

## CHED OBE-MF-02 INSTRUCTIONS FOR COMPLETION

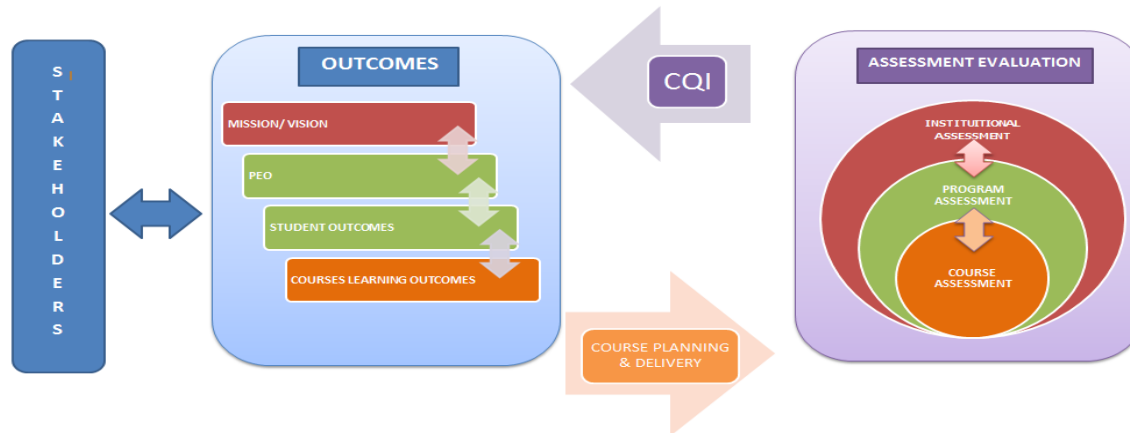
1. Complete this CHED OBE-MF-02 for **EACH** engineering program you are offering.
2. Begin by clicking the OBE Framework Worksheet and follow the written instructions
3. Click the Basic Program Info Worksheet Tab below and secure a copy of the evaluated OBE-MF-01 as guide to possible needed revisions.
4. Fill out the basic information required of the institution. You may copy and paste previous data from the evaluated OBE-MF-01 if it still applicable.
5. For the part about the Institutional and Mission and Vision statements and the Program Educational Objectives, you may maintain or edit previously submitted based on any comments on the evaluated OBE-MF-01.
  
6. As with the case of IMV and PEOs, you may edit or add to previously submitted program outcomes in OBE-MF-01 based on the comments of the evaluator. Bear in mind however that any change in the codes for the program outcomes must also be reflected in the curriculum map. Delete any extra row in the worksheet without program outcomes.
7. After completing the Programs Outcomes worksheet, click the Curriculum Map Tab. Make any necessary changes from the previously submitted map as suggested by the evaluator or copy and paste previous map if no changes will be made.
8. Go to the OBTL Info Sheet. Prepare the Required Sheets by completing the pertinent Annex Worksheet Templates (Still to be Prepared and Sent to the HEIs)
9. Go to the PO-PI-KC-AM-EM-ST Matrix Sheet. Complete the table based on your own program implementation.
10. Go to the CQI Info Sheet. Prepare the Required Sheets by completing the pertinent Annex Worksheet Templates (Still to be Prepared and Sent to the HEIs)

**11.** Finally, click the Transmittal Sheet Tab and fill out the needed information. The worksheets should be saved using two file formats (one Excel, the other pdf): XXXXX-YYY-OBE-MF-02.xls or .xlsx and .pdf where XXXXX is the acronym of the institution, and YYY is the program acronym (e.g. UST-ChE-OBE-MF-02.xls or .xlsx and UST-ChE-OBE-MF-02.pdf). Both files should be uploaded using the appropriate link located at [www.ched-tpet.org](http://www.ched-tpet.org).

## OBE Framework

Use this space to show a figure representing your OBE Framework for the Program.

Use this space to give a short description



	Comments By Evaluator
n of your OBE Framework	

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## Program Outcomes

The graduates of the program shall be able to:

<b>a</b>	Apply knowledge of mathematics, physical sciences, engineering sciences to the practice of aeronautical engineering.
<b>b</b>	Design and conduct experiments to test hypotheses and verify assumptions, as well as to analyze and interpret data and to simulate processes.
<b>c</b>	Design, improve, innovate, and to supervise systems or processes to meet desired needs within realistic constraints.
<b>d</b>	Work effectively in multi-disciplinary and multi-cultural teams in diverse fields of practice.
<b>e</b>	Identify, formulate, and solve aeronautical engineering problems.
<b>f</b>	Understand the effects and impact of the aeronautical engineering profession on the environment and the society, as well as the social and ethical responsibilities of the profession.
<b>g</b>	The specialized knowledge in at least one field of aeronautical engineering practice, and the ability to apply such knowledge to provide solutions to actual problems.
<b>h</b>	Effectively communicate orally and in written form particularly in the English language.
<b>i</b>	Engage in life-long learning and to keep current of the development in a specific field of specialization.
<b>j</b>	Use the appropriate techniques, skills and tools necessary for the practice of aeronautical engineering.
<b>k</b>	Acquire a thorough knowledge of contemporary issues.
<b>l</b>	Knowledge and understanding of engineering and management principles as a member and leader in a team, to manage projects and in multidisciplinary environments.
<b>m</b>	Apply acquired aeronautical engineering knowledge and skills for national development.
<b>n</b>	
<b>o</b>	
<b>p</b>	
<b>q</b>	
<b>r</b>	

