



## DAFTAR PUSTAKA

- Amin, A. R. (2021). Evaluasi Pencahayaan Alami dan Buatan pada Ruang Kuliah Fakultas Sains dan Teknologi, Unika Musi Charitas Studi Kasus : ruang 202, 204 dan laboratorium komputer 4. *Jurnal Arsir Universitas Muhammadiyah Palembang*, 77-89.
- Amin, S., Jamala, N., & Luizjaya, J. (2017). Analisis Pencahayaan Alami pada Ruang Kuliah Fakultas Teknik Universitas Hasanuddin. *Jurnal Lingkungan Binaan Indonesia* 6, 33-38.
- Budiman, L., & Hedy C., I. (2012). Desain Pencahayaan Pada Ruang Kelas SMA 9 Surabaya. *Dimensi Interior, VOL. 10* , 33-41.
- Cahyantari, L., Dina H., R., & Supriyadi, B. (2016). Analisis Intensitas Pencahayaan Di Ruang Kuliah Gedung Fisika Universitas Jember Dengan Menggunakan Calculux Indoor 5.0 B. *Jurnal Pembelejaraan Fisika, Vol. 5*, 77-81.
- Hamdy, M. A., Jamala, N., Rahim, R., Hamzah, B., Mulyadi, R., & Kusno, A. (2019). Intensitas Cahaya Alami Pada Ruang Kelas Perkuliahan Studi Kasus: Ruang Perkuliahan Universitas Bosowa. *ATRIUM, Vol. 5*, 1-11.
- Idrus, I., Hamzah, B., & Mulyadi, R. (2016). Intensitas Pencahayaan Alami Ruang Kelas Sekolah Dasar Di Kota Makassar. *Simposium Nasional RAPI XV*, 473-479.
- IESNA. (2000). *The IESNA Lighting Handbook Reference & Application*. New York: IESNA.
- Indrakesuma, F. G., & Munawaroh, A. S. (2021). Analisis Kenyamanan Pencahayaan Alami di Ruang Kelas SMKN 2 Bandar Lampung . *JURNAL ILMIAH PENELITIAN MarKa*, 88-99.
- Jakarta, P. P. (2012). *Panduan Pengguna Bangunan Gedung Hijau Jakarta VOL. 3 Sistem Pencahayaan*. Jakarta: Pemerintah Provinsi DKI Jakarta.
- Jamala, N., Ishak, T., & Tappangan, J. (2018). Analisis Pencahayaan Alami pada Ruang Lab Sains dan Teknologi Bangunan Universitas Hasanuddin. *IPLBI* 7, 060-067.
- Kurniasih, S. (2014). Optimasi Sistem Pencahayaan Pada Ruang Kelas Universitas Budi Luhur. *Arsitron Vol. 5*, 21-33.
- Lisa, N. P., & Nurhaiza. (2017). Analisis Intensitas Pencahayaan Alami pada Ruang Kuliah Prodi Arsitektur Universitas Malikussaleh. *Prosiding Temu Ilmiah IPLBI 2017*, H 061-066.
- Mahendra, Y. M., Amin, M. R., & Wibawa, A. B. (2022). Analisis Pencahayaan Alami Dan Campuran Ruang Kelas 409, 502, 505 Gedung Utama Universitas PGRI Semarang. *Science And Engineering National Seminar 7 (SENS 7)*.
- Mangunwijaya, Y. (2000). *Pengantar Fisika Bangunan*. Jakarta: Djambatan.
- Maulana, A., & Kusuma, Y. (2013). Analysis of Natural Lighting and Visual Comfort Multipurpose Hall Building Using Software DIALux Evo 10.0 Case Study: Multipurpose Hall Building of Imbanagara Raya Ciamis Village Chief's Office, West Java. *IOP Conference Series Earth and Environmental Science*, 1-10.
- Prihatmanti, R., & Susan, M. Y. (2016). Lighting Performance Pada Ruang Kelas Di Bangunan Bersejarah. *Aksen Vol. 2*, 39-57.

