



LEYTE STATE UNIVERSITY
6521-A Visca, Baybay, Leyte, Philippines

Office of the Secretary of the University
and of the Board of Regents

EXCERPT FROM THE APPROVED MINUTES OF THE
22nd LSU Board of Regents Meeting
09 December 2005 * Midtown Hotel, Cebu City

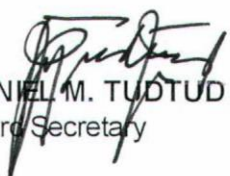
Proposal to Offer Graduate Courses for the
Master of Biology Program under the LSU-LNU Partnership

BOR RESOLUTION NO. 94, s. 2005

Approving the proposal to offer graduate courses for the Master of
Biology Program under the LSU-LNU partnership, as presented.

BOARD ACTION: **APPROVED**
Date : 09 December 2005
ATTACHMENT: !

Certified True and Correct:


DANIEL M. TUOTUD JR.
Board Secretary

cc: OVPAA *01/14*
Dean, CAS *01/14*
DBS *01/16/06*
University Registrar *01/27/06*
Graduate School
ODCI *01/27/06*

**PROPOSAL TO OFFER GRADUATE COURSES FOR THE MASTER IN
BIOLOGY PROGRAM UNDER THE LNU-LSU PARTNERSHIP**

I. RATIONALE:

To upgrade the academic qualifications of tertiary faculty of state colleges and universities, CHED launched a nationwide Faculty Development Program where competitive graduate scholarships are awarded by CHED to deserving faculty. A non-thesis Master's degree program in various disciplines such as Biology, English, Chemistry, Mathematics, etc. are being offered in institutions identified by CHED as having the capability in terms of faculty and facilities. These delivering higher education institutions (HEIs) are distributed in the various regions of the country. In Region VIII, the Leyte Normal University (LNU) and Leyte State University (LSU), Visca, Baybay, Leyte are the delivering HEI's for the joint offering of a Master in Biology program, with LNU spearheading its implementation. Education courses and some major courses without laboratory will be offered in LNU. Since LSU has the needed faculty and facilities, some major courses especially those having laboratory will be offered in LSU. Courses under the program are offered on weekends.

A Memorandum of Agreement has been signed between LNU and LSU regarding the implementation of the program.

II. ADMISSION AND COURSE REQUIREMENTS

A. Admission Requirements

Graduates of BS Biology, BS Education major in Biology and related fields are qualified to enroll in the program.

B. Course Requirements

A graduate student shall take a minimum of 42 units of coursework broken down as follows:

Courses	Number of Courses	Number of Units
Major	11	33
Minor Cognate	3	9
Total	14	42

III. PROPOSED GRADUATE COURSES

MAJOR (Select 11):

Course No.	Course Title	Institution Responsible
<i>BIOL238 (or MB504)</i>	<i>Molecular Biology</i>	<i>LSU</i>
MB505	Advanced Genetics	LNU
MB506	Advanced Ecology	LNU
BIOL291 (or MB507)	Special Topics in Biology	LNU
<i>BIOL227 (or MB508)</i>	<i>Developmental Biology</i>	<i>LSU</i>
<i>BIOL293 (or MB509)</i>	<i>Microbiological Techniques</i>	<i>LSU</i>
<i>BIOL292 (or MB510)</i>	<i>Microtechniques in Biology</i>	<i>LSU</i>
<i>BIOL205 (or TREC205 or MB511)</i>	<i>Biological Diversity of Tropical Ecosystems</i>	<i>LSU</i>
<i>BOTN241 (or MB512)</i>	<i>Methods in Plant Systematics</i>	<i>LSU</i>
BOTN213 (or MB513)	Plant Physiology	LNU
MB514	Animal Physiology	LNU
<i>BOTN215 (or MB515)</i>	<i>Advances in Plant Growth and Development</i>	<i>LSU</i>

1 *BIOL209 (or TREC209* *Natural Resource Conservation* *LSU*
2 *or MB516)* *and Management*

3
4 **MINOR/COGNATE:**

5
6 MB501 Information and Communication LNU
7 Technology in Teaching Biology
8 MB502 Instructional Aid Construction
9 Biology Teaching LNU
10 MB503 Strategies and Methods in
11 Teaching Biology LNU
12
13

14 **IV. MAJOR GRADUATE COURSES FOR OFFERING IN LSU (Main Campus)**

15
16 **A. GRADUATE COURSES FOR INSTITUTION**

17
18 1. BIOL238 (or MB504). Molecular Biology

19 Nuclear and extranuclear gene structure, replication; gene expression and regulation;
20 molecular techniques and analysis; biotechnology applications.

