

University of the Philippines  
Office of the Secretary of the University  
Administrative Section  
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JAN 20 2020 *Vingre*

JAN 20 2020

DTS:UP.EDU.PH OVPAA  
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Date: JAN 16 2020  
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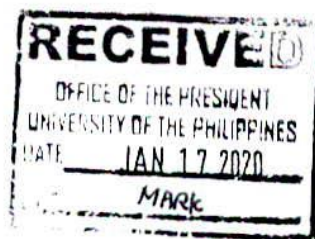
UNIVERSITY OF THE PHILIPPINES

3F, Quezon Hall, Diliman, Quezon City  
Tele/Fax: (632) 9264736; 9818500 local 2528 or 2529  
Email: ovpa@up.edu.ph

OFFICE OF THE VICE PRESIDENT FOR ACADEMIC AFFAIRS

15 January 2020

**DANILO L. CONCEPCION**  
President  
University of the Philippines





Dear President Concepcion:

This is to recommend for approval the following curricular proposals of UP Diliman. These proposals were approved by the UP Diliman University Council (see Annex 1).

- A. College of Architecture
  - 1. Bachelor in Landscape Architecture
- B. College of Arts and Letters
  - 1. Bachelor of Arts (Speech Communication)
  - 2. Bachelor of Arts (Art Studies: Philippine Arts)
  - 3. Bachelor of Arts (Art Studies: Art History)
  - 4. Bachelor of Arts (Art Studies: Interdisciplinary)
  - 5. Bachelor of Arts (European Languages)
  - 6. Bachelor of Arts (Theater Arts) ✓
- C. College of Education
  - 1. Bachelor of Elementary Education
  - 2. Bachelor of Secondary Education
- D. College of Engineering
  - 1. Bachelor of Science in Mining Engineering
  - 2. Bachelor of Science in Materials Engineering
  - 3. Bachelor of Science in Metallurgical Engineering
  - 4. Bachelor of Science in Geodetic Engineering
  - 5. Bachelor of Science in Computer Science
  - 6. Bachelor of Science in Electrical Engineering
  - 7. Bachelor of Science in Computer Engineering
  - 8. Bachelor of Science in Electronics and Communications Engineering
  - 9. Bachelor of Science in Industrial Engineering
  - 10. Bachelor of Science in Mechanical Engineering
- E. College of Fine Arts
  - 1. Bachelor of Fine Arts (Art Education)
- F. College of Home Economics
  - 1. Bachelor of Science in Family Life and Child Development
  - 2. Bachelor of Science in Hotel, Restaurant and Institution Management
  - 3. Bachelor of Science in Community Nutrition
- G. College of Mass Communication
  - 1. Bachelor of Arts in Journalism

2. Bachelor of Arts in Communication Research
3. Bachelor of Arts in Film
4. Bachelor of Arts in Broadcast Communication
- H. College of Music
  1. Bachelor in Music
- I. College of Science
  1. Bachelor of Science in Physics
  2. Bachelor of Science in Applied Physics (Instrumentation Physics)
  3. Bachelor of Science in Applied Physics (Materials Physics)
  4. Bachelor of Science in Molecular Biology and Biotechnology
  5. Bachelor of Science in Mathematics
  6. Bachelor of Science in Biology
- J. College of Social Sciences and Philosophy
  1. Bachelor of Arts (Anthropology)
  2. Bachelor of Arts (Linguistics)
  3. Bachelor of Science (Geography)
  4. Bachelor of Arts (History)
- K. College of Social Work and Community Development
  1. Bachelor of Science in Social Work
- L. School of Library and Information Science
  1. Bachelor in Library and Information Science
- M. School of Statistics
  1. Bachelor of Science (Statistics)

Truly yours,

  
Maria Cynthia Rose Banzon Bautista  
Vice President for Academic Affairs 

APPROVED:

  
TEODORO J. MERBOSA, M.D.  
EXECUTIVE VICE PRESIDENT  
BY AUTHORITY OF THE PRESIDENT  
1/20/2020



Annex 1. List of curricular proposals and dates of UC endorsement and submission of revised proposals to OVPAA

Curricular Proposal	UC Endorsement	1 <sup>st</sup> submission of the revised proposal to OVPAA	UC Endorsement	2 <sup>nd</sup> submission of the revised proposal to OVPAA	UC Endorsement	3 <sup>rd</sup> submission of the revised proposal to OVPAA
<i>College of Architecture</i>						
Bachelor in Landscape Architecture	18-Apr-18	29-May-18	28-May-18	9-Aug-18		
<i>College of Arts and Letters</i>						
Bachelor of Arts (Speech Communication)	19-Jun-18	30-Aug-18				
Bachelor of Arts (Art Studies: Philippine Arts)	19-Jun-18	20-Aug-18				
Bachelor of Arts (Art Studies: Art History)	19-Jun-18	20-Aug-18				
Bachelor of Arts (Art Studies: Interdisciplinary)	19-Jun-18	20-Aug-18				
Bachelor of Arts (European Languages)	2-Sep-19	19-Sep-19				
Bachelor of Arts (Theater Arts)	19-Jun-18	30-Aug-18				
<i>College of Education</i>						
Bachelor of Elementary Education	15-Jul-19 & 2-Sept-19	21-Nov-19				
Bachelor of Secondary Education	15-Jul-19 & 2-Sept-19	21-Nov-19				
<i>College of Engineering</i>						
Bachelor of Science in Mining Engineering	*CC approved	17-Apr-19	24-Jun-19	28-Aug-19		
Bachelor of Science in Materials Engineering	18-Feb-19	7-May-19				
Bachelor of Science in Metallurgical Engineering	*CC approved	28-Nov-18	26-Nov-18	28-Aug-19	15-Jul-19	28-Aug-19
Bachelor of Science in Geodetic Engineering	*CC approved	17-Apr-19	24-Jun-19	19-Sep-19		
Bachelor of Science in Computer Science	19-Jun-18	6-Sep-18				
Bachelor of Science in Electrical Engineering	19-Jun-18	30-Aug-18				
Bachelor of Science in Computer Engineering	19-Jun-18	30-Aug-18				



