



KEMENTERIAN PENDIDIKAN, KEBUDAYAAN,  
RISET, DAN TEKNOLOGI  
UNIVERSITAS NEGERI YOGYAKARTA  
**FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM**  
Kampus Karangmalang Yogyakarta 55281  
Telepon (0274) 565411 Pesawat 217, (0274) 565411 (TU), fax. (0274) 548203  
Laman : [fmipa.uny.ac.id](http://fmipa.uny.ac.id), E-mail : [Surel\\_fmipa@uny.ac.id](mailto:Surel_fmipa@uny.ac.id)

KEPUTUSAN DEKAN FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM  
Nomor : B/123/UN.34.13/HK.03/2022

TENTANG  
**TUGAS MENGAJAR DAN MENGUJI DOSEN**  
SEMESTER GASAL TAHUN AKADEMIK 2022/2023

DEKAN FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM

- Menimbang : bahwa untuk pelaksanaan tugas pendidikan dan pengajaran pada semester Gasal tahun Akademik 2022/2023, perlu menetapkan Keputusan Dekan tentang **Tugas Mengajar dan Menguji Dosen Mata Kuliah** semester Gasal tahun Akademik 2022/2023;
- Mengingat :
1. Undang-undang nomor 12 tahun 2012 tentang Pendidikan Tinggi (Lembaran Negara Republik Indonesia Tahun 2012 Nomor 158, Tambahan Lembaran Negara Republik Indonesia Nomor 5336);
  2. Peraturan Pemerintah Nomor 4 Tahun 2014 tentang Penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi (Lembaran Negara Republik Indonesia Tahun 2014 Nomor 16, Tambahan Lembaran Negara Republik Indonesia Nomor 5500);
  3. Peraturan Menteri Riset, Teknologi, dan Pendidikan Tinggi Nomor 35 Tahun 2017 tentang Statuta Universitas Negeri Yogyakarta;
  4. Peraturan Menristek Dikti Nomor 2 Tahun 2019 tentang OTK Universitas Negeri Yogyakarta;
  5. Keputusan Rektor Universitas Negeri Yogyakarta Nomor 1 Tahun 2019 tentang Peraturan Akademik Universitas Negeri Yogyakarta;
  6. Keputusan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 5723/MPK/RHS/KP/2021 tentang Pengangkatan Rektor Universitas Negeri Yogyakarta Periode Tahun 2021-2025 ;
  7. Keputusan Rektor Universitas Negeri Yogyakarta Nomor 1.27/UN34/IX/2019 tentang Pemberhentian dan Pengangkatan Dekan Fakultas di Universitas Negeri Yogyakarta;
  8. SK Rektor Nomor 2.7/UN34/VIII/2020 Tanggal 7 Agustus 2020 tentang Pemindahan Program Magister dan Doktor Bidang Ilmu Monodisipliner dari Pascasarjana ke Jurusan ke Fakultas Tahap Pertama;

M E M U T U S K A N :

Menetapkan : KEPUTUSAN DEKAN TENTANG TUGAS MENGAJAR DAN MENGUJI DOSEN SEMESTER GASAL TAHUN AKADEMIK 2022/2023

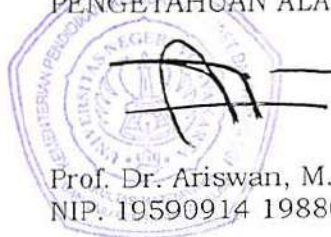
KESATU : Dosen yang namanya sebagaimana dimaksud dalam Lampiran merupakan dosen tetap Fakultas Matematika dan Ilmu Pengetahuan Alam Universitas Negeri Yogyakarta yang disertai Tugas Mengajar dan Menguji pada Semester Gasal tahun Akademik 2022/2023;

- KEDUA : Dosen yang namanya tersebut sebagaimana dimaksud dalam diktum kesatu mengampu dan menguji mata kuliah program studi masing-masing sebagaimana dimaksud dalam Lampiran;
- KETIGA : Biaya yang diperlukan dengan adanya keputusan ini dibebankan pada anggaran DIPA – BLU Fakultas Matematika dan Ilmu Pengetahuan Alam Tahun 2022;
- KEEMPAT : Keputusan ini berlaku pada tanggal 29 Agustus 2022 sampai dengan 31 Januari 2023