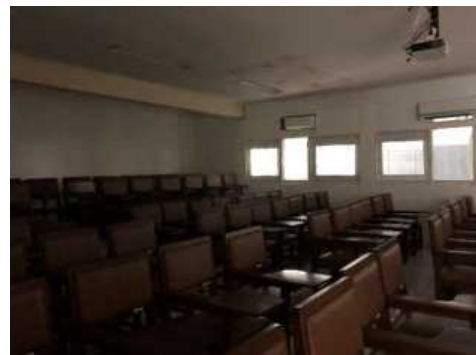
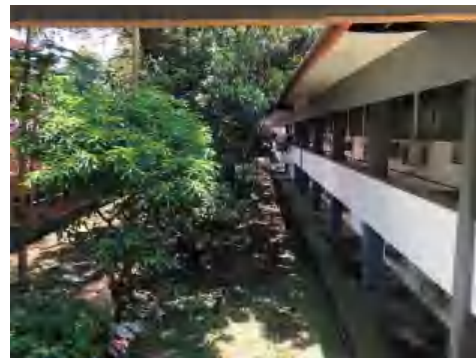


- Satwiko, P. (2004). *Fisika Bangunan 1*. Yogyakarta: Penerbit Andi.
- Scheer, D. (2014). *Come to the Light: Revit Lighting and Daylighting Performance Analysis for Everyone*. Autodesk University. Diambil kembali dari Autodesk .
- Thojib, J., & Adhitama, M. S. (2013). Kenyamanan Visual Melalui Pencahayaan Alami Pada Kantor (Studi Kasus Gedung Dekanat Fakultas Teknik Universitas Brawijaya Malang). *RUAS*, 10-15.
- Wijaya, I. I. (2017). Teknik Optimasi Pencahayaan Alami Dalam Interior Rumah Tinggal. *RAPI XVI*, 377-384.



## LAMPIRAN

Lampiran 1 Dokumentasi Penelitian





Lampiran 2. Hasil Pengukuran Intensitas Pencahayaan Ruang Belajar FIS

| FEB 110       |           |           |           |           |           |           |           |           |           |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| TITIK<br>UKUR | 9:00 AM   |           |           | 12:00 PM  |           |           | 3:00 PM   |           |           |
|               | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 |
| A1            | 6         | 8         | 7         | 11        | 21        | 13        | 54        | 55        | 52        |
| A2            | 21        | 28        | 24        | 43        | 48        | 43        | 90        | 115       | 110       |
| A3            | 11        | 18        | 12        | 12        | 15        | 14        | 71        | 88        | 83        |
| A4            | 21        | 26        | 22        | 28        | 33        | 29        | 82        | 96        | 93        |
| B1            | 11        | 12        | 10        | 9         | 10        | 9         | 48        | 58        | 49        |
| B2            | 13        | 23        | 12        | 16        | 17        | 13        | 54        | 60        | 53        |
| B3            | 12        | 14        | 12        | 13        | 19        | 17        | 53        | 62        | 57        |
| B4            | 11        | 15        | 13        | 13        | 19        | 16        | 60        | 64        | 59        |
| C1            | 7         | 9         | 8         | 6         | 10        | 7         | 26        | 29        | 27        |
| C2            | 9         | 10        | 9         | 2         | 1         | 7         | 27        | 32        | 28        |
| C3            | 7         | 11        | 9         | 10        | 12        | 10        | 30        | 38        | 32        |
| C4            | 10        | 20        | 11        | 9         | 10        | 9         | 21        | 33        | 24        |
| D1            | 4         | 7         | 4         | 4         | 5         | 4         | 26        | 28        | 27        |
| D2            | 5         | 8         | 7         | 20        | 10        | 5         | 19        | 27        | 22        |
| D3            | 40        | 43        | 42        | 11        | 17        | 10        | 16        | 28        | 25        |
| D4            | 2         | 4         | 4         | 7         | 8         | 5         | 17        | 22        | 20        |