21
22 Pre-requisite: Consent of Instructor (COI)
23 Credit: 3 units (3 hrs lec.)
24

25 Rationale: This course provides the students with in-depth understanding of the
26 structure, action and function of the gene, both nuclear and extranuclear.
27 Furthermore, they will be introduced to the various techniques and
28 applications of molecular biology.
29

30 2. BIOL291 (or MB507). Special Topics in Biology
31 Topics of current interest in biology.

32
33 Pre-requisite: none
34 Credit: 3 units (3 hrs lec)
35

36 Rationale: This course provides the students the opportunity to be exposed to the current
37 issues, concerns, new knowledge and technologies in the various aspects of
38 biology.
39

40 3. BIOL227 (or MB508). Developmental Biology

41 Initiation, differentiation and development of tissues and organs of higher plants and
42 animals.

43
44 Pre-requisite: Consent of Instructor (COI)
45 Credit: 3 units (2 hrs lec, 3 hrs lab)
46

47 Rationale: This course enables the students to understand how the different tissues and
48 organs of higher plants and animals are developed.
49

50 4. BIOL293 (or MB509). Microbiological Techniques

51 Techniques in the examination, culture and identification of microorganisms with
52 emphasis on bacteria and microscopic fungi.

53
54 Pre-requisite: Consent of Instructor (COI)
55 Credit: 3 units (2 hr lec, 3 hrs lab)
56

57 Rationale: This course exposes the students to the various techniques in the study of
58 microorganisms, especially bacteria and microscopic fungi, making them
59 better equipped for biology teaching and research.
60

1 5. BIOL292 (or MB510). Microtechniques in Biology
2 Laboratory techniques in the preparation of biological materials for cytological and
3 histological studies.

4
5 Pre-requisite: Consent of Instructor (COI)
6 Credit: 3 units (2 hr lec, 3 hrs lab)

7
8 Rationale: This course enables the students to have a hands-on experience in the various
9 techniques used in the preparation of microscope slides and other materials
10 for biology laboratory teaching and research.

11
12 6. BOTN215 (or MB515). Advances in Plant Growth and Development
13 Current advances in the study of growth and development processes in plants.

14
15 Prerequisite: Consent of Instructor (COI)
16 Credit: 3 units (3 hrs. lec)

17 Rationale: This course enables the students to be kept abreast with recent advances in
18 the study of the nature, processes and control of plant growth and
19 development in plants.

20
21 **B. EXISTING GRADUATE COURSES IN LSU (Main Campus) FOR CROSS-LISTING**

22
23 1. BOTN241 (or MB512). Methods in Plant Systematics
24 Research issues in plant taxonomic studies; preparation of taxonomic literatures;
25 curation and management of herbaria and botanic gardens.

26
27 2. BIOL209 (or TREC209 or MB516). Natural Resource Conservation and Management
28 Sustainable management and conservation of soil, water and biological resources in
29 tropical areas including application of Geographic Information Systems (GIS).

30
31 3. BIOL205 (or TREC205 or MB511). Biological Diversity of Tropical Ecosystems
32 Biodiversity components, levels, patterns, distribution, values, current status, threats,
33 measurements and conservation initiatives; speciation and phylogeny, endemism and
34 extinction.

35
36
37 **V. FACULTY PROFILE**

<u>Faculty</u>	<u>Degree and Specialization</u>	<u>Courses to Handle</u>
A. Regular Faculty		
Pamela P. Abit	M.S. Botany (Plant Systematics/ Environmental Science)	BOTN241
Arvin C. Balala	M.S. Marine Biology (Marine Microbiology)	BIOL293
Joycelyn C. Jumawan	M.S. Biology (Physiology)	BIOL227
Beatriz S. Belonias	Ph.D. Botany (Plant Systematics & Forest Biological Science)	BOTN241, BIOL205
Senona A. Cesar	M.S. Marine Biology (Marine Ecology)	BIOL205
Marita I. Galinato	M.S. Botany (Weed Ecology) M.S. Botany (Wetland Ecology)	BIOL205, BOTN241
Bernardita P. Germano	Ph.D. Marine Biology (Marine Invertebrate Biology)	BIOL227