TEMBUSAN Keputusan Dekan ini disampaikan kepada :

1. Rektor UNY;
2. Kepala Biro UNY;
3. Para Wakil Dekan Di FMIPA UNY;
4. Para Koorprodi di FMIPA UNY
5. Koordinator Administrasi di FMIPA
6. Sekretaris Administrasi di FMIPA UNY;
7. Bendahara Gaji FMIPA UNY;
8. Kepala KPKN di Yogyakarta;
9. Yang bersangkutan untuk diketahui dan dilaksanakan;

Ditetapkan di Yogyakarta  
Pada tanggal, 29 Agustus 2022  
DEKAN FAKULTAS MATEMATIKA DAN ILMU  
PENGETAHUAN ALAM



Prof. Dr. Ariswan, M.Si  
NIP. 19590914 198803 1 003<sub>y</sub>

Lampiran SK Dekan FMIPA UNY

Nomor : B/123/UN34.13/HK.03/2022

Tanggal : 29 Agustus 2022

DAFTAR TUGAS MENGAJAR DAN Menguji DOSEN  
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM - UNIVERSITAS NEGERI YOGYAKARTA  
SEMESTER GASAL TAHUN AKADEMIK 2022/2023

Nama : Prof. Dr. Hari Sutrisno, M.Si.  
NIP : 196704071992031002  
Pangkat : Pembina Utama Madya  
Golongan : IV/d  
Jabatan : Guru Besar  
NPWP : 25.301.586.1-542.000

| No | Kode MK | Mata Kuliah                      | SKS Matakuliah | Sem | Prodi                 | Rombel                 | Jenis | SKS Rombel | Beban Mengajar               | Jumlah Peserta   | Keterangan |  |
|----|---------|----------------------------------|----------------|-----|-----------------------|------------------------|-------|------------|------------------------------|------------------|------------|--|
| 1  | KIM6223 | Kristalokimia                    | 2              | 5   | KIMIA - S1            | F                      | Teori | 2          | 2,00                         | 30               |            |  |
| 2  | KIM6223 | Kristalokimia                    | 2              | 5   | KIMIA - S1            | E                      | Teori | 2          | 2,00                         | 35               |            |  |
| 3  | KIM6223 | Kristalokimia                    | 2              | 5   | KIMIA - S1            | B                      | Teori | 2          | 2,00                         | 35               |            |  |
| 4  | MPK8206 | Kimia Struktur Anorganik         | 2              | 1   | PENDIDIKAN KIMIA - S2 | Pend. Kimia B          | Teori | 2          | 2,00                         | 23               |            |  |
| 5  | MPK8206 | Kimia Struktur Anorganik         | 2              | 1   | PENDIDIKAN KIMIA - S2 | Pend. Kimia A          | Teori | 2          | 2,00                         | 20               |            |  |
| 6  | MPK8218 | Topik Spesial dalam Ilmu Kimia   | 2              | 1   | PENDIDIKAN KIMIA - S2 | Pend. Kimia S2 Pilihan | Teori | 2          | 1,00                         | 7                | TIM        |  |
| 7  | FM18303 | Metodologi Penelitian Pendidikan | 3              | 1   | PENDIDIKAN KIMIA - S2 | Pend. Kimia A          | Teori | 3          | 1,50                         | 19               | TIM        |  |
| 8  | MPK9210 | Penulisan Proposal Disertasi     | 2              | 3   | PENDIDIKAN KIMIA - S3 | KIMIA S3 (Pend. Kimia) | Teori | 2          | 1,00                         | 1                | TIM        |  |
|    |         |                                  |                |     |                       |                        |       |            | <b>Jumlah Beban Mengajar</b> | <b>13,50 SKS</b> |            |  |



