilities, if any. Functional description of



				each indicator under this standard.
2.3 Publications and other scientific activities	60%	<p>a) Attendant facilities appropriate for research are present.</p> <p>b) Facilities must be furnished with necessary amenities and constant supply of utilities (power, water, communications, etc.).</p> <p>c) Development plan for research facilities must be available.</p> <p>Publications and the involvement of personnel in scientific activities are emphasized because these are direct measures of quality and recognized productivity.</p> <p>a) Non ISI publications both local and international</p> <p>b) Number of non-ISI publications (local and foreign). Included chapters in books,</p> <p>c) Number of ISI publications (local and foreign).</p> <p>d) Number of faculty with non-ISI publications. Include chapters in books.</p> <p>e) Number of faculty with ISI publications.</p> <p>f) Number of patents registered by faculty members of the Center.</p> <p>g) Number of books published by faculty members of the Center.</p> <p>h) Number of presentations at local scientific meetings, symposia, etc.</p> <p>i) Number of presentations at international scientific meetings, symposia, etc.</p> <p>j) Number of scientific meetings organized by faculty and other research staff.</p> <p>COEs and CODs have a good background to undertake joint activities beyond their institutions in order to develop the quality of their programs. COEs and CODs must also be able to tap into the expertise and insights of private industries, government agencies and NGOs to enhance their program offerings.</p> <p>Extension refers to assistance that the unit provides to other entities (i.e., outreach)</p>		
3. Extension and Linkages	20%			
3.1 Extension	50%			<ul style="list-style-type: none"> • Record of extension services provided in the last seven (7) years. • Description of



					activities undertaken.
3.2 Linkages	50%			Linkages refer to activities that seek to enhance the academic offerings or research activities of the unit. c) Local d) International	<ul style="list-style-type: none"> Record of existing local and international linkages. Description of linkages established.
4. Institutional Qualifications	5%			A good academic program stems from a clear and achievable institutional vision for excellence and quality. The institution's policies, strategies and principles coupled with excellence student support services and facilities must all be geared towards this vision.	
4.1 Mission/Vision				a) There is a defined institutional purpose. b) There are defined and attainable goals.	Description of the institution. Copy of mission and vision statement.
4.2 Institutional policies, strategies and principles				a) Policies, strategies and principles are congruent with the mission/vision of the institution b) Policies, strategies and principles are written and clearly communicated to the constituent members of the academic community. c) Strategies for development are time bound.	Functional description and examples of each standard in this element.
4.3 Support from higher administration				a) The institution has adequate financial resources to maintain and enhance its programs and services. The level of financial resources provides a reasonable expectation of financial viability and institutional improvement. b) Financial planning supports institutional goals and is linked to other institutional planning efforts. c) There are appropriate mechanisms in place to assess current policies and activities. d) Demonstrable/evident institutional support for faculty advancement.	Functional description and examples of each of the indicators. List of faculty development activities in the past seven (7) years including the budget.



STANDARDS FOR THE SELECTION OF COEs and CODs FOR SCIENCE AND MATHEMATICS

PHYSICS PROGRAM

Elements	%	Score	Standards and Indicators	Specific Indicators
<p>1. Instructional Quality</p>	<p>45%</p>		<p>COEs and CODs must provide excellent human resources and facilities to attain its academic objectives. The instruction offered by COEs and CODs are based on good program administration, a faculty roster that strikes a balance between higher academic studies and professional experience, a flexible and dynamic curriculum, and student facilities that are sufficient to meet the demands of the academic community it serves.</p>	
<p>1.1 Faculty</p>	<p>40%</p>		<p>The faculty is the primary operative resource in an academic institution. They shoulder the institution's responsibilities to teach and facilitate learning, generate new knowledge, and assist in providing service programs of the institution to the community. The faculty roster of the unit should be composed of professionals qualified in terms of education, experience and skills.</p>	
<p>1.1.1 Qualifications</p>			<p>Educational qualifications are consistent with the programs and expected learning outcome of students.</p> <p>Faculty qualification shall be indicated by these standards:</p>	
			<p>Faculty must be at least master's level for undergraduate programs and MS or PhD for graduate programs. Specializations of the faculty must be in the field or in a closely allied field. Specifically, the following standards shall apply:</p> <ul style="list-style-type: none"> • COEs must have at least six (6) full-time PhDs. (This is based on the number of core courses in the programs.) • CODs must have on full-time appointment at least two (2) PhDs and three (3) master's degree holders. <p>There are evidences of self-improvement among the faculty such as participation in postgraduate programs, trainings and skills development.</p>	<p>COE must have a PhD program in Physics COD must have a good BS Physics program with good linkages, not necessarily based on MOA but with linkage results e.g. collaborative publications, exchange students, training, etc.</p> <p>Applies to COD only. For COE, use another standards/indicators</p>