Curricular Proposal	UC Endorsement	1 <sup>st</sup> submission of the revised proposal to OVPA	UC Endorsement	2 <sup>nd</sup> submission of the revised proposal to OVPA	UC Endorsement	3 <sup>rd</sup> submission of the revised proposal to OVPA
Bachelor of Science in Electronics and Communications Engineering	19-Jun-18	30-Aug-18				
Bachelor of Science in Industrial Engineering	19-Jun-18	30-Aug-18				
Bachelor of Science in Mechanical Engineering	28-May-18	15-Aug-18				
<i>College of Fine Arts</i>						
Bachelor of Fine Arts (Art Education)	15-Jul-19	5-Aug-19				
<i>College of Home Economics</i>						
Bachelor of Science in Family Life and Child Development	28-May-18	23-Aug-18	18-Feb-19	9-Sep-19		
Bachelor of Science in Hotel, Restaurant and Institution Management	19-Jun-18	20-Aug-18				
Bachelor of Science in Community Nutrition	*CC approved	23-May-18	28-May-18	30-Aug-18		
<i>College of Mass Communication</i>						
Bachelor of Arts in Journalism	19-Jun-18	24-Jun-19				
Bachelor of Arts in Communication Research	28-May-18	20-Aug-18				
Bachelor of Arts in Film	19-Jun-18	30-Aug-18				
Bachelor of Arts in Broadcast Communication (The previous curriculum proposal (2018) was approved by the President on 8 March 2019. The attached proposal is the revised 2018 curriculum)	15-Jul-19	5-Aug-19				
<i>College of Music</i>						
Bachelor in Music	*CC approved	29-Nov-18	26-Nov-18	17-Oct-19		
<i>College of Science</i>						
Bachelor of Science in Physics	19-Jun-18	20-Aug-18				





Curricular Proposal	UC Endorsement	1 <sup>st</sup> submission of the revised proposal to OVPAA	UC Endorsement	2 <sup>nd</sup> submission of the revised proposal to OVPAA	UC Endorsement	3 <sup>rd</sup> submission of the revised proposal to OVPAA
Bachelor of Science in Applied Physics (Instrumentation Physics)	19-Jun-18	20-Aug-18				
Bachelor of Science in Applied Physics (Materials Physics)	19-Jun-18	20-Aug-18				
Bachelor of Science in Molecular Biology and Biotechnology	28-May-18	20-Aug-18				
Bachelor of Science in Mathematics	19-Jun-18	20-Aug-18				
Bachelor of Science in Biology	19-Jun-18	20-Aug-18				
<i>College of Social Sciences and Philosophy</i>						
Bachelor of Arts (Anthropology)	19-Jun-18	20-Aug-18		1 July 2019 (replacement of proposed & final checklist)		
Bachelor of Arts (Linguistics)	28-May-18	24-Aug-18				
Bachelor of Science (Geography)	19-Jun-18	5-Sep-18				
Bachelor of Arts (History)	28-May-18	24-Jun-19				
<i>College of Social Work and Community Development</i>						
Bachelor of Science in Social Work	19-Jun-18	20-Aug-18				
<i>School of Library and Information Science</i>						
Bachelor in Library and Information Science	28-May-18	15-Aug-18				
<i>School of Statistics</i>						
Bachelor of Science (Statistics)	19-Jun-18	23-Aug-18				