**NOTE: Please delete any extra outcome row**



Basic Program Information					
Name of Institution				Region	
Address					
Head of Institution			Head of College		
Program Name			CHED Program Status		
Program Head			Contact Number		
E-mail Address 1			E-mail Address 2		
AVERAGE ANNUAL STUDENT ENROLMENT DATA					
Academic Year	First Year	Second Year	Third Year	Fourth Year	Fifth Year
	1st Sem, 2nd Sem	1st Sem, 2nd Sem	1st Sem, 2nd Sem	1st Sem, 2nd Sem	1st Sem, 2nd Sem
2012-2013					
2013-2014					
2014-2015					
2015-2016					
Institutional Mission.Vision Statement					

Vision: .  
Mission:

College Mission Vision Statement
VISION: MISSION:

**Program Educational Objectives**

SAMPLE ONLY-----To produce competitive graduates practicing professional aeronautical engineering career and assume leading roles in the technological and socio-economic development of both local and foreign Aviation Industry, particularly in the areas of aircraft research, development, manufacturing, maintenance, operation, and aviation education. Aside from their professional knowledge and skills, the graduates must also possess strong foundation in the physical and basic engineering sciences as well as in human relations to enable them to meet the challenges being brought about by the rapid technological progress in Aeronautics.





**Comments By Evaluator**

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**Comments By Evaluator**

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**Comments By Evaluator**

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**Comments By Evaluator**

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**UNIVERSITY OF PERPETUAL HELP SYSTEM DELTA Las Piñas Campus**

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 Cert. No. 3

**Curriculum Map**

Code	Mathematics	Units	a	b	c	d	e	f	g	h	i	j	k	l	m
M-01	College Algebra	3	I				E		I	E					
M-02	Advanced Algebra	2	I				E		I	E					
M-03	Plane & Spherical Trigonometry	3	I				E		I	E					
M-04	Analytic Geometry	3	I				E		I	E					
M-05	Solid Mensuration	2	I				E		I	E					
M-06	Differential Calculus	4	I				E		I	E					
M-07	Integral Calculus	4	I				E		I	E					
M-08	Differential Equations	3	I				E		I	E					
M-09	Probability & Statistics	3	I	I			E		I	E		E			

Code	Natural/Physical Sciences	Units	a	b	c	d	e	f	g	h	i	j	k	l	m
S-01	General and Inorganic Chemistry 1 - Lec	3	I				E		I	E					
L-01	General and Inorganic Chemistry 1 - Lab	1	I	E						E		E			
S-02	College Physics 1 - Lec	3	I				E		I	E					
L-02	College Physics 1 - Lab	1	I	E						E		E			
S-03	College Physics 2 - Lec	3	I				E		I	E					
L-03	College Physics 2 - Lab	1	I	E						E		E			

Code	Basic Engineering Sciences	Units	a	b	c	d	e	f	g	h	i	j	k	l	m
E-01	Engineering Drawing 1	1	I		I	I	E		I	E		I			
E-02	Computer Fundamentals & Programming - Lab	2	I	E	I		E		I	E		E			
E-03	Computer Aided Drafting	1	I	E	E	I			I	E		E			

E-04	Statics of Rigid Bodies	3	E		I		E		I	E					
E-05	Dynamics of Rigid Bodies	2	E		I		E		I	E					
E-06	Mechanics of Deformable Bodies	3	E		I		E		I	E					
E-07	Engineering Economy	3	E	I	I	I	E	I	I	E	I	I		E	E
E-08	Engineering Management	3			I		E	I	I	E	I	I		E	E
E-09	Environmental Engineering	3	I		I		E	I	I	E	I	I		E	E
E-10	Safety Management	1			E	I	E	I	I	E	I	E		E	E

Code	Allied Courses	Units	a	b	c	d	e	f	g	h	i	j	k	l	m
A-01	Thermodynamics 1	3	E				E		I	E					
A-02	Elementary Electrical Engineering - Lec	3	E				E		I	E					
A-03	Electronics 1 (Electronics Circuits & Devices) - Lec	3	E				E		I	E					

Code	Professional Courses	Units	a	b	c	d	e	f	g	h	i	j	k	l	m
P-01	Advanced Engineering Mathematics for Aeronautical Engineer	3	I				E		I	E		I			
P-02	Aircraft Materials and Processes	3	E				E		I	E		I	I		
P-03	Airframe Construction and Repair - Lec	2	E	I			E	I	I	E		E			
P-04	Airframe Construction and Repair - Lab	2	D	D	D		D	I	I	E					
P-05	Fundamentals of Aerodynamics	5	E	I			E		I	E					
P-06	Applied Subsonic Aerodynamics	5	E	I			E		I	E		E			
P-07	Applied Supersonic Aerodynamics	5	E	I			E		I	E		E			
P-08	Research Methods and Applications	2	D	D					I	E		E	I	E	D
P-09	Aircraft Systems	4	E				E		I	E		E			
P-10	Operation Engineering	4	E	I			E	I	I	E		E	E	E	
P-11	Reliability Engineering	3	E	I			E	I	I	E		E		E	D
P-12	Aeronautical Laboratory - Lec	1					E		E	E		D			
P-13	Aeronautical Laboratory - Lab	2													
P-14	Aircraft Avionics	4	I		I		E		I	E			I		
P-15	Air Laws and Regulations	3						E	I	E	I	I	E		