Prof. Dr. Ariswan, M.Si  
NIP. 195909141988031003



UNIVERSITAS NEGERI YOGYAKARTA  
**FAKULTAS MATEMATIKA DAN ILMU  
 PENGETAHUAN ALAM**

**DAFTAR HADIR KULIAH  
 SEMESTER TAHUN AJARAN 2022/2023**

Program Studi : KIMIA - S1  
 Kelas : E  
 Jumlah Peserta : 35

Nama Dosen : Prof. Dr. Hari Sutrisno, M.Si.  
 Mata Kuliah : KIM6223 - Kristalokimia

| No.  | No. Mhs.    | Nama Mahasiswa                         | Tanggal   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           | Ket. |
|--|-------------|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|
|  |             |  | 31/08     | 07/09     | 14/09     | 21/09     | 28/09     | 05/10     | 12/10     | 19/10     | 26/10     | 02/11     | 09/11     | 16/11     | 23/11     | 30/11     | 07/12     | 14/12     |      |
| 1  | 20307141030 | Eka Lestari                            | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 2  | 20307141031 | Fitriana Pramesthi Kusuma Dewi         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 3  | 20307141032 | Anindya Putri Nurvitasari              | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 4  | 20307141033 | Annisa Nur Khusnina                    | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 5  | 20307141034 | Simon Umbu Kora Iki                    | H         | H         | M         | TH        | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 6  | 20307141035 | Li Akwani                              | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 7  | 20307141036 | Arni Febriyanti                        | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 8  | 20307141037 | Ovita Rini Priyanti                    | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 9  | 20307141038 | Muhammad Rhamdhani                     | H         | H         | H         | S         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 10   | 20307141039 | Putri Verdiana Dwi Cahyani             | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 11   | 20307141040 | Yumna Syarifah                         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 12   | 20307141041 | Sigit Khoirul Anam                     | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 13   | 20307141042 | Novita Eka Ariyani                     | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 14   | 20307141044 | Igbalul Krido Amalluddin               | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 15   | 20307141045 | Kharisma Indrasgoro Suksmaji           | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 16   | 20307141046 | Yeni Adi Tiani                         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 17   | 20307141047 | Salma Qinthara                         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 18   | 20307141048 | Rifki Cholil Lulloh                    | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 19   | 20307141049 | Newulan Mutia Ayu Rahmaniza Suharyanta | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 20   | 20307141050 | Luthfia Wiraputri                      | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| <b>Jumlah Mahasiswa yang hadir</b>         |             |  | <b>35</b> | <b>33</b> | <b>34</b> | <b>33</b> | <b>35</b> | <b>35</b> | <b>34</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> |      |
| <b>Tanda tangan (paraf) dosen pengajar</b> |             |  |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |      |



UNIVERSITAS NEGERI YOGYAKARTA  
**FAKULTAS MATEMATIKA DAN ILMU  
 PENGETAHUAN ALAM**

**DAFTAR HADIR KULIAH  
 SEMESTER TAHUN AJARAN 2022/2023**

Program Studi : KIMIA - S1  
 Kelas : E  
 Jumlah Peserta : 35

Nama Dosen : Prof. Dr. Hari Sutrisno, M.Si.  
 Mata Kuliah : KIM6223 - Kristalokimia

| No.  | No. Mhs.    | Nama Mahasiswa                    | Tanggal   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           | Ket. |
|--|-------------|-----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------|
|  |             |                                   | 31/08     | 07/09     | 14/09     | 21/09     | 28/09     | 05/10     | 12/10     | 19/10     | 26/10     | 02/11     | 09/11     | 16/11     | 23/11     | 30/11     | 07/12     | 14/12     |      |
| 21   | 20307141051 | Rachma Tantri Ayuningtyas         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 22   | 20307141052 | Alifia Sri Fadhillah              | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 23   | 20307141053 | Anita Hayatunnufus                | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 24   | 20307141055 | Khozain Khoiriyah                 | H         | TH        | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 25   | 20307141056 | Avilla Adventhia Nanda            | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 26   | 20307141057 | Iqbal Rahmandito                  | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 27   | 20307141058 | Oktavia Pratiwi                   | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 28   | 20307141059 | Nanda Firman Hadi                 | H         | H         | H         | H         | H         | H         | TH        | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 29   | 20307141060 | Zulfa Salsabila                   | H         | TH        | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 30   | 20307141061 | Muhammad Jauharul Lathif Ramadhan | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 31   | 20307141062 | Rhiski Husniati                   | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 32   | 20307141063 | Ayu Dewi Lestari                  | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 33   | 20307141065 | Nenny Do'aisyah                   | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 34   | 20307141066 | Dwi Nur Kholifah                  | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| 35   | 22307144016 | Ansius Exaudi Sitorus             | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         | H         |      |
| <b>Jumlah Mahasiswa yang hadir</b>         |             |                                   | <b>35</b> | <b>33</b> | <b>34</b> | <b>33</b> | <b>35</b> | <b>35</b> | <b>34</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> | <b>35</b> |      |
| <b>Tanda tangan (paraf) dosen pengajar</b> |             |                                   |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |      |