20 August 2018

Referred to : VP Bautista

For Appropriate Action, please

UPDiliman Proposals

Ref. No. & Date	Title	Date Received/DTS Nos.
Ref. No. MLT 18-427, dtd 16August2018	Proposal for the Revision of the Bachelor of Science in Mathematics Program (Appendix ZZ)	17August2018 2018-0815-0011-8375
Ref. No. MLT 18-428, dtd 16August2018	Proposal for the Revision of the Bachelor of Arts in Communication Research Program (Appendix JJ)	17August2018 2018-0815-0011-8376
Ref. No. MLT 18-429, dtd 16August2018	Proposal for the Revision of the Bachelor of Science in Social Work (Appendix AJ)	17August2018 2018-0815-0011-8374
Ref. No. MLT 18-430, dtd 16August2018	Proposal for the Revision of the Bachelor of Arts (Anthropology) (Appendix NN)	17August2018 2018-0815-0011-8373
Ref. No. MLT 18-431, dtd 16August2018	Proposal for the Revision of the Bachelor of Science in Molecular Biology Program (Appendix GG)	17August2018 2018-0815-0011-8372
Ref. No. MLT 18-432, dtd 16August2018	Proposal for the Revision of the Bachelor of Science in Biology (Appendix YY)	17August2018 2018-0815-0011-8370
Ref. No. MLT 18-433, dtd 16August2018	Curricular proposals (Appendix OO, Revision of Bachelor of Arts [Art Studies: Philippine Art] program College of Arts and Letters); (Appendix PP, Revision of Bachelor of Arts [Art Studies: Art History] program, CAL); (Appendix QQ, Revision of Bachelor of Arts [Art Studies: Interdisciplinary] program, CAL)	17August2018 2018-0815-0011-8369
Ref. No. MLT 18-434, dtd 16August2018	Curricular Proposal (Appendix AB, Revision of Bachelor of Science in Physics) Program, College of Science; (Appendix AC, Revision of Bachelor of Science in Applied Physics [Instrumental Physics] program, CS); Appendix AD, Revision of Bachelor of Science in Applied Physics [Materials Physics] program, CS)	17August2018 2018-0815-0011-8371
Ref. No. MLT 18-435, dtd 17August2018	Proposal for the Revision of the Bachelor of Science in Hotel, Restaurant and Institution Management (Appendix RR)	20August2018 2018-0815-0011-8379

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*Instrumentation*

Atty. Roberto M.J. Lara

Secretary of the University and of the Board of Regents





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518-324  
**OFFICE OF THE CHANCELLOR**  
for Academic Affairs  
University of the Philippines  
D Date: 20 Aug 2018  
By: [Signature]

REFERENCE NO. MLT-18-434

Atty. Danilo L. Concepcion  
President  
University of the Philippines System  
Diliman, Quezon City

Dear President Concepcion:

I would like to submit for your consideration and approval the curricular proposals endorsed by the University Council at its (special) meeting held on 19 June 2018.

Appendix AB	Revision of Bachelor of Science in Physics Program College of Science
Appendix AC	Revision of Bachelor of Science in Applied Physics (Instrumentation Physics) Program College of Science
Appendix AD	Revision of Bachelor of Science in Applied Physics (Materials Physics) Program College of Science

Thank you.

**UNIVERSITY OF THE PHILIPPINES**  
**DILIMAN** **QUEZON CITY**  
VOIP TRUNKLINE: 981-8500 LOCAL: 2558, 2556  
DIRECT LINE: (632) 929-5401, (632) 927-1835  
FAX: (632) 928-2863  
E-MAIL: chancellor.updiliman@up.edu.ph

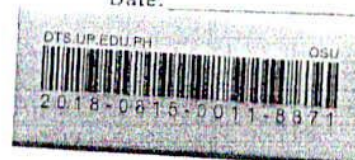
16 August 2018

University of the Philippines  
Office of the Secretary of the University  
Administrative Section

RECEIVED BY:

17 AUG 2018

Date:



Very truly yours,

[Signature]  
MICHAEL L. TAN, PhD  
Chancellor

Encl.: 1 copy of the proposal





UNIVERSITY OF THE PHILIPPINES DILIMAN

Office of the University Registrar

T.M. Kalaw St. corner Quirino St., U.P. Diliman, Q.C. 1101 ▪ P.O. Box 161, U.P. Diliman, Q.C. 1101  
Direct Line 927-6084 ▪ U.P. Diliman Trunk Line No. 981-8500

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10 August 2018

MICHAEL L. TAN, DVM, PhD

Chancellor

University of the Philippines

Diliman, Quezon City

THROUGH:

Vice Chancellor Evangeline C. Amor, PhD

Office of the Vice Chancellor for Academic Affairs

4966  
RECEIVED  
OFFICE OF THE CHANCELLOR  
University of the Philippines Diliman  
Date: AUG 15 2018 Time: \_\_\_\_\_  
By: *[Signature]*

Dear Chancellor Tan:

I would like to submit for your consideration and endorsement to the President the curricular proposals endorsed by the University Council at its (special) meeting held on 19 June 2018.

Appendix AB *Revision of the Bachelor of Science in Physics Program*  
College of Science

Appendix AC *Revision of the Bachelor of Science in Applied Physics (Instrumentation Physics) Program*  
College of Science

Appendix AD *Revision of the Bachelor of Science in Applied Physics (Materials Physics) Program*  
College of Science

Sincerely,

*[Signature]*  
MA. THERESA T. PAYONGAYONG, PhD  
University Registrar and UPD UC CC Member-Secretary

Encl. 1 copy of the proposal





NATIONAL INSTITUTE OF PHYSICS  
College of Science  
University of the Philippines  
Diliman, Quezon City

PROPOSED CURRICULAR REVISION OF THE BS IN APPLIED PHYSICS  
PROGRAM (MATERIALS PHYSICS)

I. Background/Rationale

Students who have taken the K-12 basic education program are entering the university in AY 2018-2019. Internationally, a 4-year BS Applied Physics program is typical after a basic K-12 education.

