AMGS Cross Mentoring Research Activity 2016-2017 Syllabus

Ⅰ. Mentor

1. Personal Information

Name	Dr. Rogel Mari Sese
Mobile Number	+63-9997054943
School or Institute	Regulus SpaceTech/National SPACE Development Program
E-mail	rmdsese@gmail.com
Major	Astronomy and Astrophysics, Space Science

2. Education

	Year	Name of University	Major	Degree	Nation
Bachelor's degree	2001	University of the Philippines Los Banos	Applied Physics	Bachelor of Science	
Master's degree	2004	University of the Philippines Diliman	Physics	Master of Science	
Doctorate	1997	University of Tsukuba	Physics	Ph.D	
Dissertation	The Study on the Spectral Energy Distribution of Massive Circumstellar Disks Using Radiative Transfer Calculations				

3. Experiences

Duration	Position	Institute or University
Sept 2015 - present	Program Leader National SPACE Development Program	DOST-PCIEERD
April 2013 - present	President	Regulus SpaceTech

June 2011 – October 2013	Assistant Professor, Physics Division, IMSP	University of the Philippines Los Banos

4. Honors and Awards

Year	Title	Remarks
2012	Emerging Space Leader Grant Awardee	International Astronautical Federation
2014	Outstanding Achievement Award	Civil Aviation Authority of the Philippines

5. Professional Societies
   a) Founding Chairman, Southeast Asian Young Astronomers Collaboration, (2011 – present)
   b) National Point of Contact, Space Generation Advisory Council (2013 - present)
   c) Associate Member, National Research Council of the Philippines (2015 – present)
   d) Member, International Astronomical Union (2012 – present)
   e) Member, Samahang Pisika ng Pilipinas (Physics Society of the Philippines) (2001 – present)
   f) Member, Philippine Astronomical Society (2001 – present)

II. Syllabus

1. Course Title & Criteria

Course Title	**Biofuels, Biomass & Wastes**
Criteria	[ ] Biology & Applied Biology
	[ ] Chemistry
	[ ] Green Energy & Environmental Science
	[ ] Integrated Science
	[ ] Medicinal Science

	[ ] Nano Science
	[X] Physics
	[ ] Others

2. Course Objectives & Description

At the completion of this course, students will be able to:

1. Understand the nature of the stellar evolutionary process from the formation of stars to the creation of blackholes and describe the physical processes involved at each stage.

2. Understand main sequence stars and how the different processes occurring in its internal structure results to the nucleosynthesis of the various elements that we can find in nature.

3. Required Textbook or papers:

1. Carroll, B.W. and Ostlie, D.A., An Introduction to Modern Stellar Astrophysics, 1st Edition, Benjamin Cummings, 1995.
2. Carroll, B.W. and Ostlie, D.A., An Introduction to Modern Astrophysics, 2nd Edition, Benjamin Cummings, 2006.

4. Final Outcome

Mid-term Report	[ ] Due date:
Final Report	[X] Due date: January 27, 2017
Research Article for APEC Youth Scientist Journal	[ ] Due date:

5. Schedule

Week	Date	Topics and Activities	Assignments & Other Instructions

Week 1	Oct 21 - 27	Fundamentals of Observational Astronomy	
Week 2	Oct 28 - Nov3	Pre-Main Sequence Evolution	
Week 3	Nov 4 - 10	Main Sequence Stage	
Week 4	Nov 11 - 17	Internal Structure of Main Sequence Stars	
Week 5	Nov 18 - 24	Nucleosynthesis of Elements	
Week 6	Nov 25 - Dec 1	Giant and Supergiant Stage	
Week 7	Dec 2 – 8	Types Supernova Events	
Week 8	Dec 9 – 15	Degenerate Remnants	
Week 9	Dec 16 - 22	Classification of Stars	
Week 10	Dec 23 - 29	Constellations and Naming Conventions	
Week 11	Dec 30 – Jan 5	Synthesis	
January 27		Submission of Final Report	