1.1.2 Quantity	<p>Undertaking postgraduate trainings is a manifestation of self-motivation on the part of the faculty with the interest to improve its prime resource.</p> <p>Core faculty is adequate in number (refer to the faculty criteria for COE and COD [1.1.1]).</p> <ul style="list-style-type: none"> • Full-time faculty constitutes of total faculty complement of the unit. • Faculty to student ratio is 1:30 or better for both undergraduate lecture and laboratory classes and 1:15 or better graduate classes. • There is ample distribution of faculty experience in the unit. • Experience is measured either by the distribution of the levels or ranks of the faculty in the unit or by the average number of teaching years of the faculty. 		The graduate core course should be handled by PhD degree. The advance undergraduate core courses should be handled by MS or PhD degree holders.	
1.1.3 Productivity			<p>This is a showcase of the faculty's outputs and other achievements, except publications.</p> <ul style="list-style-type: none"> • Participation in scientific meetings • Awards • Faculty participate in institutional governance activities • Faculty are active leaders or members of scientific organizations <p>There is a written policy on faculty hiring and promotion. A faculty manual or similar document should define the criteria, qualifications, procedures adopted by the unit.</p> <p>And should be consistent in attracting and retaining faculty with PhD degrees</p>	List of faculty output to be appended in the FIS
1.1.4 Hiring and Promotion			<p>Copy of faculty manual or similar document detailing this requirement.</p>	Copy of faculty manual or similar document detailing this requirement.
1.2 Curriculum	10%		<p>Applicable to both COEs and CODs</p> <p>Sample curriculum for every program offered by the unit.</p> <p>The curriculum must be characterized by the following:</p> <ol style="list-style-type: none"> Curriculum is a coherent program of study. Curriculum has sufficient content and depth to characterize the different levels of study (BS, MS, PhD), as appropriate. Graduate courses are focused on and structured for specialized study and independent research. 	Applicable to both COEs and CODs
1.3 Administration	10%		<p>Generally, this will refer to the Director or Chair of the unit.</p> <ol style="list-style-type: none"> Chair/Director is suitably qualified. Leadership must be strongly evident particularly in terms of <ul style="list-style-type: none"> • Efficient operation. • Presence of a clear direction and time bound goals. • Roles of administration, faculty and staff are clearly defined. • Presence of a system for self-assessment. 	Availability and accessibility
1.4 Facilities	25%		Only facilities and equipment that are under the direct responsibility of the	Availability and accessibility



