



**Fakultas Matematika dan Ilmu Pengetahuan Alam (FMIPA)**

*Faculty of Mathematics and Natural Sciences*

# **Certificate of Participation**

**No.: PL62/200914/AS/fmipa**

***This certificate is proudly awarded to***

***Mark Ivan Gabo Ugalino***

***for attending***

**Summer School on Galaxies and Cosmology (SSGC)**

**September 14-25, 2020**

**Chairman of SSGC 2020**

**Organized by Astronomy  
Research Division**

**Dr. Anton Timur Jaelani**



**Bandung, 25 September 2020**

**Dean of FMIPA ITB**

**Wahyu Srigutomo, S.Si., M.Si., Ph.D.**

**SSGC-2020**

# Summer School on Galaxies and Cosmology (SSGC)

## September 14-25, 2020

No.: PL62/200914/AS/fmipa

*Mark Ivan Gabo Ugalino*

Topics	Hours	Topics	Hours
Milky Way and Local Group (M. Ikbāl Arifyanto - Institut Teknologi Bandung, Indonesia)	3	Dark Energy: Introduction and Current Surveys (Katarina (Dida) Markovic - California Institute of Technology, USA)	1.5
Scaling Relations in Galaxies (Stacy McGaugh - Case Western Reserve University, USA)	1.5	Developing Scientific Missions in JPL, NASA (Jason Rhodes - California Institute of Technology, USA)	1.5
Introduction to Cosmology (Premana W. Premadi - Institut Teknologi Bandung, Indonesia)	3	Indirect Detection of Dark Matter (Emmanuel Moulin - CEA Saclay, Irfu/SPP, France)	3
Introduction to Dark Matter (Hesti R. T. Wulandari - Institut Teknologi Bandung, Indonesia)	1.5	Direct Detection of Dark Matter (Josef Jochum - University of Tübingen, Germany)	3
Introduction to Diffuse Matter (Lucky Puspitarini - Institut Teknologi Bandung, Indonesia)	1.5	Alternatives to Dark Matter (Federico Lelli - Cardiff University, United Kingdom)	3
Introduction to Gravitational Lensing (Anton T. Jaelani - Institut Teknologi Bandung, Indonesia)	1.5	CMB and Large Scale Structure (Tarun Souradeep - IISER, India)	3
Astroparticle Physics and Dark Matter (Reinard Primulando - Universitas Katolik Parahyangan, Indonesia)	3	Our Current Understanding of the Physical Universe: Public Lecture 1 (Joel R. Primack - UC Santa Cruz, USA)	1.5
Dark Matter Controversy in the Milky Way and the Local Group (Masashi Chiba - Tohoku University, Japan)	3	The New Quests for Physics of the Early Universe: Public Lecture 2 (Eiichiro Komatsu - Max-Planck-Institut für Astrophysik, Germany)	1.5
Introduction to Weak Gravitational Lensing (Masamune Oguri - University of Tokyo, Japan)	1.5	Students Activities: Presentations and Discussions	3
<b>Total Hours</b>		<b>37.5</b>	