UNIVERSITAS NEGERI YOGYAKARTA  
**FAKULTAS MATEMATIKA DAN ILMU  
 PENGETAHUAN ALAM**

**MONITORING KEGIATAN MENGAJAR DOSEN  
 SEMESTER TAHUN AJARAN 2022/2023  
 FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM UNY**

Program Studi : KIMIA - S1  
 Kelas : E  
 Nama Dosen : Prof. Dr. Hari Sutrisno, M.Si.  
 Mata Kuliah : KIM6223 - Kristalokimia

| No. | Pertemuan Ke | Hari/Tanggal            | Materi Yang diajarkan                     | Jam      |          | Jml Mhsw | Paraf Dosen | Paraf Mhsw | Keterangan |
|-----|--------------|-------------------------|---|----------|----------|----------|-------------|------------|------------|
|     |              |                         |   | Masuk    | Keluar   |          |             |            |            |
| 1   | 1            | Rabu, 31 Agustus 2022   | Pendahuluan                               | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 2   | 2            | Rabu, 7 September 2022  | Sintesis Kristal                          | 11:10:00 | 12:50:00 | 33       |             |            |            |
| 3   | 3            | Rabu, 14 September 2022 | Unsur dan Operasi Simetri                 | 11:10:00 | 12:50:00 | 34       |             |            |            |
| 4   | 4            | Rabu, 21 September 2022 | Penentuan Grup Titik Molekul              | 11:10:00 | 12:50:00 | 33       |             |            |            |
| 5   | 5            | Rabu, 28 September 2022 | Unsur dan Simetri Kristal                 | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 6   | 6            | Rabu, 5 Oktober 2022    | Grup Kristalin                            | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 7   | 7            | Rabu, 12 Oktober 2022   | Penentuan Sistem Kristal dan Grup Kristal | 11:10:00 | 12:50:00 | 34       |             |            |            |
| 8   | 8            | Rabu, 19 Oktober 2022   | UAS                                       | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 9   | 9            | Rabu, 26 Oktober 2022   | Kristal Sederhana                         | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 10  | 10           | Rabu, 2 Nopember 2022   | Sumber Sinar-X                            | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 11  | 11           | Rabu, 9 Nopember 2022   | Penentuan Bidang Kristal Kubik            | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 12  | 12           | Rabu, 16 Nopember 2022  | Analisis XRD-Trial & Eror                 | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 13  | 13           | Rabu, 23 Nopember 2022  | Analisis XRD-Analitik                     | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 14  | 14           | Rabu, 30 Nopember 2022  | Kristal Biner                             | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 15  | 15           | Rabu, 7 Desember 2022   | Penentuan dan Penggambaran Kristal        | 11:10:00 | 12:50:00 | 35       |             |            |            |
| 16  | 16           | Rabu, 14 Desember 2022  | UAS                                       | 11:10:00 | 12:50:00 | 35       |             |            |            |

Yogyakarta, .....

Mengetahui,  
 Ketua Jurusan

(.....)