Lelita R. Gonzal	Ph.D. Botany (Plant Physiology)	BOTN215
Humberto R. Montes	M.S. Marine Biology (Phycology)	BIOL292
Marilyn Z. Oracion	M.S. Genetics (Cytogenetics)	BIOL292, BIOL238
B. Affiliate Faculty		
Paciencia P. Milan	Ph.D. Biology (Vertebrate Biology)	BIOL209
Ma. Juliet C. Ceniza	Ph.D. (Agro-ecology/Entomology)	BIOL205
Jesusito L. Lim	M.S. Microbiology	BIOL293
Julie T. Diamante	Ph.D. Food Microbiology	BIOL293
Nestor L. Pido	Ph.D. Genetics & Plant Breeding	BIOL238
Teofanes A. Patindol	Ph.D. Environmental Science/ Forest Wildlife Management	BIOL205, BIOL209
Lucia M. Borines	Ph.D. Plant Pathology (Phytobacteriology)	BIOL293
Dilberto O. Ferraren	Ph.D. Molecular Biology	BIOL238
Edgardo E. Tulin	Ph.D. Biotechnology & Molecular Biology	BIOL238
Tomas J. Fernandez	Ph.D. Tropical Medicine	BIOL227

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2 **VI. FACILITIES**

3
4 **A. Instruction and Research Laboratories**

- 5
6 1. General lecture hall (1)
7 2. General laboratory rooms (4)
8 3. Preparation room (1)
9 4. Small lecture hall (1)
10 5. Herbarium (1)
11 6. Conference room and library (1)
12 7. Greenhouse (1)
13 8. Faculty offices (10)

14
15 **B. Office Equipment**

- 16
17 1. Computers (2)
18 2. Aircon (1)
19 3. Typewriter (2)

20
21 **C. Laboratory Equipment**

- 22
23 1. Rotary and sliding microtomes (2)
24 2. Ovens, Memmert (3)
25 3. Vacuum pump (1)
26 4. Paraffin dispenser (1)
27 5. Refrigerators (3)
28 6. Gas range, GE (1)
29 7. Furnace (1)
30 8. Microscopes (58)

- Electric compound microscopes (30)
 - Light compound microscopes (9)
 - Stereoscopes (34)
9. Balances (10)
 - Top loading (1)
 - Analytical, macro, Sartorius (1)
 - Analytical micro, Shimadzu (1)
 - Triple beam (6)
 - Harvard trip balance (1)
 10. Distilling apparatus (1)
 11. Hotplates (3)
 12. Videoflex camera (1)
 13. Weighing scale, 10 kg (1)
 14. Centrifuge (1)
 15. Fumehod (1)
 16. Photometer (1)
 17. Salinity meter (1)
 18. Slide projector (1)
 19. Overhead projector (2)
 20. Osterizer/Mixer (3)
 21. Water bath (2)
 22. Inoculation chamber, Labconco (1)
 23. Flame photometer (1)
 24. Light meter (2)
 25. Slide warmer (1)
 26. Timer, Lafayette (8)
 27. Autoclave/sterilizer (1)
 28. pH meter (1)
 29. Refractometer (2)
 30. Stethoscope (2)
 31. Camera (1)

D. Other Laboratory Materials

1. Mortar and Pestle (10)
2. Sieves (4)
3. Alcohol lamps (10)
4. Thermometers (assorted)
5. Automatic Voltage Regulator (6)
6. Plastic models of plant and animal organs
7. Microscope prepared slides (assorted)
8. Glasswares (assorted)

C. REFERENCES

1. LSU LIBRARY

TEFAL (The Essential Electronic Agricultural Library):

- Agriculture, Ecosystems and Environment
- American Journal of Physiology
- Annual Review of Ecology and Systematics
- Ann. Rev. of Plant Physiology and Plant Molecular Biology
- Australian Journal of Botany
- Australian Journal of Plant Physiology
- Bioresource Technology
- Botanical Review
- Canadian Journal of Botany
- Economic Botany
- Physiological and Molecular Plant Pathology

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Journals:

Acta Botanica Sinica
Acta Horticultura
Advances in Botanical Research
Agricultural Ecosystems and Environment
American Journal of Botany
Annals of Botany
Annals of Tropical Research
Annals of the Tsukuba Botanical Guides
Annual Review of Plant Physiology
Australian Journal of Ecology
Australian Journal of Plant Physiology
Bioscience, Biotechnology and Biochemistry
Botanical Gazette
Botanical Magazine
Botanical Review
British Mycological Society Magazine
Booklyn Botany Garden Newsletter
The Bryologist
Canadian Journal of Botany
Israel Journal of Botany
Journal of Applied Ecology
Journal of Ecology
Journal of Environmental Quality
The Journal of Environmental Science
Journal of Environmental Science and Management
Journal of Experimental Botany
Mycologia
Phil. Journal of Biotechnology
Plant Cell Physiology
Plant Science
Plant Physiology
Plant Research and Development
Plant Resources of South and Southeast Asia
Taxon
Transactions of the British Mycological Society
Trends in Ecology and Evolution
Tropical Ecology
Tropical Grasslands

Books: Several assorted textbooks in biology, zoology, botany, biodiversity, embryology, genetics, microbiology, ecology, marine biology, conservation biology, morphology, anatomy, and other related biological disciplines are available in the LSU Library.

Audio-visual materials like Brittanica videotapes, National Geographic video documentaries and video-CDs on different topics in biology are also available.

52 **2. INSTITUTE OF TROPICAL ECOLOGY (ITE) LIBRARY**

53
54 **Journals and Other Publications:**

55
56 Annals of Tropical Research
57 Ecology Update Nos. 1, 2 and 3
58 Ecology Volumes 55-60 No. 1-6
59 Ecological Monograph
60 Canadian Journal of Zoology

- 1 Journal of Tropical Forest, Science Volumes 1-6 (A Publication of the
 2 Forest Research Institute Malaysia)
 3 Annalen Vol. 97B-99B
 4 Reproductive Ecology of Tropical Forest Plants, Vol. 7
 5 Symposium of the Ecology and Management of Some Tropical Shallow
 6 Water Communities: Coral Reef, Tidal Forest and Estuaries,
 7 Volumes 17-20
 8 Journal of Applied Ecology (Vols. 3 to 22)
 9 The American Naturalist, Volumes 112-114 No. 1-6
 10 Bibliotheca Diatomologica
 11 The Journal of Animal Ecology, Volumes 1 to 51
 12 Canadian Journal of Fisheries and Aquatic Sciences
 13 The Philippine Scientist, Volumes 12, 20, 21, 22, 23, 24, 25, 27, 28, 29 & 32
 14 Status of Coral Reefs of the World
 15 Tropical Limnology, Volumes 1 to 3
 16 Resources and Ecological Assessment of Ormoc Bay, Philippines
 17 The Distribution and Ecology of Mammals on Leyte, Biliran, and Maripipi
 18 Islands, Philippines
 19 Lecture Notes for the International Seminar-Workshop on Tropical Ecology
 20 Series
 21 Project Reports, ViSCA-GTZ Tropical Ecology Program

22
 23 **Books:**

- 24 CRC Books on Coastal Resource Management topics
 25 Agroecology books
 26 Biology books
 27 Books on Economic evaluation, policy and market economy
 28 Books on Philippine Flowers and Trees
 29 Books on Soils
 30 Conservation and Biodiversity books
 31 Ecology books, PLITS series
 32 Entomology books
 33 Environmental books
 34 Forestry books
 35 Limnology books
 36 Marine Ecology books
 37 Rainforestration books
 38 Taxonomy books
 39 The Philippines Recommends Series
 40 Zoology books
 41 PROSEA books
 42

43 **3. DBS LIBRARY AND LSU HERBARIUM**

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 45 **Books:**

- 46 Flora Malesiana (complete set of volumes)
 47 Flora of Taiwan (complete set of volumes)
 48 Flora of Java (complete set of volumes)
 49 Enumeration of Philippine Flowering Plants (complete set of volumes)
 50 Tree Flora of Malaya
 51 Concise Flora of Singapore
 52 The Vascular Flora of Mt. Makiling
 53 Flowering Plants and Ferns of Mt. Makiling
 54

55 **Journals and Other Publications:**

- 56 Taxon
 57 The Philippine Journal of Crop Science
 58 BioTechniques
 59 BioPharm