The BS Applied Physics program adopted a 5-year curriculum effective AY 1984-1985 to enhance the offering of the Institute, with Applied Physics 199 (Independent Research) and Applied Physics 200 (Undergraduate Thesis) to be taken in the 5<sup>th</sup> year. Since then, it has become an institutional practice to accept students into the research laboratories in their 3rd or early 4th year in preparation for their thesis. This practice has been validated by the increased enrollment in the graduate Physics program. Graduates of the program have found employment in fields ranging from the semiconductor industry to the more nascent sector of data analytics. Mentoring inside a research lab goes beyond providing a nurturing environment for writing a thesis. Exposure to issues of national development and industry needs are encountered inside labs that require an infusion of grants from the national government and other institutions.

Without losing the gains of mentoring inside the research laboratories while still maintaining the level of rigor of the courses, this proposal aims to change the length of the BS Applied Physics program, which was last updated in June 2012, from 5 years to 4 years. There is a need to streamline the courses to make the program more responsive to the demands of a fast-changing environment both in a national as well as a global context. Enhancing the depth and breadth of courses becomes possible with the increased background preparation and maturity of students entering the program, and pedagogical and technological advances. Reflective of these ideas are: (1) institution of new courses without changing the course titles for the fundamental physics series, mathematical physics series, and the classical mechanics series; (2) reconfiguration of the experimental physics laboratories; (3) institution of electives geared towards understanding physics concepts in depth; (4) revision of existing courses to cover the physics of enabling technologies such as photonics and optoelectronics; and (5) merging of existing courses that evolved to have significant overlap.

Concurrently existing courses may have the same title but different course numbers: there is a plan to eventually change the new course numbers back to the old ones (e.g. Physics 106 will be renumbered to Physics 101 after the transitory period).



This proposal also reflects the revised GE requirements approved by the BOR in October 2017.

## II. Summary of Proposed Changes

The proposed changes are:

### A. Change in Program Requirements

Change in program requirements		
Nature	Existing	Proposed
1. Change in GE requirements	Core – 18 units <i>AH – 9 units</i> <i>MST – 3 units</i> <i>SSP – 6 units</i> Program-prescribed – 3 units <i>MST – 3 units</i> Free GE – 18 units <i>AH – 6 units</i> <i>SSP – 9 units</i> Total = 36 units	Core – <i>21 units</i> Program-prescribed – 3 units Free GE – <i>0 units</i> Total = 24 units
2. Deletion of courses from the program	1. Math 14 Trigonometry or Math 17 Algebra and Trigonometry 2. Math 53 Elementary Analysis I 3. Math 54 Elementary Analysis II 4. Math 55 Elementary Analysis III 5. Math 121.1 Elementary Differential Equations 6. BIO 11 (old course) 7. Chem 16 (old course) 8. Chem 17 (old course) 9. Physics 101 Fundamental Physics I 10. Physics 102 Fundamental Physics II 11. Physics 103 Fundamental Physics III 12. Physics 104 Modern Physics I 13. Physics 105 Modern Physics II 14. Physics 101.1 Fundamental Physics I Laboratory 15. Physics 102.1 Fundamental Physics I Laboratory 16. Physics 103.1 Fundamental Physics III Laboratory 17. Physics 104.1 Modern Physics I Laboratory 18. Physics 111 Mathematical Physics I 19. Physics 112 Mathematical Physics II 20. Physics 113 Mathematical Physics III 21. Physics 121 Theoretical Mechanics I 22. Chem 112 Inorganic Chemistry 23. MetE 143 Elements of Material Science 24. App Physics 171 Introductory Crystallography 25. App Physics 173 Solid State Physics	





	26. App Physics 176 Materials Physics II	
4. Addition of required courses to the program	1. Math 21 Elementary Analysis I 2. Math 22 Elementary Analysis II 3. Math 23 Elementary Analysis III 4. Math 122 Differential Equations and Applications 5. Chem 16 General Chemistry I 6. Chem 16.1 General Chemistry I Laboratory 7. Chem 17 General Chemistry II 8. Chem 17.1 General Chemistry II Laboratory 9. BIO 11 Fundamentals of Biology I 10. BIO 11.1 Fundamentals of Biology I Laboratory 11. Physics 106 Fundamental Physics I 12. Physics 107 Fundamental Physics II 13. Physics 108 Fundamental Physics III 14. Physics 106.1 Fundamental Physics I Laboratory 15. Physics 107.1 Fundamental Physics II Laboratory 16. Physics 116 Mathematical Physics I 17. Physics 117 Mathematical Physics II 18. Physics 126 Theoretical Mechanics I 19. Physics 161 Introductory Laser Physics and Photonics 20. Physics 165 Optical Physics I 21. Physics 170 Condensed Matter	
7. Change in course sequence	1. Chem 16 and Chem 16.1 2. Chem 17 and Chem 17.1 3. Chem 28 and Chem 28.1 4. Chem 153 5. BIO 11 and BIO 11.1 6. App Physics 155 7. App Physics 181 8. Physics 141 9. Physics 142 10. Physics 161 11. Physics 191 12. Physics 192 13. Physics 196 14. App Physics 199 15. App Physics 200 16. NSTP 1 17. NSTP 2 18. PI 100	
8. Change in total number of units	176	150
9. Change in number of years of the program	5	4



## II. Change in Program Requirements

### A. Change in GE Requirements

*From:*

	AH	MST	SSP	Total
Required GE	Comm 3 Eng 10 Fil 40	STS	Kas 1 Philo 1	
	9 units	3 units	6 units	18 units
Program-prescribed		Physics 10		
		3 units		3 units
Free Choice	6 units	0 units	9 units	15 units
<b>TOTAL</b>	<b>15 units</b>	<b>6 units</b>	<b>15 units</b>	<b>36 units</b>

*To:*

Required GE	ENG 13 / Speech 30 FIL 40 ARTS 1 DRMAPS / STS 1 Soc Sci 1 / Soc Sci 2 KAS 1 Philo 1	<b>21 units</b>
Program-prescribed	Physics 10	<b>3 units</b>
GE Elective		<b>0 units</b>
<b>TOTAL</b>		<b>24 units</b>

*Justification:* The changes reflect the revision of the GE framework approved by the BOR in October 2017. The list of required GE courses is updated. Physics 10 is retained as a program-prescribed GE course, as it covers topics that are not included in the majors courses.