P-16	Aircraft Maintenance and Inspection - Lec	3	E			I	E	I	I	E		E			
P-17	Aircraft Maintenance and Inspection - Lab	1													
P-18	Aviation Safety	2		E				E	I	E	I	E	E	E	E
P-19	Aerodrome Engineering and Management	3					E	I	I	E	I	E	I	E	
P-20	Aircraft Structures 1	5	E				E		I	E					
P-21	Aircraft Structures 2	5	E				E		I	E					
P-22	Basic Helicopter and Propeller Design	3	D	D	D		D		I	E		D			D

P-23	Aircraft Design 1 - Lec	3	D	D	D		D		I	E		D			D	
P-24	Aircraft Design 1 - Lab	2	D	D	D		D		I	E		D			D	
P-25	Aircraft Design 2 - Lec	3	D	D	D		D		I	E		D			D	
P-26	Aircraft Design 2 - Lab	2	D	D	D		D		I	E		D			D	
P-27	Air Transportation Economics and Management	3	E				E	E	I	E	I	E	I	E		
P-28	Reciprocating Engines - Lec	4	E				E		I	E		E				
P-29	Reciprocating Engines - Lab	1	E				E		I	E		E				
P-30	Gas Turbine Engines - Lec	4	E				E		I	E		E				
P-31	Gas Turbine Engines - Lab	1	E				E		I	E		E				
P-32	Computer Aided Drafting and Design 1 - Lec	2		I	E		E		I	E	I					
P-33	Computer Aided Drafting and Design 1 - Lab	1		I	E		E		I	E	I					
P-34	Computer Aided Drafting and Design 2 - Lec	2		I	E		E		I	E	I					
P-35	Computer Aided Drafting and Design 2 - Lab	1		I	E		E		I	E	I					
P-36	AERO Special Topics 1	3	E				E	I		I	I	I	E			
P-37	AERO Special Topics 2	3	E				E	I		I	I	I	E			
P-38	Rocket Engines	3	E						I	E		E				
P-39	Home-built Aircraft	3			D	I	E		I	E		D	E		D	
P-40	Project Feasibility Study	3	I	I	D				I	I	E	I	E	E	E	D

Code	Non-Technical Courses		a	b	c	d	e	f	g	h	i	j	k	l	m
N-01	Sociology	3				I		I		I	I	I	I	I	I
N-02	Philosophy of Man	3				I		I		I	I	I	I	I	I
N-03	Logic	3				I		I		I	I	I	I	I	I
N-04	Politics and Governance with Philippine Constitution	3				I		I		I	I	I	I	I	I
N-05	Arts Appreciation	3				I		I		I	I	I	I	I	I
N-06	General Psychology	3				I		I		E	I		I	I	
N-07	Communication Arts 1	3				I		I		I	I	I	I	I	I
N-08	Communication Arts 2	3				I		I		I	I	I	I	I	I
N-09	Technical Writing	3				I		I		I	I	I	I	I	I
N-10	Speech and Oral Communication	3				I		I		I	I	I	I	I	I
N-11	English for the Profession	3				I		I		I	I	I	I	I	I

N-12	Komunikasyon sa Akademikong Filipino	3				I		I		E	I	E	I	E	E
N-13	Pagbasa at Pagsulat Tungo sa Pananaliksik	3				I		I		E	I	E	I	E	E
N-14	The Life and Works of Dr. Jose Rizal	3				I		I		I	I	I	I	I	I
N-15	Foundation of Physical Education	2				I									
N-16	Social Dances	2				I									
N-17	Individual/Dual Sports	2				I									
N-18	Team Sports	2				I									
N-19	National Service Training Program 1	3				I				I			I		
N-20	National Service Training Program 2	3				I				I			I		

Code	Institutional Courses	Units	a	b	c	d	e	f	g	h	i	j	k	l	m
I-01	The Perpetualite: Identity and Dignity as a Man of God	2				I		I		I	I	I	I	I	I
I-02	The Perpetualite: Called to Perfection to be a Man for Others	2				I		I		I	I	I	I	I	I
I-03	The Perpetualite: Called to Perfection	2				I		I		I	I	I	I	I	I
I-04	The Perpetualite: Man for Others	2				I		I		I	I	I	I	I	I







n	o	p	q	r

n	o	p	q	r

n	o	p	q	r








<b>n</b>	<b>o</b>	<b>p</b>	<b>q</b>	<b>r</b>



<b>Map Legend</b>	
<b>Code</b>	<b>Course Classification</b>
<b>M-XX</b>	<b>Mathematics</b>
<b>S-XX</b>	<b>Natural or Physical Science</b>
<b>L-XX</b>	<b>Laboratory Course</b>
<b>E-XX</b>	<b>Engineering Science</b>
<b>A-XX</b>	<b>Allied</b>
<b>P-XX</b>	<b>Professional</b>
<b>N-XX</b>	<b>Non-Technical</b>
<b>I-XX</b>	<b>Institutional</b>
<b>Note:</b>	<b>Please delete any extra outcome column</b>

<b>Code</b>	<b>Descriptor</b>
<b>I</b>	<b>Introductory Course</b>
<b>E</b>	<b>Enabling Course</b>
<b>D</b>	<b>Demonstrative Course</b>
<b>Code</b>	<b>Definition</b>
<b>I</b>	<b>An introductory course to an outcome</b>
<b>E</b>	<b>A course that strengthens the outcome</b>
<b>D</b>	<b>A course demonstrating an outcome</b>