**FORM PENILAIAN**  
**KELAS Reguler**  
**SEMESTER Genap TAHUN 2022**

**PROGRAM STUDI** : KIMIA - S1  
**PENGAMPU** : Prof. Dr. Hari Sutrisno M.Si.  
**JUMLAH PESERTA** : 35  
**KELAS** : E

| <b>NO</b> | <b>NIM</b>  | <b>NAMA</b>                               | <b>NILAI [HURUF]</b> |
|-----------|-------------|---|----------------------|
| 1         | 20307141030 | EKA LESTARI                               | B                    |
| 2         | 20307141031 | Fitriana Pramesthi Kusuma<br>Dewi         | B-                   |
| 3         | 20307141032 | Anindya Putri Nurvitasari                 | C+                   |
| 4         | 20307141033 | Annisa Nur Khusnina                       | B-                   |
| 5         | 20307141034 | Simon Umbu Kora Iki                       | E                    |
| 6         | 20307141035 | LI Akwani                                 | E                    |
| 7         | 20307141036 | Arni Febriyanti                           | B-                   |
| 8         | 20307141037 | Ovita Rini Priyanti                       | B-                   |
| 9         | 20307141038 | Muhammad Rhamdhani                        | C+                   |
| 10        | 20307141039 | Putri Verdiana Dwi Cahyani                | B                    |
| 11        | 20307141040 | Yumna Syarifah                            | B-                   |
| 12        | 20307141041 | Sigit Khoirul Anam                        | C+                   |
| 13        | 20307141042 | NOVITA EKA ARIYANI                        | C+                   |
| 14        | 20307141044 | Igbalul Krido Amalluddin                  | B-                   |
| 15        | 20307141045 | Kharisma Indrasgoro Suksmaji              | C+                   |
| 16        | 20307141046 | Yeni Adi Tiani                            | B-                   |
| 17        | 20307141047 | Salma Qinthara                            | B-                   |
| 18        | 20307141048 | Rifki Cholil Lulloh                       | B-                   |
| 19        | 20307141049 | Newulan Mutia Ayu Rahmaniza<br>Suharyanta | B-                   |
| 20        | 20307141050 | Luthfia Wiraputri                         | E                    |
| 21        | 20307141051 | Rachma Tantri Ayuningtyas                 | B-                   |
| 22        | 20307141052 | Alifia Sri Fadhilah                       | B-                   |
| 23        | 20307141053 | Anita Hayatunnufus                        | B-                   |
| 24        | 20307141055 | Khozain Khoiriyah                         | A-                   |
| 25        | 20307141056 | Avilla Adventhia Nanda                    | B-                   |
| 26        | 20307141057 | Iqbal Rahmandito                          | E                    |
| 27        | 20307141058 | Oktavia Pratiwi                           | B-                   |
| 28        | 20307141059 | Nanda Firman Hadi                         | B-                   |
| 29        | 20307141060 | Zulfa Salsabila                           | C+                   |
| 30        | 20307141061 | Muhammad Jauharul Lathif<br>Ramadhan      | B                    |

|    |             |                       |    |
|----|-------------|-----------------------|----|
| 31 | 20307141062 | Rhiski Husniati       | B- |
| 32 | 20307141063 | Ayu Dewi Lestari      | C+ |
| 33 | 20307141065 | Nenny Do'aisyah       | B- |
| 34 | 20307141066 | Dwi Nur Kholifah      | B- |
| 35 | 22307144016 | Ansius Exaudi Sitorus | C+ |

Rekap Nilai : A = ..... , B = ..... , C = ..... , D = ..... , E/K = .....

Yogyakarta , .....

Dosen/Koord. Team Penguji :

(.....)





**UNIVERSITAS NEGERI YOGYAKARTA**  
**FACULTY MATHEMATICS AND NATURALE SCIENCE**  
**BACHELOR OF EDUCATION IN CHEMISTRY**

