

# Staff Handbook

Please fill out and submit one table per person.

|                                                         |                                                                                                                                                                                                                                                                                                       |                                      |                 |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------------|
| Name                                                    | <i>Lusi Harini, S.Si., M.Sc.</i>                                                                                                                                                                                                                                                                      |                                      |                 |
| Post                                                    | <i>Mathematics</i>                                                                                                                                                                                                                                                                                    |                                      |                 |
| Academic career                                         | <i>Initial academic appointment</i>                                                                                                                                                                                                                                                                   | <i>Institution</i>                   | <i>Year</i>     |
|                                                         | <i>Habilitation [German post-doctoral qualification] (subject)</i>                                                                                                                                                                                                                                    | -                                    | -               |
|                                                         | <i>Doctorate</i>                                                                                                                                                                                                                                                                                      | -                                    | -               |
|                                                         | <i>Master degree (Mathematics)</i>                                                                                                                                                                                                                                                                    | <i>Gadjah Mada University</i>        | <i>2015</i>     |
|                                                         | <i>Undergraduate degree (Mathematics)</i>                                                                                                                                                                                                                                                             | <i>Gadjah Mada University</i>        | <i>2013</i>     |
| Employment                                              | <i>Position</i>                                                                                                                                                                                                                                                                                       | <i>Employer</i>                      | <i>Period</i>   |
|                                                         | <i>Assistant Professor</i>                                                                                                                                                                                                                                                                            | <i>Universitas Negeri Yogyakarta</i> | <i>2019-now</i> |
| Research and development projects over the last 5 years | 1. <i>Application of Cycle-Merging Technique from the Prefer Complement Algorithm on a Modified de Bruijn Graph, 2025, (Musthofa, Agus Maman Abadi, Karyati, Lusi Harini), Rp 24.000.000</i>                                                                                                          |                                      |                 |
|                                                         | 2. <i>Pointwise Contraction Mapping in a Generalized Modular Metric Space, 2024, (Lusi Harini, Agus Maman Abadi, Karyati), Rp 18.000.000</i>                                                                                                                                                          |                                      |                 |
|                                                         | 3. <i>Development of a Fixed Point Theorem for Set-Valued Mappings in b-Modular Metric Spaces and Its Application to Differential Equation Systems, 2024, (Hartono, Lusi Harini, Afifah Hayati, Syamsuddin Mas'ud, Karyati, Thesa Adi Saputra Yusri, Fitriana Yuli Saptaningtyas), Rp 124.830.000</i> |                                      |                 |
|                                                         | 4. <i>Existence of the Parrondo Paradox Phenomenon in a Predator-Prey System with Switching Function, 2023, (Kus Prihantoso Krisnawan, Hartono, Fitriana Yuli Saptaningtyas, Lusi Harini), Rp 24.000.000</i>                                                                                          |                                      |                 |
|                                                         | 5. <i>Prediction of the Composite Stock Price Index Using LSTM Algorithm Based on Historical Data and Technical Analysis, 2023, (Agus Maman Abadi, Thesa Adi Saputra Yusri, Lusi Harini), Rp 36.000.000</i>                                                                                           |                                      |                 |
|                                                         | 6. <i>Bifurcation Analysis to Identify the Emergence of Parrondo Paradox in a Predator-Prey Dynamical System, 2022, (Kus Prihantoso Krisnawan, Hartono, Fitriana Yuli Saptaningtyas, Lusi Harini), Rp 24.000.000</i>                                                                                  |                                      |                 |
|                                                         | 7. <i>Linear Programming Problems with Cubic Constraints, 2021, (Himmawati Puji Lestari, Caturiyati, Lusi Harini), Rp 18.000.000</i>                                                                                                                                                                  |                                      |                 |

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|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------|
| Industry collaborations over the last 5 years         | <i>Project title</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |               |                 |
|                                                       | <i>Partners</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |                 |
| Patents and proprietary rights                        | <i>Title</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <i>Year</i>   |                 |
| Important publications over the last 5 years          | 1. <i>Enhancing Image Security through Modified RC4 Algorithm and Chaotic Map-Based Encryption, TAS Yusri, VS Putri, BSH Marwoto, L Harini... - IAENG International Journal of Applied Mathematics, 2025</i>                                                                                                                                                                                                                                                                                                                                            |               |                 |
|                                                       | 2. <i>Construction of fuzzy systems based on fuzzy c-means clustering and singular value decomposition for predicting rate of penetration in geothermal drilling (10.11591/ijpeds.v15.i4.pp2190-2198)</i>                                                                                                                                                                                                                                                                                                                                               |               |                 |
|                                                       | 3. <i>Linear Programming Problems with Cube Constraints (HP Lestari, Caturiyati, L Harini - AIP Conference Proceedings, 2024)</i>                                                                                                                                                                                                                                                                                                                                                                                                                       |               |                 |
|                                                       | 4. <i>Some fixed point theorems in generalized modular metric space (L Harini, H. P. Lestari, Caturiyati; Some fixed point theorems in generalized modular metric space. AIP Conf. Proc. 8 December 2022; 2575 (1): 060003.)</i>                                                                                                                                                                                                                                                                                                                        |               |                 |
|                                                       | 5. <i>Fixed Point Theory for <math>(\psi,\varphi)\Omega</math>-Contraction Mappings in Ordered Modular <math>p</math>-Metric Spaces (Hayati, A., Harini, L., Winarni, A., &amp; Muhasanah, N. (2022). Teori Titik Tetap untuk Pemetaan <math>(\hat{i}^*,\hat{i}^*)_{{\hat{I}}^{\odot}}</math>-Kontraksi pada Ruang <math>p</math>-Metrik Modular Berorder. PYTHAGORAS : Jurnal Matematika dan Pendidikan Matematika, 17(2), 400-414. <a href="https://doi.org/10.21831/pythagoras.v17i2.52985">https://doi.org/10.21831/pythagoras.v17i2.52985</a>)</i> |               |                 |
| Activities in specialist bodies over the last 5 years | <i>Organisation</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <i>Role</i>   | <i>Period</i>   |
|                                                       | <i>KAMINDO (Komunitas Matematika Analisis Indonesia)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <i>Member</i> | <i>2024-now</i> |
|                                                       | <i>IndoM</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <i>Member</i> | <i>2024-now</i> |