<p>1.4.1 Laboratories, Facilities and Equipment</p>		<p>unit shall be included for this element.</p> <p>a) Physical resources are planned and developed according to target goals.</p> <p>b) Laboratories and facilities are adequate for the programs offered.</p> <p>c) Laboratories and facilities are suitable and have amenities appropriate and necessary to facilitate student learning.</p> <p>d) Equipment is adequate and appropriate for the courses listed in the curriculum.</p> <p>e) There is a system to select, maintain, and replace equipment.</p>	<p>of in-house facilities</p> <p>List of specialized laboratories, facilities and equipment used for the programs, acquisition cost for each major equipment should be indicated.</p>
<p>1.4.2 Library</p>		<p>The library is the primary learning resource unit in the institution. It is the main repository of learning materials available to constituent members of the community. The library holdings should not simply be a collection of materials but a collection that is supportive of the needs and requirements of the degrees and programs offered in the institution.</p> <p>a) The library has adequate and suitably qualified staff. Chief librarian must have a master's degree in an appropriate professional training and registered with the PRC. There should be at least one (1) professional librarian for every 1000 students.</p> <p>b) Library holdings are sufficient in quality, depth, diversity and currentness to support the courses, programs and degrees. Fifty percent (50%) of library holdings should be distinct titles. Basic collection should include: general References, Cultural, Filipiniana, Humanities, Social Science and Science and Tech.</p> <p>c) Library resources are accessible. Office hours should be reasonable to accommodate all users, including graduate students with night classes. Space should accommodate at least five percent (5%) of total enrollment.</p> <p>d) There is sufficient and consistent budgetary support for the effective maintenance, security, and improvement of library resources. Library fees should be used for library operations and development.</p>	<p>Description of development plans for facilities.</p> <p>Description of plans for acquisition and maintenance of equipment.</p> <p>List of library staff and the degrees they hold.</p> <p>List of library holdings for the degree programs applied for.</p> <p>Functional description of the library operations.</p>





<p>1.4.3 Information Technology capability</p>		<p>e) Faculty, students and other members of academic community are involved in the planning and improvement of library holdings and other learning resources. Mechanisms to facilitate the development of the library should be in place. f) Current content subscriptions.</p> <p>Information technology provides wide access to information that may be available to faculty, students and administrators.</p> <p>a) There is a reliable and fast internet and intranet access. b) Information technology facilities are accessible to all users. c) Use and limits of information technology resources are properly communicated. d) Qualified and sufficient personnel manage information technology facilities.</p>	<p>List of journal of current content subscriptions.</p> <p>List of information technology resources, their location and their use.</p>
<p>1.5 Students and Graduate Profile</p> <p>1.5.1 Enrollment and Graduate Profile</p> <p>15%</p> <p>1.5.2 Selection and retention of students</p> <p>1.5.3 Performance in Licensure Examinations (delete) No Licensure examination required in Physics</p> <p>1.5.4 Student Support System</p>		<p>Enrollment and graduation profile is indicative of the state of the program. It gives An idea on the progression of students across curricular levels. Attrition rate of students should be at a minimum level.</p> <p>Suitable students are recruited and admitted to the programs. The institution provides prospective and currently enrolled students sufficient information about its programs, admissions policies ad graduation requirements, social and academic policies, refund policies, student conduct standards, and complaint and grievance procedures.</p> <p>This is part of student outcomes assessment. It demonstrates student knowledge, skills, and competencies consistent with institutional goals and the learning goals of the respective programs from which students have graduated.</p> <p>Student learning is enhanced by the quality of campus life. Student support should aim to address this and deal with the spectrum of student needs, abilities and culture. Support services may include but are not limited to admissions, financial aid, registration, orientation, advising, counseling, tutoring, discipline, health, housing, placement, student organization and activities, cultural programming, security, and athletic activities.</p>	<p>Record of average yearly enrollment and graduation profile for the past five (5) years.</p> <p>Functional description of this element.</p> <p>List of student support services.</p>