**SEMESTER LEARNING PLAN (SLP)**

| <b>COURSE</b>                                 | <b>CODE</b>                    | <b>COURSE GROUP</b>  | <b>CREDIT UNIT (sks)</b> | <b>SEM.</b>                  | <b>DEVELOPMENT DATE</b> |
|---|--------------------------------|--|--------------------------|------------------------------|-------------------------|
| Crystallochemistry                            | KIM 6210                       | Course in Bachelor of Education in Chemistry   | 2                        | 6                            | May 29, 2020            |
| Authorization                                 | <b>Course Lecturer</b>         |  |                          | <b>Head of Study Program</b> |                         |
|   | Prof. Dr. Hari Sutrisno, M.Si. |  |                          | Dr. Retno Arioningrum, M.Si  |                         |
| <b>Learning Outcomes (LO) – Study Program</b> |                                |  |                          |                              |                         |
| <b>Program Learning Outcomes (PLO)</b>        | <b>Attitude and Value</b>      | PLO1. Demonstrate religious attitudes and human values   |                          |                              |                         |
|   | <b>Work Ability</b>            | PLO2. Able to follow the development of science and technology as a supporter of lifelong learning   |                          |                              |                         |
|   | <b>Knowledge Assignment</b>    | PLO3. Having an independent attitude, being able to adapt and be responsible for completing tasks<br>PLO4. Communicate ideas or ideas verbally or in writing |                          |                              |                         |

|                                 |  |   |
|---------------------------------|--|---|
|                                 | <b>Authority and Responsibility</b>  | PL05. Having the ability to innovate in chemical research techniques  |
|                                 | <b>CLO - Course Outcomes</b>   |   |
| <b>Course Outcomes</b>          | CLO1   | Demonstrate an awareness of responsible and ethical conducts as well integrity in the context of their profession and obligations to society  |
|                                 | CLO2   | Demonstrate knowledge of advanced theories and methods of chemistry   |
|                                 | CLO3   | Demonstrate proficiency in analyzing, applying, and solving engineering problems using the acquired chemical methods.   |
|                                 | CLO4   | Demonstrate the problem solving ability in understand, extract and analyze engineering problems and reorganize the knowledge in chemistry forms for specific purposes   |
|                                 | CLO5   | Ability to convey ideas on chemistry knowledge clearly and effectively in both written and spoken forms. In addition, ability to work collaboratively as part of a team undertaking a range of different team roles |
|                                 | CLO6   | Demonstrate the awareness of contemporary issues in Inorganic chemistry and the ability to respond the challenges   |
|                                 | CLO7   | Ability to pursue independent study and demonstrate the awareness for lifelong learning and professional development  |
| Short description of the course | Crystallochemistry courses are courses for students of Bachelor of Education in Chemistry with descriptions including: chemical structure description, symmetry and molecular groups, chemical bonds and lattice energy, molecular structures 1(compounds of the main group elements) and 2 (transition metal compounds), crystal gratings, symmetry and groups crystals, X-ray diffraction instruments and determination of simple crystal structures. This course aims to enable students to understand the structure and grid contained in molecular compounds 1 and 2. |   |
| Learning Materials / Subjects   | Subjects include:<br>1. Description of chemical structure<br>2. Theory of repulsion of valence electron pairs  |   |

|                            |  |   |
|----------------------------|--|---|
|                            | 3. Symmetry and molecular groups<br>4. Chemical bonds and lattice energy<br>5. Atom size size<br>6. Symmetry and crystal groups<br>7. Molecular structure 1: compounds of the main group elements<br>8. Molecular structure 2: transition metal compounds<br>9. Structure of nonmetal elements<br>10. X-ray diffractometer<br>11. Determination of simple crystal structure  |   |
| <b>References</b>          | <b>Primary</b>   |   |
|                            | P1. Muller, U., (2006). <i>Inorganic Structural Chemistry, second edition</i> . West Sussex: John Wiley & Sons Ltd<br>P2. Huheey, J. E., Keiter, E. A. & Keiter, R. L. (1993). <i>Inorganic Chemistry: Principle of Structure and Reactivity</i> . New York : Harper Collins College Publisher.<br>P3. Li, W. K., Zhou, G. D. & Wai Mak, T. C. (2008). <i>Advanced Structural Inorganic Chemistry</i> . New York: Oxford Science Publication<br>P4. Miessler, G. L. & Tarr, D. A. (2009). <i>Inorganic Chemistry, third edition</i> . New Delhi: Pearson Education . |   |
|                            | <b>Support</b>   |   |
|                            | S1. West, A. R. (1989). <i>Solid State Chemistry and Its Applications</i> . Singapore: John Wiley & Sons Ltd.<br>S2. Journal Inorganic Chemistry   |   |
| <b>Instructional Media</b> | <b>Software</b>  | <b>Hardware</b>                             |
|                            | File dan Powerpoint  | Laptop<br>Board and stationery<br>Projector |
| <b>Team-Teaching</b>       | -  |   |
| <b>Prerequisite Course</b> | -  |   |

