# STUDENT HANDBOOK


## STATISTICS STUDY PROGRAM DEPARTMENT OF MATHEMATICS EDUCATION
## FACULTY OF MATHEMATICS AND NATURAL SCIENCES
## UNIVERSITAS NEGERI YOGYAKARTA
## 2024

# Preface

Praise be to God Almighty for His blessings and grace so that the student handbook of the Statistics Study Program, Department of Mathematics Education, Faculty of Mathematics and Natural Sciences, Universitas Negeri Yogyakarta (UNY) can be completed. As the name implies, this book is prepared to guide students in undergoing lectures in the Statistics bachelor study program. This book also aims to introduce students to various organizations, activities, and facilities available at UNY. Thus, students can develop themselves optimally while taking the bachelor program at UNY.

Criticism, suggestions, and recommendations from various parties are always welcome for the improvement of this book in the future.

Yogyakarta, May 2024

Team

# Table of Contents

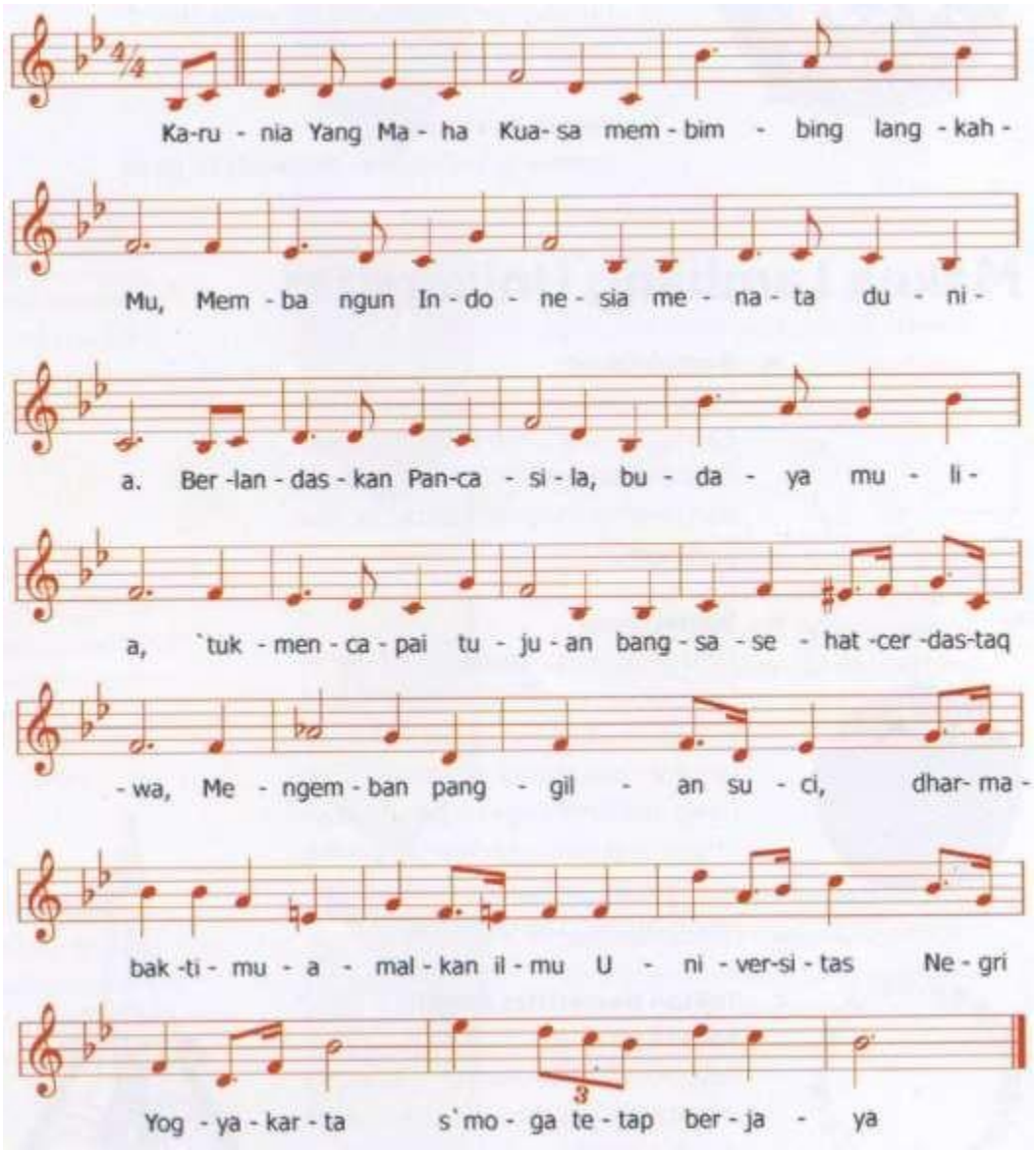
## The emblem of UNY


**Description:**

The emblem is in the form of a pentagonal lotus flower, blue base color. The inscription Yogyakarta State University is made in a circle with calligraphic writing UNY, a yellow Garuda Bird wing image, and in the center there is a monument image, with a mustaka in the form of a three-split fire, stairs, chest, body, and monument legs.

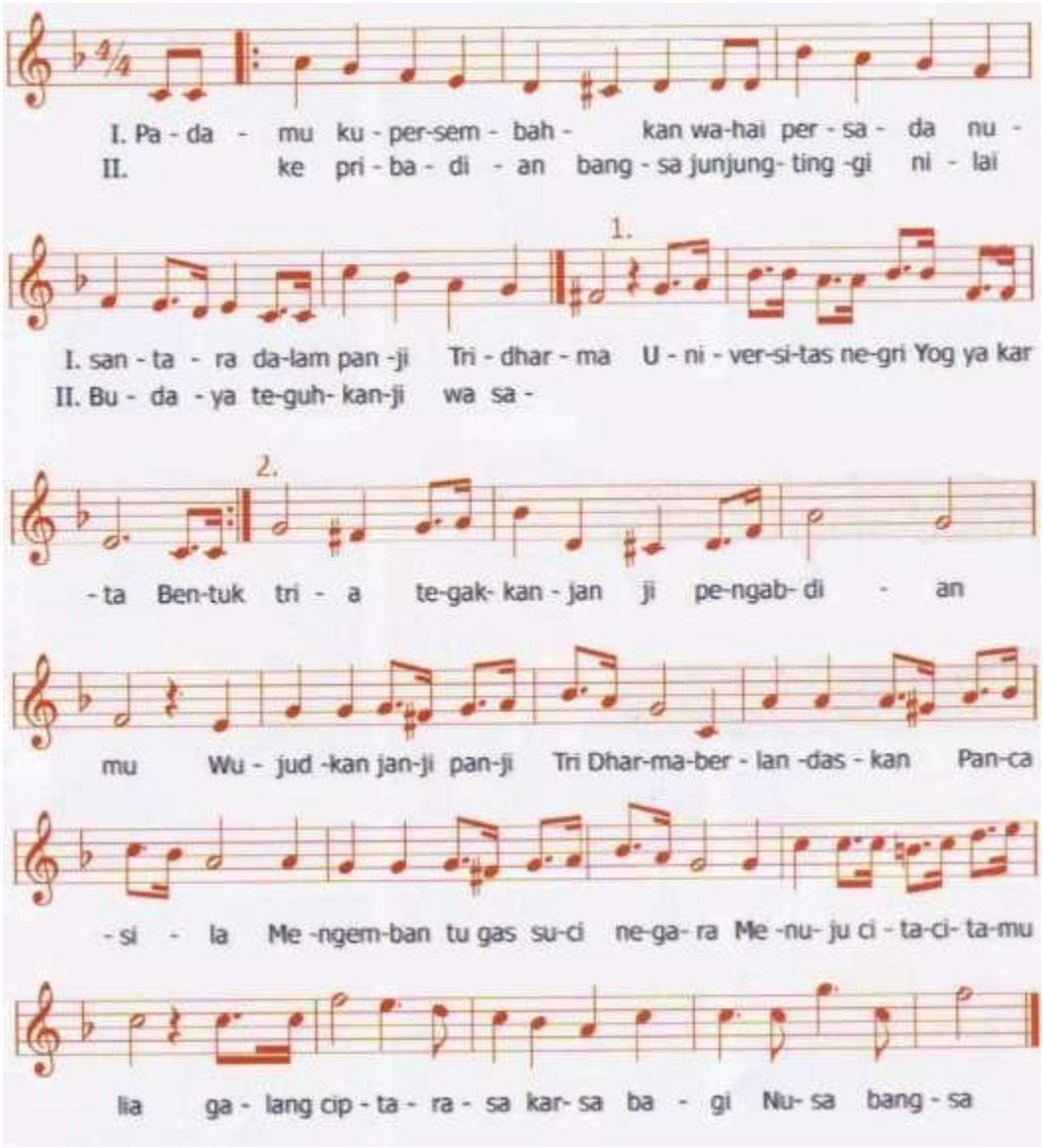
## Hymne Universitas Negeri Yogyakarta (UNY)