1.5.5 Graduate Tracer Study / Employment of graduates		The career success of graduates is an indication of confidence from employers and clients. It supports the belief that the products (graduates) of the institution are significant contributors and achievers in their chosen professions. At a minimum, the institution should have at least information where its graduates go. It is ideal that institutions keep track of their graduates' careers and use this information to enhance its programs.	Employment record of graduates or similar document, which provides such information.
<p>2. Research and Publication</p> <p>30%</p>		<p>A COE or COD must exhibit a strong commitment to undertake research activities and an environment that encourages the conduct of such activities. Faculty and students must be given the opportunity to undertake research and must be able to access documents, references and equipment necessary for undertaking research work. There should be a clear plan for research projects consistent with the mission of the institution.</p> <p>Research personnel shall be defined herein as faculty or other full-time personnel doing research.</p> <p>a) Research is undertaken by faculty.</p>	<p>A COE must show commitment to research. Commitment means faculty should be given research load.</p> <p>Provide teaching load of the faculty for the past five (5) years.</p>
<p>2.1 Personnel</p> <p>25%</p>		<p>b) There is sufficient number of qualified support staff to aid in the conduct of research activities.</p>	<p>List of research staff including qualifications and research undertakings, both accomplished and ongoing, for the past five (5) years.</p>
<p>2.2 Facilities and equipment</p> <p>25%</p>		<p>These are the institutional resources (facilities and equipment) utilized for purposes of research and accessible to the unit.</p> <p>a) Attendant facilities appropriate for research are present. b) Facilities must be furnished with necessary amenities and constant supply of utilities (power, water, communications, etc.). c) Development plan for research facilities must be available.</p>	<p>List of research support staff, their qualifications and current assignments.</p> <p>List of specialized facilities, if any. Functional description of each indicator under this standard.</p>
<p>2.3 Publications and other scientific activities</p> <p>50%</p>		<p>Publications and the involvement of personnel in scientific activities are emphasized because these are direct measures of quality and recognized productivity.</p> <p>a) Non ISI publications both local and international</p>	

				<p>b) Number of non-ISI publications (local and foreign). Included chapters in books.</p> <p>c) Number of ISI publications (local and foreign).</p> <p>d) Number of faculty with non-ISI publications. Include chapters in books.</p> <p>e) Number of faculty with ISI publications.</p> <p>f) Number of patents registered by faculty members of the Center.</p> <p>g) Number of books published by faculty members of the Center.</p> <p>h) Number of presentations at local scientific meetings, symposia, etc.</p> <p>i) Number of presentations at international scientific meetings, symposia, etc.</p> <p>j) Number of scientific meetings organized by faculty and other research staff.</p>	
3. Extension and Linkages	20%		<p>COEs and CODs have a good background to undertake joint activities beyond their institutions in order to develop the quality of their programs. COEs and CODs must also be able to tap into the expertise and insights of private industries, government agencies and NGOs to enhance their program offerings.</p> <p>Extension refers to assistance that the unit provides to other entities.</p> <p>Linkages refer to activities that seek to enhance the academic offerings or research activities of the unit.</p> <p>a) Local</p> <p>b) International</p>	<p>Linkages relevant to the program.</p> <p>Proof of linkages are MOA, joint collaborative work, public lectures, certificates, etc.</p>	
4. Institutional Qualifications	5%		<p>A good academic program stems from a clear and achievable institutional vision for excellence and quality. The institution's policies, strategies and principles coupled with excellence student support services and facilities must all be geared towards this vision.</p>	<p>Description of the institution.</p> <p>Copy of mission and vision statement.</p>	
4.1 Mission/Vision	25%		<p>a) There is a defined institutional purpose.</p> <p>b) There are defined and attainable goals.</p>		
4.2 Institutional policies, strategies and principles	35%		<p>a) Policies, strategies and principles are congruent with the mission/vision of the institution</p> <p>b) Policies, strategies and principles are written and clearly</p>	<p>Functional description and examples of each standard in this element.</p>	



4.3 Support from higher administration	40%		<p>communicated to the constituent members of the academic community.</p> <p>c) Strategies for development are time bound.</p> <p>a) The institution has adequate financial resources to maintain and enhance its programs and services. The level of financial resources provides a reasonable expectation of financial viability and institutional improvement.</p> <p>b) Financial planning supports institutional goals and is linked to other institutional planning efforts.</p> <p>c) There are appropriate mechanisms in place to assess current policies and activities.</p> <p>d) Demonstrable/evident institutional support for faculty advancement.</p>	<p>Functional description and examples of each of the indicators.</p> <p>List of faculty development activities in the past five (5) years including the budget.</p>
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Note:
 Reckoning Period of Documentary Profiles (for the last 5 years)
 January 2010 to December 2014