<b>Comments by Evaluator</b>















### Curriculum Map

Code	Mathematics	Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
M-01	Mathematics for Engineers	3	I				E		I			I			E					
M-02	Calculus 1	3	I				E		I			I			E					
M-03	Calculus 2	3	I				E		I			I			E					
M-04	Differential Equation	3	I				E		I			I			E					
M-05	Engineering Data Analysis	3	I	I			E		I			E			E					

Code	Natural/Physical Sciences	Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
S-01	Chemistry for Engineers - Lec	3	I	E	I		E		I			E			E					
L-01	Chemistry for Engineers - Lab	1	I	E	I		E		I											
S-02	Physics 1 for Engineers - Lec	3	I	E	I		E		I			E			E					
L-02	Physics 1 for Engineers - Lab	1	I	E	I		E		I											
S-03	Physics 2 for Engineers - Lec	3	I	E	I		E		I			E			E					
L-03	Physics 2 for Engineers - Lab	1	I	E	I		E		I											

Code	Basic Engineering Sciences	Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
E-01	Engineering Drawing and Plans	1	I		I				I			I			E					
E-02	Computer Fundamentals & Programming	1	I	I	E		I		I			I			E					
E-03	Computer Aided Drafting and Design 1	1	I	I	E		E		I			E			E					
E-04	Computer Aided Drafting and Design 2	1	I	I	E		E		I			E			E					
E-05	Statics of Rigid Bodies	3	I		I		E		I			E			E					
E-06	Dynamics of Rigid Bodies	2	I		I		E		I			E			E					
E-07	Mechanics of Deformable Bodies	3	I		I		E		I			E			E					
E-08	Engineering Economics	3	I		I	I	E	I	I			E	E	I	E					
E-09	Engineering Management	3	I		I	I	E	I	I	I		E	E	E	E					
E-10	Environmental Science	3			I	E	E	E	I	I		E	E	I	E					
E-11	Strategic Operation and Supply Chain Management	2	I	E	I	I	E		I			E	E	E	E					
E-12	Human Factors and Aviation Safety	3			I	E		E	I	E		E	E	E	E					
E-13	Technopreneurship	3	E	E	I	E	E	I	E	E	I	E	E	E	E					
E-14	Entrepreneurial Mind	3	I	E	I	I	E		I			E	E	E	E					
E-15	Living in the IT Era- Lec	2	I	I	E		E		I			E			E					
E-16	Living in the IT Era- Lab	1	I	I	E		E		I			E			E					

Code	Allied Courses	Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
A-01	Elementary Electrical Engineering (AC/DC)	3	E	E	E		E		E			E			E					
A-02	Basic Thermodynamics	3	E	E	E		E		E			E			E					
A-03	Basic Electronics	3	E	E	E		E		E			E			E					

Code	Professional Courses	Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r
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P-01	Aircraft Materials, Construction and Repair- Lec	2	I		E	E	E		E			E			E				
P-02	Aircraft Materials, Construction and Repair- Lab	1	I		E	E	E		E			E			E				
P-03	Civil Air Laws and Regulations	3				E	E	E	I	E	I	E	E	E	D				
P-04	Aerodynamics 1	4	D	E	E		E		E			D			E				
P-05	Aerodynamics 2	4	D	E	E		E		E			D			E				
P-06	Aerodynamics 3	4	D	E	E		E		E			D			E				
P-07	Powerplant 1 - Lec	3	E	E	E		E		E			D			E				
P-08	Powerplant 1 - Lab	1	D	E	E		E		E			D			E				
P-09	Powerplant 2 - Lec	3	E	E	E		E		E			D			E				
P-10	Powerplant 2 - Lab	1	D	E	E		E		E			D			E				
P-11	Aircraft Avionics and Autopilot System	3	E	E	E		E		E			E			E				
P-12	Aircraft Systems - Lec	2	E	E	E		E		E			E			E				
P-13	Aircraft Systems - Lab	1	D	E	E		E		E			D			E				
P-14	Research Methods and Applications - Lec	2	E	E	E	E	E	I	E	E		E	I	I	E				
P-15	Research Methods and Applications - Lab	1	E	E	E	E	E	I	E	E		E	I	I	E				
P-16	Aircraft Structures 1	3	E	E	E		E		E			D			E				
P-17	Aircraft Structures 2	3	E	E	E		E		E			D			E				
P-18	Basic Helicopter and Propeller Design - Lec	2	D	D	D		E		E			D			D				
P-19	Basic Helicopter and Propeller Design - Lab	1	D	D	D		E		E			D			D				
P-20	Aircraft Design 1 - Lec	4	D	D	D		E		E			D			D				
P-21	Aircraft Design 1 - Lab	1	D	D	D		E		E			D			D				