| FEB 112-113   |           |           |           |           |           |           |           |           |           |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| TITIK<br>UKUR | 9:00 AM   |           |           | 12:00 PM  |           |           | 3:00 PM   |           |           |
|               | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 |
| A1            | 21        | 24        | 23        | 27        | 28        | 28        | 40        | 42        | 40        |
| A2            | 16        | 20        | 15        | 11        | 19        | 16        | 82        | 85        | 80        |
| A3            | 15        | 18        | 18        | 23        | 28        | 28        | 81        | 83        | 82        |
| A4            | 13        | 18        | 16        | 33        | 39        | 34        | 71        | 84        | 72        |
| B1            | 4         | 5         | 4         | 6         | 6         | 7         | 57        | 58        | 55        |
| B2            | 3         | 6         | 6         | 6         | 8         | 6         | 58        | 68        | 61        |
| B3            | 3         | 5         | 5         | 7         | 4         | 7         | 60        | 65        | 63        |
| B4            | 7         | 10        | 8         | 7         | 9         | 7         | 66        | 68        | 65        |
| C1            | 2         | 4         | 4         | 2         | 3         | 3         | 26        | 31        | 28        |
| C2            | 1         | 5         | 4         | 3         | 4         | 4         | 27        | 30        | 28        |
| C3            | 14        | 21        | 10        | 4         | 6         | 6         | 33        | 38        | 35        |
| C4            | 9         | 7         | 7         | 4         | 6         | 5         | 30        | 34        | 31        |
| D1            | 2         | 5         | 3         | 1         | 2         | 2         | 17        | 20        | 18        |
| D2            | 2         | 3         | 2         | 2         | 4         | 4         | 20        | 28        | 22        |
| D3            | 12        | 11        | 13        | 10        | 13        | 10        | 28        | 30        | 27        |
| D4            | 6         | 7         | 7         | 4         | 4         | 3         | 17        | 20        | 18        |

FEB 105-106



| TITIK<br>UKUR | 9:00 AM   |           |           | 12:00 PM  |           |           | 3:00 PM   |           |           |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|               | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 |
| A1            | 32        | 37        | 28        | 24        | 25        | 25        | 73        | 77        | 72        |
| A2            | 10        | 18        | 13        | 19        | 17        | 17        | 113       | 15        | 103       |
| A3            | 14        | 23        | 13        | 5         | 8         | 7         | 129       | 143       | 143       |
| A4            | 18        | 22        | 14        | 8         | 10        | 10        | 106       | 145       | 141       |
| B1            | 17        | 18        | 16        | 13        | 14        | 15        | 32        | 38        | 33        |
| B2            | 16        | 21        | 15        | 15        | 12        | 13        | 24        | 28        | 27        |
| B3            | 8         | 12        | 10        | 12        | 20        | 12        | 33        | 34        | 33        |
| B4            | 5         | 7         | 7         | 7         | 7         | 8         | 28        | 29        | 21        |
| C1            | 31        | 31        | 30        | 10        | 16        | 23        | 30        | 38        | 34        |
| C2            | 15        | 18        | 14        | 15        | 15        | 11        | 25        | 24        | 18        |
| C3            | 11        | 16        | 12        | 11        | 16        | 11        | 20        | 21        | 14        |
| C4            | 6         | 11        | 8         | 10        | 12        | 9         | 12        | 16        | 10        |
| D1            | 22        | 27        | 21        | 29        | 31        | 31        | 35        | 40        | 37        |
| D2            | 13        | 18        | 14        | 5         | 8         | 8         | 28        | 30        | 27        |
| D3            | 13        | 15        | 11        | 6         | 5         | 5         | 18        | 21        | 16        |
| D4            | 7         | 10        | 9         | 7         | 9         | 9         | 14        | 23        | 17        |

| FIS 106-107   |           |           |           |           |           |           |           |           |           |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| TITIK<br>UKUR | 9:00 AM   |           |           | 12:00 PM  |           |           | 3:00 PM   |           |           |
|               | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 |
| A1            | 27        | 30        | 29        | 24        | 25        | 23        | 13        | 15        | 18        |
| A2            | 14        | 18        | 12        | 18        | 15        | 12        | 8         | 8         | 8         |
| A3            | 9         | 12        | 11        | 11        | 14        | 10        | 7         | 11        | 9         |
| A4            | 8         | 12        | 8         | 7         | 8         | 8         | 7         | 8         | 7         |
| B1            | 22        | 24        | 20        | 33        | 34        | 30        | 26        | 33        | 31        |
| B2            | 11        | 18        | 12        | 8         | 10        | 15        | 16        | 20        | 12        |
| B3            | 18        | 20        | 15        | 10        | 11        | 8         | 12        | 13        | 13        |
| B4            | 15        | 21        | 19        | 17        | 17        | 15        | 9         | 14        | 13        |
| C1            | 35        | 42        | 40        | 25        | 28        | 24        | 36        | 38        | 37        |
| C2            | 12        | 19        | 13        | 15        | 17        | 15        | 8         | 15        | 14        |
| C3            | 10        | 15        | 12        | 10        | 11        | 10        | 9         | 10        | 10        |
| C4            | 12        | 13        | 10        | 11        | 10        | 10        | 14        | 17        | 12        |
| D1            | 25        | 27        | 24        | 33        | 33        | 37        | 39        | 40        | 47        |
| D2            | 19        | 20        | 19        | 10        | 16        | 15        | 10        | 12        | 11        |
| D3            | 8         | 11        | 10        | 9         | 10        | 10        | 10        | 11        | 10        |
| D4            | 9         | 12        | 12        | 9         | 12        | 11        | 11        | 15        | 12        |