L,S: Heni Kusumawati



## Mars Universitas Negeri Yogyakarta (UNY)

L,S: Agus Untung Yulianta



# 1. The Profile of Statistics Study Program

## A. Brief History

Every year, Universitas Negeri Yogyakarta (UNY) commemorates May 21 as its birth date. This date is the founding date of Institut Keguruan dan Ilmu Kependidikan (IKIP) Yogyakarta, the predecessor of UNY. IKIP Yogyakarta was inaugurated by the Minister of Higher Education and Science (PTIP) on May 21, 1964.

The history of IKIP Yogyakarta cannot be separated from the existence of the Faculty of Pedagogics (FP) of Gadjah Mada University (UGM) which was established on September 19, 1955. At that time, FP UGM had two sections, namely the Education Section and the Physical Education Section. In addition, there were also B1 and B2 courses in Pasti and Natural Sciences organized by the Faculty of Pasti and Natural Sciences UGM. On February 2, 1962, the Faculty of Pedagogics was split into three faculties, namely the Faculty of Education (FE), the Faculty of Physical Education (FPE), and the Faculty of Teacher Training and Education (FTTE). However, in 1963 the FPD was incorporated into the Department of Sports and became the College of Sports.

At that time the demand for education was getting higher so the demand for teaching staff was also high. FP UGM was so popular that the number of students in 1962 reached 1,469 people. To overcome this, then came the Decree of the Minister of Education and Culture No. 92 of 1962 concerning the establishment of the Institute of Teacher Education. On January 3, 1963, the unification between FKIP and IPG was implemented into Institut Keguruan dan Ilmu Kependidikan (IKIP) Yogyakarta. Likewise with FE which was then also incorporated into IKIP. In 1964, the B1-B2 Course in Pasti and Natural Sciences was also separated from UGM and merged into IKIP.

According to the Decree of the Rector of IKIP number 05 of 1965 concerning the Organizational Structure of IKIPYogyakarta, IKIP Yogyakarta has five faculties, namely the Faculty of Education, the Faculty of Teacher Training of Exata Sciences, the Faculty of Teacher Training of Literature and Arts, the Faculty of Teacher Training of Social Sciences, and the Faculty of Teacher Training of Engineering. At that time, FKIE had four departments, namely the Department of Pasti, Department of Natural Sciences, Department of Life Sciences, and Department of Chemistry.

Based on Government Regulation number 27 of 1981 concerning Faculty Arrangement and Presidential Decree number 54 of 1982, on September 7, 1982 there was a change in the name of FKIE to the Faculty of Mathematics and Natural Sciences Education (FPMIPA). Starting December 8, 1983, FPMIPA organized four departments namely Mathematics Education, Physics Education, Biology Education, and Chemistry Education.

In 1997, along with the change in the name of IKIP to Universitas Negeri Yogyakarta (UNY), FPMIPA opened new study programs, namely the Physics, Mathematics, Chemistry and Biology Study Programs in accordance with the Director General of Higher Education of the Ministry of Education and Culture of the Republic of Indonesia letter number 1259/DT/T/97 concerning permission to open non-educational study programs withinUNY. The name of FPMIPA also changed to the Faculty of Mathematics and Natural Sciences (FMIPA). Since then, the Department of Mathematics Education UNY has held two study programs, namely the Bachelor of Mathematics study program and the Bachelor of Mathematics Education study program.

In 2016, the Department of Mathematics Education UNY pioneered the establishment of a new study program, namely the Bachelor of Statistics Study Program, and was approved through Decree number 335/KPT/I/2017. This study program only started accepting new students in the 2018/2019 academic year. In 2021, the Bachelor of Statistics Study Program participated in BAN-PT accreditation and received good accreditation.

### B. Vision of Statistics Study Program

In 2025, it will become a Statistics study program that excels in computational-based educational and social science data analysis at the national level to produce creative and innovative graduates based on devotion, independence, and scholarship.

### C. Mision of Statistics Study Program

To fulfill this vision, Statistics Study Program UNY has the following four missions.