### B. Deletion of Courses

1. Math 14 Trigonometry or Math 17 Algebra and Trigonometry
2. Math 53 Elementary Analysis I
3. Math 54 Elementary Analysis II
4. Math 55 Elementary Analysis III
5. Math 121.1 Elementary Differential Equations

*Justification:* The K12 stream for Math, Science and Engineering majors is assumed to adequately prepare the students for the BS





Physics program. These Math courses have been abolished by the Institute of Math and replaced by Math 21-23, and Math 122.

**6. Chem 16 (old course)**

**7. Chem 17 (old course)**

**8. BIO 11 (old course)**

*Justification:* These courses have been replaced by the respective institutes with lec/lab component courses, namely Chem 16/16.1, Chem 17/17.1 and BIO 11/11.1.

**9. Physics 101. Fundamental Physics I (4 u.)**

**10. Physics 102. Fundamental Physics II (4 u.)**

**11. Physics 103. Fundamental Physics III (4 u.)**

**12. Physics 104. Modern Physics I (4 u.)**

**13. Physics 105. Modern Physics II (3 u.)**

*Justification:* This program is affected by the changes instituted in the BS Physics program, wherein the Physics 101-103 (Fundamental Physics) and Physics 104-105 (Modern Physics) series are replaced by the Physics 106-108 series (Fundamental Physics).

**14. Physics 101.1 Fundamental Physics I Laboratory**

**15. Physics 102.1 Fundamental Physics II Laboratory**

**16. Physics 103.1 Fundamental Physics III Laboratory**

*Justification:* This program is affected by the changes instituted in the BS Physics program, wherein the Physics 101.1-103.1 (Fundamental Physics I-III Laboratory) are replaced by Physics 106.1 and Physics 107.1 (Fundamental Physics I & II Laboratory).

**17. Physics 104.1 Modern Physics I Laboratory**

*Justification:* This program is affected by the changes instituted in the BS Physics program, wherein the Physics 104.1 (Modern Physics Laboratory) has been absorbed in Physics 191-192 (Experimental Physics I-II).

**18. Physics 111 Mathematical Physics I**

**19. Physics 112 Mathematical Physics II**

**20. Physics 113 Mathematical Physics III**

*Justification:* This program is affected by the changes instituted in the BS Physics program, wherein Physics 111-113 (Mathematical Physics I-III, 3 x 3 u.) are replaced by Physics 116-117 (Mathematical Physics I & II, 2 x 5 u.).



**21. Physics 121 Theoretical Mechanics I**

*Justification:* This program is affected by the changes instituted in the BS Physics program, wherein Physics 121 (3 u.) is replaced by Physics 126 (Theoretical Mechanics I, 4 u.).

**22. Chem 112 Inorganic Chemistry****23. MetE 143 Elements of Materials Science****24. App Physics 171 Introductory Crystallography**

*Justification:* All essential topics in these courses (chemical structures, introductory materials science and crystallography) are covered more efficiently in Physics 170 (Condensed Matter) and App Physics 175 (Materials Physics I).

**25. App Physics 173. Solid State Physics**

*Justification:* App Physics 173 cover crystal structure of solids; lattice vibrations; band theory of solids; metals; semiconductor materials and devices; dielectric, magnetic, thermal, optical, and mechanical properties of solids; and superconductors. Physics 170 (Condensed Matter) covers crystal structure; mechanical, thermal, electric, and magnetic properties of solids; band theory of solids; metals, insulators, and semiconductors; lattice vibrations; imperfections; superconductivity and superfluidity. Since Physics 170 covers all the topics of App Physics 173, it can appropriately replace the course.

**26. App Physics 176. Materials Physics II**

*Justification:* The course covers the fabrication, processing, characterization, and applications of amorphous materials, liquid crystals, polymers, ceramic, composites and other important new materials. All essential topics in this course are covered more suitably in App Physics 175 (Materials Physics I) and the newly required course Physics 161 (Introductory Laser Physics and Photonics).

**C. Addition of Required Courses**

1. Math 21 Elementary Analysis I
2. Math 22 Elementary Analysis II
3. Math 23 Elementary Analysis III
4. Math 122 Differential Equations and Applications

*Justification:* Math 21-23 replaces the Math 53-55 series, while Math 122 replaces Math 121/121.1 (Elementary Differential Equations), which were abolished by the Institute of Math.