| FIS 109 |          |         |
|---------|----------|---------|
| 9:00 AM | 12:00 PM | 3:00 PM |



| TITIK<br>UKUR | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| A1            | 20        | 28        | 21        | 23        | 21        | 21        | 23        | 33        | 25        |
| A2            | 13        | 16        | 14        | 13        | 13        | 11        | 17        | 15        | 15        |
| A3            | 7         | 9         | 6         | 7         | 7         | 7         | 10        | 10        | 10        |
| A4            | 7         | 10        | 6         | 10        | 13        | 8         | 4         | 6         | 7         |
| B1            | 33        | 41        | 36        | 32        | 32        | 28        | 38        | 43        | 44        |
| B2            | 10        | 11        | 9         | 15        | 18        | 12        | 16        | 19        | 16        |
| B3            | 6         | 7         | 7         | 10        | 11        | 10        | 10        | 10        | 10        |
| B4            | 7         | 12        | 8         | 13        | 15        | 9         | 14        | 16        | 12        |
| C1            | 16        | 20        | 17        | 16        | 3         | 10        | 22        | 28        | 26        |
| C2            | 10        | 12        | 12        | 15        | 7         | 10        | 18        | 13        | 16        |
| C3            | 6         | 9         | 9         | 12        | 14        | 14        | 10        | 10        | 10        |
| C4            | 2         | 7         | 6         | 10        | 10        | 10        | 6         | 6         | 5         |
| D1            | 26        | 29        | 28        | 27        | 33        | 29        | 28        | 35        | 32        |
| D2            | 12        | 17        | 14        | 14        | 14        | 11        | 17        | 22        | 16        |
| D3            | 7         | 7         | 6         | 8         | 8         | 9         | 12        | 11        | 10        |
| D4            | 5         | 11        | 7         | 12        | 17        | 12        | 7         | 10        | 10        |

| FEB 208       |           |           |           |           |           |           |           |           |           |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| TITIK<br>UKUR | 9:00 AM   |           |           | 12:00 PM  |           |           | 3:00 PM   |           |           |
|               | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 |
| A1            | 3         | 6         | 5         | 5         | 11        | 6         | 7         | 8         | 8         |
| A2            | 3         | 5         | 5         | 7         | 9         | 7         | 5         | 8         | 8         |
| A3            | 2         | 5         | 3         | 2         | 3         | 3         | 2         | 4         | 3         |
| A4            | 3         | 4         | 5         | 5         | 8         | 5         | 8         | 9         | 9         |
| B1            | 6         | 12        | 7         | 4         | 9         | 6         | 9         | 12        | 8         |
| B2            | 5         | 10        | 9         | 6         | 13        | 9         | 11        | 12        | 9         |
| B3            | 7         | 9         | 8         | 5         | 12        | 6         | 10        | 10        | 12        |
| B4            | 6         | 8         | 7         | 6         | 8         | 6         | 12        | 14        | 13        |
| C1            | 10        | 10        | 7         | 10        | 10        | 7         | 5         | 6         | 4         |
| C2            | 7         | 8         | 8         | 3         | 5         | 5         | 9         | 10        | 6         |
| C3            | 5         | 7         | 6         | 3         | 4         | 4         | 7         | 9         | 7         |
| C4            | 2         | 3         | 5         | 5         | 8         | 7         | 3         | 6         | 4         |
| D1            | 3         | 9         | 4         | 6         | 7         | 6         | 8         | 13        | 8         |
| D2            | 31        | 34        | 33        | 14        | 16        | 15        | 10        | 18        | 13        |
| D3            | 4         | 8         | 5         | 1         | 3         | 3         | 7         | 8         | 6         |
| D4            | 4         | 9         | 8         | 3         | 5         | 4         | 6         | 6         | 5         |