P-22	Aircraft Design 2 - Lec	4	D	D	D		E		E			D			D					
P-23	Aircraft Design 2 - Lab	1	D	D	D		E		E			D			D					
P-24	Unmanned Aerial System Design - Lec	1	D	D	D		E		E			D			D					
P-25	Unmanned Aerial System Design - Lab	1	D	D	D		E		E			D			D					
P-26	Aerodrome Engineering and Management	2	E	E	E	I	E	I	E	E		E	E	E	E					
P-27	Aeronautical Laboratory 1	1	E	D	E	I	E		E			E			E					
P-28	Aeronautical Laboratory 2	1	E	D	E	I	E		E			E			E					
P-29	Air Transport Economics and Management	2	E		E	E	E		E	E		E	E	E	D					
P-30	Reliability Engineering	3	E		E	E	E	I	E	E		E	E	I	D					
P-31	Aircraft Production, Maintenance, Planning & Control	3	E		I	E	E	I	E	E		D	E	E	D					
P-32	Aeronautical Engineering Special Problems 1	3	E				E	I		I	I	I	E							
P-33	Aeronautical Engineering Special Problems 2	3	E				E	I		I	I	I	E							
P-34	Introduction to Aeronautical Engineering	3					E	E	E	E	I	E	E	I						
P-35	Rocket Propulsion System	3	E						I	E		E								
P-36	Project Feasibility Study	3	I	I	D			I	I	E	I	E	E	E	D					
P-37	Aviation Business Laws, Contracts & Patents	3				E	E	E	I	E	I	E	E	E	D					
P-38	Aeronautical Engineering Practice (OJT)	3	D	D	D	D	D	E	E	D		D	E	D	D					

Code	Non-Technical Courses		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	
N-01	Arts Appreciation	3				I		I		I	I	I	I	I	I						
N-02	Ethics	3				I		E	I	I	E	E	E	E	E						
N-03	Mathematics in the Modern World	3	I	I			E		I			I			E						
N-04	Readings in Philippine History	3				I		I		I	I	I	I	I	I						
N-05	Purposive Communication	3				I															
N-06	Science, Technology, and Society	3				I		I	I	I	I	I	I	I	I						
N-07	The Contemporary World	3				I		I		I	I	I	I	I	I						
N-08	Understanding the Self	3				I		I		I	I	I	I	I	I						
N-09	Komunikasyon sa Akademikong Filipino	3				I		I		E	I	E	I	E	E						
N-10	Pagbasa at Pagsulat Tungo sa Pananaliksik	3				I		I		E	I	E	I	E	E						
N-11	Kontekstwalisadong Komunikasyon sa Filipino	3				I		I		E	I	E	I	E	E						
N-12	English for the Profession	3				I		I		I	I	I	I	I	I						
N-13	The Life and Works of Rizal	3				I		I		I	I	I	I	I	I						
N-14	Foundation of Physical Education	2				I															
N-15	Rhythmic Activities	2				I															
N-16	Individual/ Dual Sport	2				I															
N-17	Team Sports	2				I															
N-18	National Service Training Program 1	3				I				I				I							
N-19	National Service Training Program 2	3				I				I				I							

Code	Institutional Courses	Units	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	
I-01	The Perpetualite: Identity and Dignity	2				I		I		I	I	I	I	I	I						
I-02	The Perpetualite: A Man of God	2				I		I		I	I	I	I	I	I						
I-03	The Perpetualite: Called to Perfection	2				I		I		I	I	I	I	I	I						
I-04	The Perpetualite: A Man of Others	2				I		I		I	I	I	I	I	I						
I-05	The Perpetualite: A Filipino Christian Leader	2				I		I		I	I	I	I	I	I						
I-06	The Perpetualite: A Minister of Life	2				I		I		I	I	I	I	I	I						
I-07	The Perpetualite: A Character and Nation Builder	2				I		I		I	I	I	I	I	I						
I-08	The Perpetualite: A Helper of God	2				I		I		I	I	I	I	I	I						





<b>Map Legend</b>	
<b>Code</b>	<b>Course Classification</b>
M-XX	Mathematics
S-XX	Natural or Physical Science
L-XX	Laboratory Course
E-XX	Engineering Science
A-XX	Allied

<b>Code</b>	<b>Descriptor</b>
I	Introductory Course
E	Enabling Course
D	Demonstrative Course
<b>Code</b>	<b>Definition</b>
I	An introductory course to an outcome
E	A course that strengthens the outcome
D	A course demonstrating an outcome

<b>Comments by Evaluator</b>







# BACHELOR OF SCIENCE

## **COURSE PRE-REQ**

FIFTH YEAR	2ND SEM	P-07 A-04 E-08				P-11 P-10 P-16		P-26 E-08 E-09 P-02		
	1ST SEM	P-02 E-08 E-09 E-10				P-08 5th Year only		P-10 P-20 P-05 P36 P-01		
Summer : P-03 fo										
FOURTH YEAR	2ND SEM	P-05 P-04 P-20 P-01				P-15 E-06 E-05		P-21 P-20 P-01		
	1ST SEM	P-04 P-24 P-01				P-20 P-24		P-29 4th Year Standing Only		
THIRD YEAR	2ND SEM	M-09 M-08				N-01		N-03		N-08
	1ST SEM	M-08 M-07				N-05		N-06		N-07
SECOND YEAR	2ND SEM	M-07 M-06				N-12		N-17		
	1ST SEM	M-06 M-04 M-05				S-03 L-03 S-02 L-02		E-02		N-11
FIRST YEAR	2ND SEM	M-02 M-01				M-04 M-01 M-03		M-05 M-01 M-03		
	1ST SEM	M-01				M-03		S-01 L-01		