5. Chem 16 General Chemistry I
6. Chem 17 General Chemistry II
7. Chem 16.1 General Chemistry I Laboratory
8. Chem 17.1 General Chemistry II Laboratory





**9. BIO 11 Fundamentals of Biology I\*****10. BIO 11.1 Fundamentals of Biology I Laboratory\***

*Justification:* These changes reflect the updated course numbers of Chem 16, Chem 17, and BIO 11; which are now split into lec/lab classes.

\*subject to approval

**11. Physics 106 Physical Fundamentals I****12. Physics 107 Fundamental Physics II****13. Physics 108 Fundamental Physics III**

*Justification:* This program is affected by the changes instituted in the BS Physics program, wherein the Physics 101-103 (Fundamental Physics) and Physics 104-105 (Modern Physics) series are replaced by the Physics 106-108 series (Fundamental Physics) in light of the increased preparedness of students who have gone through the K12 program.

**14. Physics 106.1 Physical Fundamentals I Laboratory****15. Physics 107.1 Physical Fundamentals II Laboratory**

*Justification:* This program is affected by the changes instituted in the BS Physics program, wherein Physics 101.1-103.1 (Fundamental Physics Labs) are replaced by Physics 106.1 and Physics 107.1 (Fundamental Physics I & II Lab) in light of the increased preparedness of students who have gone through the K12 program.

**16. Physics 116 Mathematical Physics I****17. Physics 117 Mathematical Physics II**

*Justification:* This program is affected by the changes instituted in the BS Physics program, wherein the Physics 111-113 (Mathematical Physics I-III) series is replaced by the Physics 116-117 (Mathematical Physics I & II) series.

**18. Physics 126 Theoretical Mechanics I**

*Justification:* This program is affected by the changes instituted in the BS Physics program, wherein Physics 121 is replaced by Physics 126 (Theoretical Mechanics I).

**19. Physics 161 Introduction to Laser Physics and Photonics**

*Justification:* Physics 161 covers the science and technology of generating, controlling, and detecting photons. Contents include lasers and laser applications, optical fibers and optical fiber communications, optical modulators, amplifiers and switches, optical detectors and optoelectronic devices, and photonic crystals and metamaterials. This course complements Physics 170 (Condensed Matter) and App Physics 175 (Materials Physics I) on the topic of characterizing materials.

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**20. Physics 165 Optical Physics I**

*Justification:* Physics 165 covers the core concepts of polarization, interference and diffraction. An in-depth understanding of these concepts is useful in understanding spectroscopy and similar materials characterization methods.

**21. Physics 170 Condensed Matter**

*Justification:* Physics 170 covers all the topics of App Physics 173 (Solid State Physics, 3 u.), and is an apt replacement for the latter.

**D. Change in Course Sequence**

1. Chem 16 and Chem 16.1  
*From:* 1<sup>st</sup> year, 2<sup>nd</sup> sem  
*To:* 1<sup>st</sup> year, 1<sup>st</sup> sem
2. Chem 17 and Chem 17.1  
*From:* 2<sup>nd</sup> year, 2<sup>nd</sup> sem  
*To:* 1<sup>st</sup> year, 2<sup>nd</sup> sem
3. Chem 28 and Chem 28.1  
*From:* 3<sup>rd</sup> year, Midyear Term  
*To:* 2<sup>nd</sup> year, Midyear Term
4. Chem 153  
*From:* 4<sup>th</sup> year, 1<sup>st</sup> sem  
*To:* 3<sup>rd</sup> year, 1<sup>st</sup> sem
5. BIO 11 and BIO 11.1  
*From:* 2<sup>nd</sup> year, 2<sup>nd</sup> sem  
*To:* 1<sup>st</sup> year, Midyear Term
6. App Physics 155  
*From:* 3<sup>rd</sup> year, 2<sup>nd</sup> sem  
*To:* 3<sup>rd</sup> year, 1<sup>st</sup> sem
7. App Physics 181  
*From:* 3<sup>rd</sup> year, 2<sup>nd</sup> sem  
*To:* 2<sup>nd</sup> year, 2<sup>nd</sup> sem
8. Physics 141  
*From:* 3<sup>rd</sup> year, 2<sup>nd</sup> sem  
*To:* 3<sup>rd</sup> year, 1<sup>st</sup> sem
9. Physics 142





From: 4<sup>th</sup> year, 1<sup>st</sup> sem  
To: 3<sup>rd</sup> year, 2<sup>nd</sup> sem

## 10. Physics 191

From: 4<sup>th</sup> year, 1<sup>st</sup> sem  
To: 3<sup>rd</sup> year, 2<sup>nd</sup> sem

## 11. Physics 192

From: 4<sup>th</sup> year, 2<sup>nd</sup> sem  
To: 4<sup>th</sup> year, 1<sup>st</sup> sem

## 12. Physics 161

From: 5<sup>th</sup> year, 1<sup>st</sup> sem  
To: 4<sup>th</sup> year, 2<sup>nd</sup> sem

## 13. Physics 196

From: 5<sup>th</sup> year, 2<sup>nd</sup> sem  
To: 4<sup>th</sup> year, 2<sup>nd</sup> sem

## 14. App Physics 199

From: 5<sup>th</sup> year, 1<sup>st</sup> sem  
To: 4<sup>th</sup> year, 1<sup>st</sup> sem

## 15. App Physics 200

From: 5<sup>th</sup> year, 2<sup>nd</sup> sem  
To: 4<sup>th</sup> year, 2<sup>nd</sup> sem

*Justification:* The resequencing of these courses take into account the reduction in the number of years of the program, along with the earlier time at which the prerequisite courses are satisfied.