| FEB 212-213 |         |          |         |
|-------------|---------|----------|---------|
|             | 9:00 AM | 12:00 PM | 3:00 PM |



| TITIK UKUR | HARI 1 | HARI 2 | HARI 3 | HARI 1 | HARI 2 | HARI 3 | HARI 1 | HARI 2 | HARI 3 |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| A1         | 3      | 3      | 4      | 1      | 3      | 4      | 7      | 10     | 9      |
| A2         | 3      | 4      | 4      | 2      | 6      | 4      | 10     | 10     | 7      |
| A3         | 2      | 3      | 3      | 2      | 4      | 4      | 10     | 2      | 8      |
| A4         | 1      | 2      | 2      | 6      | 7      | 5      | 5      | 4      | 6      |
| B1         | 3      | 3      | 4      | 3      | 4      | 4      | 7      | 8      | 8      |
| B2         | 1      | 1      | 2      | 8      | 6      | 5      | 7      | 10     | 9      |
| B3         | 3      | 4      | 4      | 1      | 4      | 4      | 7      | 10     | 13     |
| B4         | 7      | 7      | 8      | 1      | 4      | 4      | 9      | 10     | 12     |
| C1         | 7      | 7      | 4      | 3      | 2      | 2      | 12     | 5      | 6      |
| C2         | 4      | 5      | 5      | 4      | 7      | 4      | 15     | 11     | 10     |
| C3         | 3      | 3      | 3      | 1      | 2      | 3      | 8      | 4      | 4      |
| C4         | 3      | 3      | 4      | 1      | 1      | 2      | 5      | 5      | 5      |
| D1         | 2      | 4      | 4      | 1      | 2      | 2      | 2      | 3      | 3      |
| D2         | 4      | 9      | 5      | 3      | 6      | 5      | 5      | 3      | 5      |
| D3         | 1      | 1      | 1      | 1      | 1      | 2      | 5      | 5      | 5      |
| D4         | 1      | 1      | 1      | 1      | 1      | 1      | 2      | 1      | 2      |

| FEB 206    |         |        |        |          |        |        |         |        |        |
|------------|---------|--------|--------|----------|--------|--------|---------|--------|--------|
| TITIK UKUR | 9:00 AM |        |        | 12:00 PM |        |        | 3:00 PM |        |        |
|            | HARI 1  | HARI 2 | HARI 3 | HARI 1   | HARI 2 | HARI 3 | HARI 1  | HARI 2 | HARI 3 |
| A1         | 2       | 2      | 3      | 1        | 2      | 2      | 6       | 6      | 3      |
| A2         | 2       | 3      | 4      | 7        | 7      | 6      | 3       | 8      | 6      |
| A3         | 1       | 1      | 2      | 2        | 4      | 2      | 4       | 6      | 4      |
| A4         | 3       | 3      | 2      | 6        | 6      | 6      | 1       | 2      | 2      |
| B1         | 11      | 13     | 13     | 29       | 28     | 25     | 22      | 23     | 23     |
| B2         | 6       | 10     | 9      | 5        | 5      | 8      | 6       | 8      | 8      |
| B3         | 6       | 8      | 7      | 8        | 8      | 9      | 13      | 14     | 17     |
| B4         | 2       | 3      | 4      | 5        | 3      | 4      | 5       | 8      | 5      |
| C1         | 10      | 9      | 12     | 12       | 15     | 17     | 30      | 36     | 33     |
| C2         | 10      | 10     | 10     | 10       | 10     | 8      | 11      | 13     | 12     |
| C3         | 3       | 5      | 5      | 7        | 9      | 7      | 10      | 12     | 9      |
| C4         | 3       | 4      | 6      | 7        | 9      | 6      | 11      | 12     | 11     |
| D1         | 8       | 9      | 12     | 25       | 25     | 20     | 18      | 23     | 22     |
| D2         | 5       | 5      | 8      | 8        | 7      | 8      | 11      | 9      | 9      |
| D3         | 4       | 4      | 6      | 3        | 4      | 8      | 7       | 9      | 9      |
| D4         | 2       | 1      | 2      | 9        | 7      | 7      | 4       | 4      | 4      |