<b>Comments by Evaluator</b>

# IN AERONAUTICAL ENGINEERING

## QUISITE MAP (AERO)

P-27			P-28		P-31					
P-29	Graduating		P-25	P-10	P-30	P-25				
P-16				P-25		A-05				
P-15	P-01	E-06	E-05	P-15		5th Year only				
or 4th Year Standing Only										
P-23			P-30		P-36		E-08			
P-20	P-35	P-01	P-35	P-01	P-35	E-10	E-09	I-04		
P-34	A-04	P-35		E-09		E-10		N-04		
4th Year Standing		E-03		4TH YEAR STANDING		4th Year				
P-01	P-24		E-05		E-06		E-07			
M-08	M-07	S-03	E-04		E-04					
N-13	I-03	A-01		A-03		E-03		E-04		
		M-07	S-03	A-02		E-02	E-01	S-03		
A-02		P-12			P-13		P-17		P-19	
S-03	M-06	P-18	P-33	P-14	P-33	P-32	P-33	P-32	P-18	P-14
N-16		P-14		P-18	P-33					
		P-22		P-22		S-02		P-22		
S-02 L-02										
M-01		M-03								
E-01										





<b><i>COLOR CODE</i></b>
<b>SUBJECT</b>
<b>PRE-REQUISITE</b>



## **LEGEND**

<b>YEAR</b>	<b>SEMESTER</b>	<b>CODE</b>	<b>SUBJECT</b>
<b>F I R S T Y E A R</b>	<b>1ST SEM</b>	M-01	COLLEGE ALGEBRA
		M-03	PLANE AND SPHERICAL TRIGONOMETRY
		S-01   L-01	GENERAL CHEMISTRY
		E-01	ENGINEERING DRAWING
	<b>2ND SEM</b>	M-02	ADVANCE ALGEBRA
		M-04	ANALYTIC GEOMETRY
		M-05	SOLID MENSURATION
		S-02   L-02	PHYSICS 1
<b>S E C O N D Y E A R</b>	<b>1ST SEM</b>	M-06	DIFFERENTIAL CALCULUS
		S-03   L-03	PHYSICS 2
		E-02	COMPUTER FUNDAMENTALS AND PROGRAMMING
	<b>2ND SEM</b>	M-07	INTEGRAL CALCULUS
		M-09	PROBABILITY AND STATISTICS
		A-02	ELEMENTARY ELECTRICAL ENGINEERING
		P-11	AIRCRAFT MATERIALS AND PROCESSES
	<b>T H I R D Y E A R</b>	<b>1ST SEM</b>	M-08
E-04			STATISTICS AND RIGID BODIES
A-01			THERMODYNAMICS
E-07			ENGINEERING ECONOMICS
E-03			COMPUTER AIDED DRAFTING
A-03			BASIC ELECTRONICS
E-09			ENVIRONMENTAL ENGINEERING
E-10			AVIATION SAFETY MANAGEMENT
<b>2ND SEM</b>		P-27	RECIPROCATING ENGINES
		P-20	FUNDAMENTALS OF AERODYNAMICS
		P-15	AIRFRAME CONSTRUCTION AND REPAIR
		P-01	ADVANCE ENGINEERING MATHEMATICS
		E-05	DYNAMICS OF RIGID BODIES
		E-06	MECHANICS OF DEFORMABLE BODIES

<b>F O U R T H - Y E A R</b>	<b>1ST SEM</b>	<b>E-04</b>	<b>AERONAUTICAL LABORATORY</b>
		<b>E-16</b>	<b>APPLIED SUBSONIC AERODYNAMICS</b>
		<b>E-14</b>	<b>AIRCRAFT SYSTEMS</b>
		<b>E-05</b>	<b>AIR LAWS AND REGULATIONS</b>
		<b>E-08</b>	<b>ENGINEERING MANAGEMENT</b>
		<b>P-29</b>	<b>COMPUTER AIDED DRAFTING AND DESIGN</b>
	<b>2ND SEM</b>	<b>P-10</b>	<b>AIRCRAFT MAINTENANCE INSPECTION</b>
		<b>P-17</b>	<b>APPLIED SUPERSONIC AERODYNAMICS</b>
		<b>P-12</b>	<b>AIRCRAFT STRUCTURES 1</b>
		<b>P-30</b>	<b>COMPUTER AIDED DRAFTING AND DESIGN</b>
<b>P-28</b>		<b>GAS TURBINE ENGINE</b>	
<b>F I F T H - Y E A R</b>	<b>1ST SEM</b>	<b>P-19</b>	<b>BASIC HELICOPTER AND PROPELLER DESIGN</b>
		<b>P-07</b>	<b>AIRCRAFT AVIONICS</b>
		<b>P-25</b>	<b>RESEARCH METHODS AND APPLICATIONS</b>
		<b>P-08</b>	<b>AIRCRAFT DESIGN 1</b>
		<b>P-13</b>	<b>AIRCRAFT STRUCTURES 2</b>
		<b>P-02</b>	<b>AERODROME ENGINEERING AND MANAGEMENT</b>
	<b>2ND SEM</b>	<b>P-18</b>	<b>AVIATION SAFETY</b>
		<b>P-09</b>	<b>AIRCRAFT DESIGN 2</b>
		<b>P-06</b>	<b>AIR TRANSPORT ECONOMICS AND MANAGEMENT</b>
		<b>P-24</b>	<b>RELIABILITY ENGINEERING</b>
		<b>P-22</b>	<b>OPERATION ENGINEERING</b>
<b>P-23</b>		<b>TECHNICAL ELECTIVE</b>	