STANDARDS FOR THE SELECTION OF COEs and CODs FOR SCIENCE AND MATHEMATICS

STATISTICS

Elements	%	Score	Standards and Indicators	Documentary Requirements
1. Instructional Quality	45%		COEs and CODs must provide excellent human resources and facilities to attain its academic objectives. The instruction offered by COEs and CODs are based on good program administration, a faculty roster that strikes a balance between higher academic studies and professional experience, a flexible and dynamic curriculum, and student facilities that are sufficient to meet the demands of the academic community it serves.	
1.1 Faculty	40%		The faculty is the primary operative resource in an academic institution. They shoulder the institution's responsibilities to teach and facilitate learning, generate new knowledge, and assist in providing service programs of the institution to the community. The faculty roster of the unit should be composed of professionals qualified in terms of education, experience and skills. Educational qualifications are consistent with the programs and expected learning outcome of students. Faculty qualification shall be indicated by these standards: Faculty must be at least master's level for undergraduate programs and MS or PhD for graduate programs. Specializations of the faculty must be in the field or in a closely allied field. Specifically, the following standards shall apply: <ul style="list-style-type: none"> • COEs must have at least five (5) full-time PhDs. (This is based on the number of core courses in the programs.) • CODs must have on full-time appointment at least two (2) PhDs and three (3) master's degree holders. There are evidences of self-improvement among the faculty such as participation in postgraduate programs, trainings and skills development. Undertaking postgraduate trainings is a manifestation of self-motivation on the part of the faculty with the interest to improve its prime resource. Core faculty is adequate in number. <ul style="list-style-type: none"> • Full-time faculty constitutes 70% of total faculty complement of the unit. Faculty to student ration is 1:30 or better for both 	a) Catalog or summary list of faculty and the degrees they hold. b) Individual Faculty Information Sheet (FIS).
1.1.2 Quantity				Qualified research advisers vs. number of actual advisees



				<ul style="list-style-type: none"> undergraduate lecture and laboratory classes and 1:15 or better graduate classes. There is ample distribution of faculty experience in the unit. Experience is measured either by the distribution of the levels or ranks of the faculty in the unit or by the average number of teaching years of the faculty. Adequate faculty members to advise research students. 	
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1.1.3 Productivity			<p>This is a showcase of the faculty's outputs and other achievements, except publications.</p> <ul style="list-style-type: none"> Research students who actually graduated Development of teaching materials Participation in scientific meetings Awards Faculty participate in institutional governance activities Faculty are active leaders or members of scientific organizations <p>There is a written policy on faculty hiring and promotion. A faculty manual or similar document should define the criteria, qualifications, procedures adopted by the unit.</p>	List of faculty output to be appended in the FIS. Number of graduated advisees.
1.1.4 Hiring and Promotion			<p>The curriculum must be characterized by the following:</p> <ol style="list-style-type: none"> Curriculum is a coherent program of study. Curriculum has sufficient content and depth to characterize the different levels of study (BS, MS, PhD), as appropriate. Graduate courses are focused on and structured for specialized study and independent research. 	Copy of faculty manual or similar document detailing this requirement.
1.2 Curriculum	10%		<p>Generally, this will refer to the Director or Chair of the unit.</p> <ol style="list-style-type: none"> Chair/Director/Program Director is suitably qualified (should have PhD if they offer PhD program and should have MS if they offer MS or BS program). Leadership must be strongly evident particularly in terms of <ul style="list-style-type: none"> Efficient operation. Presence of a clear direction and time bound goals. Roles of administration, faculty and staff are clearly defined. Presence of a system for self-assessment. 	Sample curriculum for every program offered by the unit. Framework
1.3 Administration	10%		<p>Only facilities and equipment that are under the direct responsibility of the unit shall be included for this element.</p> <ol style="list-style-type: none"> Physical resources are planned and developed according to target goals. 	List of specialized laboratories, facilities and
1.4 Facilities	25%			
1.4.1 Laboratories, Facilities and Equipment				