## 16. NSTP 1

From: 4<sup>th</sup> year, 1<sup>st</sup> sem  
To: 3<sup>rd</sup> year, 1<sup>st</sup> sem

## 17. NSTP 2

From: 4<sup>th</sup> year, 2<sup>nd</sup> sem  
To: 3<sup>rd</sup> year, 2<sup>nd</sup> sem

## 18. PI 100

From: 5<sup>th</sup> year, 2<sup>nd</sup> sem  
To: 4<sup>th</sup> year, 2<sup>nd</sup> sem

*Justification:* The resequencing of these courses take into account the reduction in the number of years of the program, along with balancing the course load of the students.



**E. Change in Total Number of Units***From:* 176 units*To:* 150 units

*Justification:* The change in the number of units reflects the streamlining of required Physics courses (reduced by 4 u.), as well as a reduction in the number of required GE courses (reduced by 12 u.), and non-Physics science/math required courses (reduced by 7 u.).

	Existing	Proposed	Reduction
GE + PI 100	39	27	12
Sci/Math (sans Physics)	49	42	7
Physics	85	81	4
Total	176	150	26

**F. Change in Number of Years***From:* 5 years*To:* 4 years

*Justification:* The increased preparation of the students coming out of the K12 program, along with the streamlining of Physics courses and the change in the GE framework permits this reduction.

	Existing	Proposed
<b>Fund. Physics (lectures)</b>	19 units in 5 sems	15 units in 3 sems
<b>Fund. Physics (lab) +Exp. Physics (lab)</b>	4 units in 4 sems + 4 units in 2 sems (adv)	2 units in 2 sems +4 units in 2 sems (adv)
<b>Math. Physics (11x)</b>	9 units in 3 sems	10 units in 2 sems
<b>Added</b>		Physics 161 (3 units)
<b>Removed</b>	AP 171, AP 176, Chem 112, MetE 143	essential topics in Phys 160, Phys 170, AP 175





1  
2  
3  
4

## V. Checklist of Existing and Proposed Curriculum

**BACHELOR OF SCIENCE IN APPLIED PHYSICS (MATERIALS PHYSICS)****College of Science**

Approval of Existing Curriculum:

**First Semester, AY 2012-2013****Existing (176 units)**

Proposed date of effectivity:

**First Semester, AY 2018-2019****Proposed (150 units)****FIRST YEAR**

1st Semester	18 units
Math 14*	3
Math 53*	5
Geol 11	3
Geol 11.1	1
GE (AH1) English 10	3
GE (MST1) Physics 10	3
PE	(2)

1st Semester	19 units
Math 21	4
Geol 11	3
Geol 11.1	1
Chem 16	3
Chem 16.1	2
GE 1 KAS 1	3
GE 2 Physics 10	3
PE	(2)

2nd Semester	18 units
Physics 101	4
Physics 101.1	1
Math 54	5
Chem 16	5
GE (AH2) Comm 3	3
PE	(2)

2nd Semester	18 units
Physics 106	5
Physics 106.1	1
Math 22	4
Chem 17	3
Chem 17.1	2
GE 3 ENG 13 / Speech 30	3
PE	(2)

Midyear	0 units
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Midyear	5 units
BIO 11	3
BIO 11.1	2

**SECOND YEAR**

1st Semester	16 units
Physics 102	4
Physics 102.1	1
Physics 111	3
Math 55	3
Chem 17	5
PE	(2)

1st Semester	18 units
Physics 107	5
Physics 107.1	1
Physics 116	5
Math 23	4
Math 122	3
PE	(2)

2nd Semester	16 units
Physics 103	4
Physics 103.1	1
Physics 112	3
Math 121.1	3
BIO 11	5
PE	(2)

2nd Semester	18 units
Physics 108	5
Physics 117	5
Physics 126	4
App Physics 181	4
PE	(2)

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Midyear	5 units
Chem 28	3
Chem 28.1	2

**THIRD YEAR**

1st Semester	17 units
Physics 104	4
Physics 104.1	1
Physics 113	3
Physics 121	3
Physics 131	3
GE (SSP2) Kas 1	3

1st Semester	19 units
Chem 153	3
App Physics 155	4
Physics 131	3
Physics 141	3
GE 4 Soc Sci 1 / Soc Sci 2	3
GE 5 Fil 40	3
NSTP	(3)

2nd Semester	17 units
Physics 132	3
Physics 141	3
App Physics 155	4
App Physics 181	4
Physics 105	3
Midyear	5 units
Chem 28	3
Chem 28.1	2

2nd Semester	16 units
Physics 132	3
Physics 142	3
Physics 165	3
Physics 170	3
Physics 191	4
NSTP	(3)

**FOURTH YEAR**

1st Semester	20 units
Physics 142	3
Physics 191	5
App Physics 173	3
Chem 153	3
Chem 112	3
Met E 143	3
NSTP	(3)

1st Semester	16 units
Physics 192	4
App Physics 175	3
App Physics 199	3
GE 6 Philo 1	3
GE 7 ARTS 1	3