| FIS 206 |         |          |         |
|---------|---------|----------|---------|
|         | 9:00 AM | 12:00 PM | 3:00 PM |



| TITIK<br>UKUR | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| A1            | 8         | 8         | 7         | 5         | 8         | 8         | 5         | 6         | 6         |
| A2            | 10        | 11        | 10        | 5         | 7         | 7         | 6         | 6         | 7         |
| A3            | 11        | 9         | 9         | 4         | 5         | 5         | 6         | 5         | 5         |
| A4            | 9         | 7         | 5         | 3         | 4         | 4         | 3         | 4         | 4         |
| B1            | 0         | 9         | 5         | 5         | 5         | 5         | 10        | 13        | 15        |
| B2            | 10        | 11        | 10        | 7         | 8         | 7         | 8         | 8         | 7         |
| B3            | 8         | 8         | 7         | 6         | 6         | 6         | 7         | 7         | 6         |
| B4            | 5         | 7         | 7         | 4         | 4         | 3         | 6         | 5         | 5         |
| C1            | 13        | 15        | 15        | 12        | 15        | 11        | 8         | 9         | 9         |
| C2            | 8         | 9         | 9         | 10        | 12        | 10        | 10        | 14        | 13        |
| C3            | 4         | 7         | 7         | 6         | 6         | 6         | 10        | 10        | 9         |
| C4            | 10        | 9         | 9         | 8         | 10        | 10        | 11        | 13        | 12        |
| D1            | 10        | 11        | 9         | 16        | 18        | 12        | 14        | 13        | 10        |
| D2            | 6         | 7         | 10        | 6         | 7         | 7         | 12        | 11        | 8         |
| D3            | 3         | 5         | 5         | 4         | 5         | 5         | 5         | 5         | 5         |
| D4            | 3         | 3         | 4         | 3         | 4         | 4         | 7         | 7         | 5         |

| FIS 209       |           |           |           |           |           |           |           |           |           |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| TITIK<br>UKUR | 9:00 AM   |           |           | 12:00 PM  |           |           | 3:00 PM   |           |           |
|               | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 | HARI<br>1 | HARI<br>2 | HARI<br>3 |
| A1            | 2         | 3         | 3         | 2         | 3         | 3         | 3         | 3         | 3         |
| A2            | 2         | 5         | 5         | 3         | 4         | 3         | 3         | 4         | 4         |
| A3            | 3         | 4         | 4         | 3         | 3         | 2         | 2         | 2         | 2         |
| A4            | 4         | 5         | 4         | 1         | 2         | 2         | 1         | 2         | 2         |
| B1            | 7         | 10        | 10        | 7         | 9         | 7         | 2         | 2         | 23        |
| B2            | 10        | 11        | 9         | 6         | 8         | 7         | 5         | 7         | 6         |
| B3            | 7         | 8         | 5         | 5         | 7         | 4         | 4         | 5         | 5         |
| B4            | 7         | 9         | 5         | 3         | 3         | 4         | 4         | 4         | 3         |
| C1            | 10        | 9         | 9         | 10        | 11        | 10        | 13        | 11        | 15        |
| C2            | 8         | 9         | 8         | 7         | 8         | 8         | 12        | 10        | 9         |
| C3            | 6         | 8         | 7         | 5         | 6         | 6         | 9         | 8         | 7         |
| C4            | 5         | 5         | 5         | 4         | 5         | 5         | 6         | 6         | 6         |
| D1            | 4         | 5         | 5         | 3         | 4         | 5         | 5         | 5         | 3         |
| D2            | 10        | 11        | 10        | 8         | 7         | 9         | 13        | 10        | 12        |
| D3            | 6         | 8         | 7         | 5         | 8         | 7         | 8         | 9         | 9         |
| D4            | 4         | 7         | 5         | 3         | 6         | 6         | 4         | 5         | 6         |