<p>1.4.2 Library</p>		<p>b) Laboratories and facilities are adequate for the programs offered (one [1] student is to one [1] computer in laboratory classes; access to relevant software).</p> <p>c) Laboratories and facilities are suitable and have amenities appropriate and necessary to facilitate student learning.</p> <p>d) Equipment is adequate and appropriate for the courses listed in the curriculum.</p> <p>e) There is a system to select, maintain, and replace equipment.</p> <p>The library is the primary learning resource unit in the institution. It is the main repository of learning materials available to constituent members of the community. The library holdings should not simply be a collection of materials but a collection that is supportive of the needs and requirements of the degrees and programs offered in the institution.</p> <p>a) The library has adequate and suitably qualified staff. Chief librarian must have a master's degree in an appropriate professional training and registered with the PRC. There should be at least one (1) professional librarian for every 1000 students.</p> <p>b) Library holdings are sufficient in quality, depth, diversity and currentness to support the courses, programs and degrees. Fifty percent (50%) of library holdings should be distinct titles. Basic collection should include: general References, Cultural, Filipiniana, Humanities, Social Science and Science and Tech.</p> <p>c) Library resources are accessible. Office hours should be reasonable to accommodate all users, including graduate students with night classes. Space should accommodate at least five percent (5%) of total enrollment.</p> <p>d) There is sufficient and consistent budgetary support for the effective maintenance, security, and improvement of library resources. Library fees should be used for library operations and development.</p> <p>e) Faculty, students and other members of academic community are</p>	<p>equipment used for the programs, acquisition cost for each major equipment should be indicated.</p> <p>Description of development plans for facilities.</p> <p>Description of plans for acquisition and maintenance of equipment.</p> <p>List of library staff and the degrees they hold.</p> <p>List of library holdings for the degree programs applied for.</p> <p>Functional description of the library operations.</p>
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<p>1.4.3 Information Technology capability</p>		<p>involved in the planning and improvement of library holdings and other learning resources. Mechanisms to facilitate the development of the library should be in place.</p> <p>f) Current content subscriptions.</p> <p>Information technology provides wide access to information that may be available to faculty, students and administrators.</p> <p>a) There is a reliable and fast internet and intranet access.</p> <p>b) Information technology facilities are accessible to all users.</p> <p>c) Use and limits of information technology resources are properly communicated.</p> <p>d) Qualified and sufficient personnel manage information technology facilities.</p>	<p>List of journal of current content subscriptions.</p> <p>List of information technology resources, their location and their use.</p>
<p>1.5 Students 1.5.1 Enrollment and Graduate Profile</p>	<p>15%</p>	<p>Enrollment and graduation profile is indicative of the state of the program. It gives an idea on the progression of students across curricular levels. Attrition rate of students should be at a minimum level.</p>	<p>Record of average yearly enrollment an graduation profile for the past seven (7) years.</p>
<p>1.5.2 Selection and retention of students</p>		<p>Suitable students are recruited and admitted to the programs. The institution provides prospective and currently enrolled students sufficient information about its programs, admissions policies ad graduation requirements, social and academic policies, refund policies, student conduct standards, and complaint and grievance procedures.</p>	<p>Functional description of this element.</p>
<p>1.5.3 Performance in Licensure Examinations (not applicable)</p>		<p>This is part of student outcomes assessment. It demonstrates student knowledge, skills, and competencies consistent with institutional goals and the learning goals of the respective programs from which students have graduated.</p>	<p>If applicable, a record of PRC results for the last seven (7) years.</p>
<p>1.5.4 Student Support System</p>		<p>Student learning is enhanced by the quality of campus life. Student support should aim to address this and deal with the spectrum of student needs, abilities and culture. Support services may include but are not limited to admissions, financial aid, registration, orientation, advising, counseling, tutoring, discipline, health, housing, placement, student organization and activities, cultural programming, security, and athletic activities.</p>	<p>List of student support services.</p>
<p>1.5.5 Graduate Tracer Study / Employment of graduates</p>		<p>The career success of graduates is an indication of confidence from employers and clients. It supports the belief that the products (graduates) of</p>	<p>Employment record of graduates or similar</p>