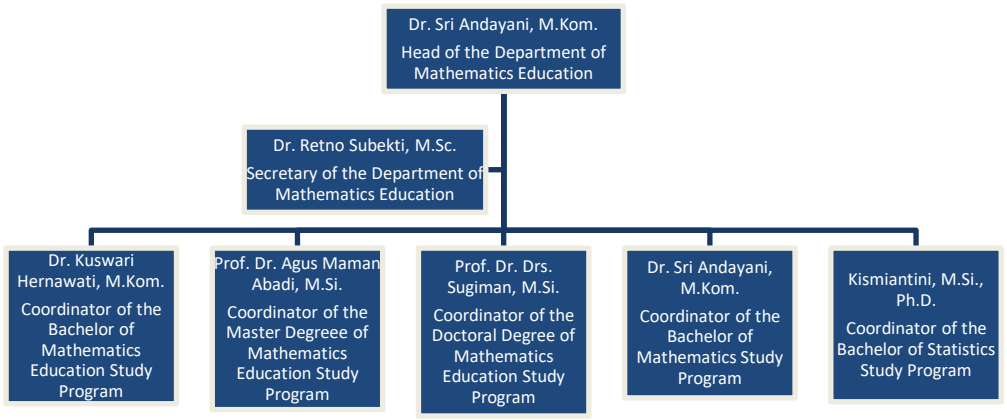
1. Organizing a study program that excels in the application of computation-based statistics at the local, regional and national levels.
2. Carrying out research and scientific publications in the field of statistics and its applications that are of national standard,
3. Providing scientific statistical services to the community in the fields of education, social, economics, business, actuarial, and health, and
4. Organizing good study program governance and fostering mutually beneficial cooperation with other institutions at the national level to support the implementation of the learning process, research and publication of scientific papers, and community service.

## D. Address

Address : Building D15 Faculty of Mathematics and Natural Sciences 3rd Floor, UNY Karangmalang Campus, Colombo Street no. 1,

Yogyakarta, Indonesia.
Zip Code : 55281
Phone : +62 274 548203, +62274 568168 psw. 1396
Fax : +62 274 548203 (Fakultas MIPA)
Website : https://stat.fmipa.uny.ac.id/

## E. Organization Structure




## F. Personnels

Information related to lecturer profiles can be seen at https://stat.fmipa.uny.ac.id/id/dosen.

## G. Education Facilities

Educational facilities or facilities managed by the Department of Mathematics Education include:

a. Secretariat / Department Room
b. Lecturer Room
c. Workshop Room
d. Computer Laboratory
e. Audio Laboratory
f. Micro teaching laboratory
g. Math Props Room
h. Thesis Exam Room


Computer Laboratory (left), Lecturer Room (right)

The facilities or facilities managed by the Faculty of Mathematics and Natural Sciences include:

1. Lecture room
2. Mathematics Student Association Room
3. Mushola
4. Parking Lot

## H. Scientific Publication Media

The Department of Mathematics Education of UNY manages several scientific publication media as follows.

Pythagoras: Jurnal Pendidikan Matematika

PYTHAGORAS: Jurnal Pendidikan Matematika is a scientific journal in the field of mathematics and mathematics education published in June & December. Accepted and published papers will be freely accessed in this website and the following abstracting & indexing databases:

a. Science and Technology Index (SINTA) by Kementerian Riset, Teknologi,dan Pendidikan Tinggi Republik Indonesia.
b. Indonesian Scientific Journal Database (ISJD)
c. Indonesian Publication Index (IPI)
d. Google Scholar
e. Directory of Open Access Jounals (DOAJ)
f. Crossref Search
g. Publick Knowledge Project (PKP) Index
h. Bielefeld University Library

The journal has been listed in ROAD ISSN and Open Science Directory by EBSCO information service.


Visit: https://journal.uny.ac.id/index.php/pythagoras

Jurnal Riset Pendidikan Matematika (JRPM)

Jurnal Riset Pendidikan Matematika (JRPM) is a scientific journal in the field of mathematics education published twice a year (in May & November). SinceApril 2017, the journal has been ACCREDITATED by the Ministry of (RistekDikti) of The Republic of Indonesia as an achievement for the peer-reviewed journal which has excellent quality in management and publication, effective until 2022. This journal is abstracted/Indexed in:

1. Science and Technology Index (SINTA) by Kementerian Riset, Teknologi,dan Pendidikan Tinggi Republik Indonesia.
2. Directory of Open Access Journal
3. Google Scholar
4. Indonesian Scientific Journal Database (ISJD)
5. Indonesia One Search
6. Indonesian Publication Index (IPI)
7. Crossref Search
8. Public Knowledge Project (PKP) Index
9. OCLC Worldcat
10. ResearchGate

The journal has been listed in ROAD ISSN as well as Open Science Directory by EBSCO information service.