## LEARNING ACTIVITIES

| week | Sub-CLO   | Indicator   | Criteria & Form of Assessment   | Learning Method (Estimated Time)           | Learning Materials (Library) | Quality of Assessment (%) |
|------|---|---|---|--|------------------------------|---------------------------|
| 1    | Describe chemical structure and symmetry                                    | <ol style="list-style-type: none"> <li>1. Students can describe chemical structures</li> <li>2. Students are able to explain the symmetry of a chemical compound</li> </ol> | Assessment Criteria: logic and meaningfulness<br>Form of assessment: Observation with the class<br>Observation rubric | <i>Direct Instruction</i><br>2 x 50 minute | P1, P2, P3                   | 2%                        |
| 2-3  | Analyze polymorphism and the phase of transition from chemical compounds    | Students are able to analyze the polymorphism and transition phase of various chemical compounds  | Assessment Criteria: logic and meaningfulness<br>Form of assessment: Observation with the class<br>Observation rubric | <i>Direct Instruction</i><br>4 x 50 minute | P1, P2                       | 2%                        |
| 4-5  | Analyzing chemical bonds and lattice energy contained in chemical compounds | Students are able to analyze chemical bonds and lattice energy that occur in various chemical compounds   | Assessment Criteria: logic and meaningfulness<br>Form of assessment: Observation with the class<br>Observation rubric | <i>Direct Instruction</i><br>2 x 50 minute | P1, P4                       | 2%                        |

|          |  |   |  |   |            |            |
|----------|--|---|--|---|------------|------------|
| 6-7      | Explain atomic size effects  | <ol style="list-style-type: none"> <li>1. Students are able to explain the definition of atomic size effects</li> <li>2. Students can explain the factors that influence the size effect of an atom</li> </ol>  | <p>Assessment Criteria: logic and meaningfulness</p> <p>Form of assessment: Observation with the class</p> <p>Observation rubric</p> | <p><i>Direct Instruction</i></p> <p>2 x 50 minute</p>                 | P1, P3, P4 | 2%         |
| <b>8</b> | <b>Midterm Exam</b>  |   |  |   |            | <b>40%</b> |
| 9-10     | Analyze the molecular structure in group 1: compounds of the main group elements | Students are able to analyze group theory contained in the compounds of the main group elements   | <p>Assessment Criteria: logic and meaningfulness</p> <p>Form of assessment: Observation with the class</p> <p>Observation rubric</p> | <p>Direct Instruction</p> <p>Individual task</p> <p>6 x 50 minute</p> | P1, P2, P3 | 2%         |
| 11-12    | Analyzing the molecular structure of group 2: transition metal compounds         | Students are able to analyze group theory contained in the compounds of the main group elements   | <p>Assessment Criteria: logic and meaningfulness</p> <p>Form of assessment: Observation with the class</p> <p>Observation rubric</p> | <p>Direct Instruction</p> <p>Individual task</p> <p>4 x 50 minute</p> | P1, P3     | 2%         |
| 13       | Analyze the structure of nonmetal elements                                       | <ol style="list-style-type: none"> <li>1. Students are able to analyze chemical structures not metals</li> <li>2. Students are able to analyze group theory and lattice found in non-metal compounds</li> </ol> | <p>Assessment Criteria: logic and meaningfulness</p> <p>Form of assessment: Observation with the class</p> <p>Observation rubric</p> | <p>Direct Instruction</p> <p>Individual task</p> <p>4x 50 minute</p>  | P1, P3, S1 | 4%         |

|           |                                  |   |  |   |        |            |
|-----------|----------------------------------|---|--|---|--------|------------|
| 14-15     | Analyze structures like diamonds | <ol style="list-style-type: none"> <li>1. Students are able to analyze chemical structures not metals</li> <li>2. Students are able to analyze group theory and lattice found in non-metal compounds</li> </ol> | <p>Assessment Criteria: logic and meaningfulness</p> <p>Form of assessment: Observation with the class</p> <p>Observation rubric</p> | <p>Direct Instruction</p> <p>Individual task</p> <p>4 x 50 minute</p> | P1, S1 | 4%         |
| <b>16</b> | <b>Final Exams</b>               |   |  |   |        | <b>40%</b> |