2nd Semester	15 units
Physics 151	3
Physics 192	3
App Physics 171	3
App Physics 175	3
GE (AH)	3
NSTP	(3)

2nd Semester	16 units
Physics 151	3
Physics 161	3
Physics 196	1
App Physics 200	3
PI 100	3
GE 8 DRMAPS / STS 1	3





## FIFTH YEAR

1st Semester	12 units
App Physics 176	3
App Physics 199	3
GE (AH)	
STS	3
GE (SSP)	3

2nd Semester	16 units
Physics 196	1
App Physics 200	3
GE (AH5) Fil 40	3
GE (SSP4) Free Choice	3
GE (SSP5) Free Choice	3
PI 100	3

1st Semester	0 units

2nd Semester	0 units

1. Math 14 and Math 53 are to be taken together provided the student has passed the APE in Math 11. Otherwise the student must take Math 17 in the 1st year/1st semester (in place of Math 14 and Math 53); Math 53 in the 1st year/2nd semester (in place of Math 54); and Math 54 in the immediately following summer session.

Kas 1 & Fil 40 satisfy the 6-unit Philippine Studies requirement

Note: As a requirement for graduation, all students must take six (6) units in one of the National Service Training Program (NSTP) components: Civic Welfare Training Service (CWTS), Literacy Training Service (LTS), and Reserved Officer's Training Corps Military Science (ROTC Mil Sci). These are offered by UPD.

All students required to take Math 21 must have passed any of the following: (1) Pre-Calculus from the STEM or equivalent strand of K-12; (2) the Validation Examination for Math 20 (Pre-Calculus: Functions and their Graphs) administered by the UPD Institute of Mathematics; or (3) Math 20 as a non-credit course

As a requirement for graduation, all students must take six (6) units in one of the National Service Training Program (NSTP) components: Civic Welfare Training Service (CWTS), Literacy Training Service (LTS), and Reserved Officer's Training Corps Military Science (ROTC Mil Sci). These are offered by UPD.

The University regularly reviews course curricula and may revise them. Students admitted into this program shall follow the existing curriculum until such time that a new curriculum replacing it has been duly approved for implementation. All courses prescribed and taken under this existing curriculum shall be credited under the new curriculum.





**BACHELOR OF SCIENCE IN APPLIED PHYSICS  
(MATERIALS PHYSICS)  
College of Science**

UC Approval:  
149<sup>th</sup> UPD UC : 19 June 2018

Date of effectivity:  
1<sup>st</sup> Semester of AY 2018-2019

FIRST YEAR			
1 <sup>st</sup> Semester	19	units	
GE 1 : KAS 1	3		
GE 2 : Physics 10	3		
Math 21	4		
Geol 11	3		
Geol 11.1	1		
Chem 16	3		
Chem 16.1	2		
PE	(2)		
2 <sup>nd</sup> Semester	18	units	
GE 3 : ENG 13/Speech 30	3		
Physics 106	5		
Physics 106.1	1		
Math 22	4		
Chem 17	3		
Chem 17.1	2		
PE	(2)		
Midyear	5	units	
BIO 11	3		
BIO 11.1	2		
SECOND YEAR			
1 <sup>st</sup> Semester	18	units	
Physics 107	5		
Physics 107.1	1		
Physics 116	5		
Math 23	4		
Math 122	3		
PE	(2)		
2 <sup>nd</sup> Semester	18	units	
Physics 108	5		
Physics 117	5		
Physics 126	4		
App Physics 181	4		
PE	(2)		
Midyear	5	units	
Chem 28	3		
Chem 28.1	2		
THIRD YEAR			
1 <sup>st</sup> Semester	19	units	
GE 4 : Soc Sci 1/Soc Sci 2	3		
GE 5 : Fil 40	3		
App Physics 155	4		
Physics 131	3		
Physics 141	3		
Chem 153	3		
NSTP	(3)		
2 <sup>nd</sup> Semester	16	units	
Physics 132	3		
Physics 142	3		
Physics 165	3		
Physics 170	3		
Physics 191	4		
NSTP	(3)		
FOURTH YEAR			
1 <sup>st</sup> Semester	16	units	
GE 6 : Philo 1	3		
GE 7 : ARTS 1	3		
Physics 192	4		
App Physics 175	3		
App Physics 199	3		
2 <sup>nd</sup> Semester	16	units	
GE 8 : DRMAPS/STS 1	3		
Physics 151	3		
Physics 161	3		
Physics 196	1		
App Physics 200	3		
PI 100	3		
TOTAL		150	units

**NOTES:**

All students required to take Math 21 must have passed any of the following:

- (1) Pre-Calculus from the STEM or equivalent strand of K-12;
- (2) the Validation Examination for Math 20 (Pre-Calculus: Functions and their Graphs) administered by the UPD Institute of Mathematics; or
- (3) Math 20 as a non-credit course.

As a requirement for graduation, all students must take six (6) units in one of the National Service Training Program (NSTP) components: Civic Welfare Training Service (CWTS), Literacy Training Service (LTS), and Reserved Officer's Training Corps Military Science (ROTC Mill Sci). These are offered by UPD.

The University regularly reviews course curricula and may revise them. Students admitted into this program shall follow the existing curriculum until such time that a new curriculum replacing it has been duly approved for implementation. All courses prescribed and taken under this existing curriculum shall be credited under the new curriculum.