			the institution ate significant contributors and achievers in their chosen professions. At a minimum, the institution should have at least information where its graduates go. It is ideal that institutions keep track of their graduates' careers and use this information to enhance its programs.	document, which provides such information.
2. Research and Publication	30%		A COE or COD must exhibit a strong commitment to undertake research activities and an environment that encourages the conduct of such activities. Faculty and students must be given the opportunity to undertake research and must be able to access documents, references and equipment necessary for undertaking research work. There should be a clear plan for research projects consistent with the mission of the institution.	
2.1 Personnel	25%		Research personnel shall be defined herein as faculty or other full-time personnel doing research. a) Research is undertaken by professional and qualified staff	List of research staff including qualifications and research undertakings, both accomplished and ongoing, for the past seven (7) years.
2.2 Facilities and equipment	25%		b) There is sufficient number of qualified support staff to aid in the conduct of research activities. These are the institutional resources (facilities and equipment) utilized for purposes of research and accessible to the unit. a) Presence of study groups/research laboratories. b) Attendant facilities appropriate for research are present. c) Facilities must be furnished with necessary amenities and constant supply of utilities (power, water, communications, etc.). d) Development plan for research facilities must be available. e) Incentives/Award system for research productivity of faculty and staff.	List of research support staff, their qualifications and current assignments. List of specialized facilities, if any. Functional description of each indicator under this standard.
2.3 Publications and other scientific activities	50%		Publications and the involvement of personnel in scientific activities are emphasized because these are direct measures of quality and recognized productivity. a) Non ISI publications both local and international b) Number of non-ISI publications (local and foreign). Included	



				<p>chapters in books,</p> <p>c) Number of ISI publications (local and foreign).</p> <p>d) Number of faculty with non-ISI publications. Include chapters in books.</p> <p>e) Number of faculty with ISI publications.</p> <p>f) Number of patents registered by faculty members of the Center.</p> <p>g) Number of books published by faculty members of the Center.</p> <p>h) Number of presentations at local scientific meetings, symposia, etc.</p> <p>i) Number of presentations at international scientific meetings, symposia, etc.</p> <p>j) Number of scientific meetings organized by faculty and other research staff.</p>	
3. Extension and Linkages	20%			<p>COEs and CODs have a good background to undertake joint activities beyond their institutions in order to develop the quality of their programs. COEs and CODs must also be able to tap into the expertise and insights of private industries, government agencies and NGOs to enhance their program offerings.</p> <p>Extension refers to assistance that the unit provides to other entities (e.g., outreach)</p>	
3.1 Extension				<ul style="list-style-type: none"> • Record of extension services provided in the last 7 years. • Description of activities undertaken. 	
3.2 Linkages				<p>Linkages refer to activities that seek to enhance the academic offerings or research activities of the unit.</p> <p>a. Local</p> <p>b. International</p>	<ul style="list-style-type: none"> • Record of existing local and international linkages. • Description of linkages established.
4. Institutional Qualifications	5%			<p>A good academic program stems from a clear and achievable institutional vision for excellence and quality. The institution's policies, strategies and principles coupled with excellence student support services and facilities must all be geared towards this vision.</p>	
4.1 Mission/Vision	25%			<p>a) There is a defined institutional purpose.</p> <p>b) There are defined and attainable goals.</p>	<p>Description of the institution.</p> <p>Copy of mission and vision statement.</p>
4.2 Institutional policies.	35%			<p>a) Policies, strategies and principles are congruent with the</p>	<p>Functional description and</p>



<p>strategies and principles</p> <p>4.3 Support from higher administration</p>	<p>40%</p>	<p>mission/vision of the institution</p> <ul style="list-style-type: none"> b) Policies, strategies and principles are written and clearly communicated to the constituent members of the academic community. c) Strategies for development are time bound. a) The institution has adequate financial resources to maintain and enhance its programs and services. The level of financial resources provides a reasonable expectation of financial viability and institutional improvement. b) Financial planning supports institutional goals and is linked to other institutional planning efforts. c) There are appropriate mechanisms in place to assess current policies and activities. d) Demonstrable/evident institutional support for faculty advancement. 	<p>examples of each standard in this element.</p> <p>Functional description and examples of each of the indicators.</p> <p>List of faculty development activities in the past seven (7) years including the budget.</p>
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