#### ASSESSMENT WEIGHT

| No            | CLO               | Object of assessment   | Valuation Techniques    | Quality     |
|---------------|-------------------|--|-------------------------|-------------|
| 1             | CLO 3             | The independent task of writing and / or listening skills          | Assignment              | 15%         |
| 2             | CLO 5 dan 7       | Structured tasks are reading and / or writing skills               | Assignment              | 15%         |
| 3             | CLO 3, 4          | Speaking ability and presentation skills journal analysis (Skills) | Speaking ability        | 10%         |
| 4             | CLO 1 dan 2       | Attitude and Value   | Observation of Attitude | 10%         |
| 5             | CLO 3, 5 dan 6    | Midterm Exam   | Written Test            | 25%         |
| 6             | CLO 3; 6; dan 7.1 | Final Exam   | Written Test            | 25%         |
| <b>Jumlah</b> |                   |  |                         | <b>100%</b> |

## PLO AND CLO MAPPING

|      | PLO 1 | PLO 2 | PLO 3 | PLO 4 | PLO 5 |
|------|-------|-------|-------|-------|-------|
| CLO1 | √     |       |       |       |       |
| CLO2 |       | √     |       |       |       |
| CLO3 |       |       | √     |       |       |
| CLO4 |       |       | √     |       |       |
| CLO5 |       | √     |       |       | √     |
| CLO6 |       |       |       | √     | √     |
| CLO7 |       |       |       | √     |       |

Knowing,  
Head of Study Program

Dr. Retno Arianingrum, M.Si  
NIP

Yogyakarta, April 18, 2020  
Course Lecturer

Prof. Dr. Hari Sutrisno, M.Si  
NIP 196704071992031002

## ANALYSIS OF ACHIEVEMENT CLO / PLO

**Study Program** : Bachelor of Education in Chemistry

**Course** : Crystallochemistry

**Code:** MKA6210

**Credit Unit (sks) :** 2 (Teory)

**Semester** : 6

**Prerequisite Course :** -

**Course Lecturer** : Prof. Dr. Hari Sutrisno, M.Si

### A. TABLE OF OF ACHIEVEMENT CLO

| Task/ Exam         | CLO 1 | CLO 2 | CLO 3 | CLO 4 | CLO 5 | CLO 6 | CLO 7 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| Structured Tasks 1 |       |       |       |       | 78    | 75    |       |
| Structured Tasks 2 |       |       |       | 84    |       |       | 85    |
| Independent task 1 |       |       |       |       |       |       |       |
| Independent task 2 |       |       |       |       |       |       |       |
| Keterampilan       |       |       | 80    |       |       |       |       |
| Sikap              | 85    | 86    |       |       |       |       |       |
| Midterm Exam       |       |       |       | 72    |       |       |       |
| Final Exam         |       |       |       | 78    |       |       |       |
| <b>AVERAGE</b>     | 85    | 86    | 80    | 76    | 74,5  | 71    | 82    |

### B. TABLE OF OF ACHIEVEMENT PLO

|              | CLO 1 | CLO 2 | CLO 3 | CLO 4 | CLO 5 | CLO 6 | CLO 7 | AVERAGE   |
|--------------|-------|-------|-------|-------|-------|-------|-------|-----------|
| <b>PLO 1</b> | 85    |       |       |       |       |       |       | <b>85</b> |
| <b>PLO 2</b> |       | 86    |       |       |       |       |       | <b>86</b> |
| <b>PLO 3</b> |       |       | 80    | 76    |       |       |       | <b>78</b> |