### Outcomes-Based Teaching and Learning Delivery Checklist

#	Document	Annex	Evaluator's Comments
1	Program of Study by Term	A	
2	OBTL Framework and Short Description	B	
3	OBTL -Based Syllabus Template	C	
4	Course Assessment/Evaluation System	D	
5	Faculty Qualifications Sheet	E	
6	Faculty Loading Sheet Per Term	F	
7	Faculty Classification/Evaluation System	G	
8	Classroom Facilities Sheet	H	
9	Laboratory Facilities Sheet	I	
10	Computing Facilities Sheet	J	
11	Learning Resources Sheet	K	
12	Faculty Development Support Sheet	L	
13	Student Development Support Sheet	M	

**Program Outcomes - Performance Indicators - Assessment Evaluation Methods-Standards Matrix**

PO Code	PO Statement	Performance Indicators (PI)	Codes of Key Course(s) for the PI(s)		Assessment Methods		
			Formative	Summative	A1	A2	A3
a	Apply knowledge of mathematics, physical sciences, engineering sciences to the practice of aeronautical engineering.	1. Apply mathematics in solving aircraft design fundamentals, structural loading, engineering economy, fundamentals of low/high speed aerodynamics, aircraft performance.	M-01 to M-09 ; P-01	P-03 to P-05, P-06 to P-21, P-23, P-24, P-25	Problem Set, Written Exam	Laboratory Experiments, Problem Set, Written Exam	Problem Set, Written Exam
		2. Integrate scientific and engineering principles in chemistry by formulating unique ways of constructing, modifying and repairing aircraft parts and making propellant for aircraft rocketry	S-01 and L-01	P-14 , P-30			
		3. Apply Physics principles in solving Rocket propulsion, aerodynamics problems and analysis of structures.	S-02 to S-03 and L-02 to L-03	P-10, P-11, P-15, P-16, P-23, P-30 to P-33			
b	Design and conduct experiments to test hypotheses and verify assumptions, as well as to analyze and interpret data and to simulate processes.	1. Analyze data using probability statistics and appropriate analytical tools (Minitab) for aeronautical research and design problems.	M-09	P-10, P-11, P-23, P-25, P-27, P-29, P-34	Research and Aircraft Design Paper	Laboratory Experiments and Technical Research Paper.	
		2. Validate data to perform air flow visualization and free-stream turbulence in a wind tunnel experiment.	P-20, P-21, P-24	P-04, P-05,			
c	Design, improve, innovate, and supervise systems or processes to meet desired needs within realistic constraints.	1. Utilize the principles of mechanics and computer aided drafting to design aircraft external/internal structural system.	E-01 to E-06, P-35, P-36	P-10, P-11, P-15, P-16, P-17, P-18, P-19, P-23, P-25	Wing Rib Model, Technical Reports	Feasibility Study	
		2. Produce a feasible and economical aircraft systems compliant with safety and environmental concerns.	E-07 to E-10	07, P-14, P-17, -22, P-25, P-2			
d	Work effectively in multi-disciplinary and multi-cultural teams in diverse fields of practice.	1. Value other's perspective by listening to aeronautical related research group.	N-01 to N-12, E-10	P-27, P-29, P-34	Research Paper	Research Paper	Research Paper
		2. Contribute relevant theories, knowledge and ideas that will promote higher order-thinking in a group.	N-01 to N-12	P-26 to P-29			
		3. Collaborate with the team by taking full responsibility as a member/leader of a aeronautical related research group.	N-01 to N-12	P-26 to P-29			
e	Identify, formulate, and solve aeronautical engineering problems.	1. Manipulate data using mathematical techniques in solving problems involving standard atmosphere, incompressible and compressible flow, piston and jet engine efficiency, weight and balance, and stress concentration on aircraft structures.	M-01 to M-09	P-04, P-05, P-10 to P-21, P-23 to P-26, P-30 to P-34	Quiz, Written Exams, Board work	Quiz, Written Exams, Board work	Quiz, Written Exams, Board work
		2. Formulate accurate and systematic solution in solving airplane performance, reliability, flight loads and stability and control problems.	M-01 to M-09, S-01 to S-03, E-04 to E-06	P-15 to P-21, P-24 to P-26			
		3. Integrate thermodynamics and electronics in powerplant analysis, compressible flows, shock wave formation and effects problems.	A-01 to A-03	P-13, P-21, P-30, P-31,			
f	Understand the effects and impact of the aeronautical engineering profession on the environment and the society, as well as the social and ethical responsibilities of the profession.	1. Apply knowledge of a professional code of ethics in dealing with the public, state, clients, colleagues and profession in Aeronautical Engineering practice (OJT) and conducting feasibility study.	P-06,	P-03, P-27	Accomplishment Reports, Portfolio, Company Performance Monitoring Form, Feasibility study	Project (Aerodrome and Airport Layout)	Practical Exam, Survey and Questionnaires
		2. Consider environmental, management, operational, reliability engineering and aviation safety in familiarizing the details of Aerodrome Planning and Construction.	E-08 to E-10, P-22, P-26, P-28	P-02			
		3. Perform aircraft maintenance and inspection taking responsibility to the safety of the society.	P-06,	P-12, P-13			

<b>g</b>	Apply specialized knowledge in at least one field of aeronautical engineering practice, and the ability to provide solutions to actual problems.	1. Practice different techniques on how to solve aeronautical engineering problems on actual scenarios.	M-01 to M-09, S-01 to S-03, E-01 to E-10, A-01 to A-03, P-01 to P-30	P-03	Problem Set, Boardwork, Written Exam	Problem Set, Boardwork, Written Exam	
		2. Manipulate different data gathered from diverse situations in resolving complex engineering problems happening in real life.	M-01 to M-09, S-01 to S-03, E-01 to E-10, A-01 to A-03, P-01 to P-30	P-03			
<b>h</b>	Effectively communicate orally and in written form particularly in the English language.	1. Recognize when to speak and use appropriate technical terminology with airmen and common terms with non-aeronautical individual.	N-07 to N-12	M-01 to M-09, S-01 to S-03, E-01 to E-10, A-01 to A-03, P-01 to P-30	Peer/Supervisor's Evaluation (OJT), Technical Paper	Case Study, Aircraft Design Paper, Feasibility and Research Paper	Oral Presentation, Problem Sets
		2. Provide content that is factually correct, supported with evidence, explained with sufficient detail, and properly documented aeronautical research, aircraft accident case study report and feasibility study.	N-07 to N-12	M-01 to M-09, S-01 to S-03, E-01 to E-10, A-01 to A-03, P-01 to P-30			
		3. Integrate technology for enhanced communications to express ideas and findings (audio/video equipment appropriately).	N-07 to N-12	M-01 to M-09, S-01 to S-03, E-01 to E-10, A-01 to A-03, P-01 to P-30			
<b>i</b>	Engage in life-long learning and to keep current of the development in a specific field of specialization.	1. Demonstrate awareness of life long learning in aeronautical engineering practice (OJT) and research through engaging in economic, managerial, safety and ethical aspects.	E-07 to E-10, P-02, P-04, P-05, P-06	P-03, P-27, P-29	Peer/Supervisor's Evaluation (OJT), Technical Paper		
<b>j</b>	Use the appropriate techniques, skills and tools necessary for the practice of aeronautical engineering.	1. Utilize a wide range of modern tools including computer-based tools or state-of-the-art algorithms and solution techniques in aircraft design, air transport economics and aeronautical laboratory problems.	S-02, S-03, E-01 to E-03, P-01	P-08, P-09, P-19, P-04, P-06	Aircraft Design Paper, Aircraft Model	Aircraft Design Paper, Aircraft Model, Problem Set	Hands-on Activity
		2. Uses computer modeling and simulation software tools/packages in solving complex aerodynamics and aeronautical laboratory problems.	E-02, E-03, P-27, P-29	P-16, P-17, P-20, P-04			
		3. Demonstrates skills in using tools effectively and safely in handling aircraft maintenance and inspection.	E-08 to E-10, P-14, P-18, P-19	P-10, P-11			
<b>k</b>	Acquire a thorough knowledge of contemporary issues.	1. Evaluate an aviation safety program/strategy/procedures that addresses a particular issue in a given scenario or location.	E-07 to E-10, P-06	P-22	Case Study	Case Study	
		2. View socio-economic and political issues from different perspectives in relation to aviation regulation.	N-01 to N-12, E-07 to E-10	P-06			
<b>l</b>	Knowledge and understanding of engineering and management principles as a member and leader in a team, to manage projects and in multidisciplinary environments.	1. Relate the basic requirements in aerodrome planning and designing with other engineering profession.	E-07 to E-10, P-05	P-02	Aerodrome Design	Peer/Supervisor's Evaluation (OJT), Technical Paper	Research Paper & Case Study
		2. Establish sense of professionalism in different areas of aeronautical engineering practice.(OJT)	P-06,	P-03			
		3. Initiate aeronautical related research applying engineering, economic, environmental and safety management approach.	E-07 to E-10	P-25, P-27, P-29			
<b>m</b>	Apply acquired aeronautical engineering knowledge and skills for national development	1. Emphasize economic and safety concerns in designing an aircraft that will contribute to our national development.	E-07 to E-10, P-22, P-27, P-29	P-10, P-11, P-25,	Research Paper & Case Study	Research Paper, Feasibility Study & Case Study	
		2. Practice management skills in aeronautical related research and feasibility study.	E-07 to E-10	P-27, P-29			







### Continuous Quality Improvement Information Sheet

#	Document	Annex	Evaluator's Comments
1	IMV CQI Process Description	N	
2	PEO CQI Process Description	O	
3	PO CQI Process Description	P	
4	CQI Project/Program Proposal Template	Q	
5	Sample Approved CQI Projects/Programs	R	
6	Sample CQI Project/Program Reports	S	



**Transmittal Sheet to the CHED-TPET Website**

Name of Preparer:	
Electronic Signature:	
Designation:	
Date Completed:	



Name of Reviewer:	
Electronic Signature:	
Designation:	
Date Reviewed:	

Filename Used:	
Date Uploaded:	

## OBTL Framework

Use this space to show a figure representing your OBTL Framework for the Program.

**Work**

**Comments**

Use this space to give a short description of your OBTL Framework



## Programs Outcomes

## Performance Indicator

Evaluate project alternatives and other economic studies by applying engineering economic principles, methods and basic economic decision making concepts

Cognize the field of engineering operations and management and its application to modern air transportation industry

Comprehend the importance of waste management and its relevance to the aviation engineering profession

Work effectively in multi-disciplinary and multi-cultural teams in diverse fields of practice.

Understand and apply the concepts and principle of safety in aviation engineering practice

Apprehend the local and international laws and regulations pertaining to the design, maintenance, repair and operation in the field of aviation sciences

Evaluate the reliability potentials of alternative design by preparing and investigating a program that will contribute to the enhancement of the industry

Demonstrate professional and ethical practice in different forms of written, oral and physical communication medium



**Key Courses**

**Assessment Method**