Visit: https://journal.uny.ac.id/index.php/jrpm

Jurnal Statistics dan Sains Data

Jurnal Statistics dan Sains Data is a journal managed and published by the Faculty of Mathematics and Natural Sciences, Universitas Negeri Yogyakarta. This journal publishes original papers, research articles, case studies, and literature reviews in the fields of statistics and data science. The publishing procedures in this journal are peer-reviewed and apply scientific publishing ethics as determined by the Committee on Publication Ethics (COPE). The journal welcomes and also invites contributors particularly from the field of statistics, data science and their applications. There are two issues per year: October & April.

Visit: https://journal.student.uny.ac.id/ojs/index.php/jssd/index

# 2. Course System

**Bachelor Program** (S1) is a study program that has a minimum study load of 144 credits with an education period of 8 semesters.

**A. Academic Guidance**

After being accepted as a UNY student, the Department will appoint an academic advisor/mentor, also known as a guardian lecturer, for each student. The initial guidance will be done in class, while subsequent guidance is done 3-4 times each semester individually. The academic guidance includes:

1. Consultation for taking courses at the beginning of the semester,
2. Monitoring of learning progress at mid-semester,
3. Evaluation of lecture results at the end of the semester,
4. Consultation services for students who have problems,
5. Provide guidance on selecting and proposing scholarships,
6. Directing students to participate in off-campus activities (national/international seminars).

Students also need to consult with academic advisors when taking Internship or Bachelor Thesis. Academic advisors can be found in their respective offices (see p. 4), preferably by appointment.

**B. Semester Credit System**

The credit system is the implementation of education by stating the student's study load, the workload of the teaching staff, and the burden of organizing educational institutions in the form of credits. By using this system, each student can design a way to fulfill his entire study load by considering his personal abilities, talents, and interests. The credit system also facilitates the transfer of credits between departments or faculties in one university, even between universities.

Semester is a unit of time for the effective learning process for 16 (sixteen) weeks excluding the final semester exam. According to the Regulation of the Rector of Yogyakarta State University, during one academic year three semesters are held, namely:

1. Odd semester: September to January of the following year.
2. Even semester: February to June of the current year.
3. Short/between semester: July to August of the current year.

The overall learning that each student must undergo to complete the bachelor level is carried out in various forms of educational activities, namely lectures, practicums, seminars, Internship, Community Services, to writing the final project. The implementation of education at UNY is based on the Semester Credit System (SKS), so that each educational activity is measured by a standardized unit

of study load, namely semester credit units (credits).

The time allocation required to undertake educational activities for one credit a week is as follows.

| Type of Learning | Time Allocation 1 credit in 1 week |
|---|---|
| Theory (Lecture), tutorial | 50 minutes of face-to-face learning<br>60 minutes structured learning tasks 60 minutes independent learning |
| Seminar | 100 minutes face-to-face<br>70 minutes independent activity |
| Practicum, workshop practice | 170 minutes (including drafting Report. response) |
| Research and service to the community | 170 minutes (including proposal drafting and report) |

For example, a student taking a Mathematical Statistics course with a weight of 3 credits means that they need to provide 150 minutes of time each week to attend lecture activities, 180 minutes to do structured learning tasks (e.g. homework), and 180 minutes of independent learning (e.g. working on exercise questions, re-reading lecture notes, and so on).

**C. Student Study Load**

The study load of students each semester is determined by considering the student abilities and the average study time in a day. If a student is considered to study normally for 9 hours per day, then in one week there is about 54 hours of study time or 3,240 minutes. By looking at the time allocation of 1 credit which is equivalent to 170 minutes, it is obtained that the student study load under normal conditions is 20 credits per semester. The individual ability of each student is measured through the achievement of GPA in the previous semester, with the following provisions (see also page 15).

| Grade Point Average of the Previous Semester | Maximum Study Load |
|---|---|
| More than 3.00 | 24 credits |
| 2.50 – 3.00 | 22 credits |
| 2.00 – 2.49 | 20 credits |
| Less than 2.00 | 18 credits |

Determination of the study load taken by students in a semester needs to be consulted with the academic advisor. Fulfillment of the maximum study load

can be done by adding courses as long as classes are still available and the prerequisites have been met.

## D. Course Content

The curriculum of the Bachelor Program in the Department of Mathematics Education FMIPA UNY is composed of a number of courses, with the weight of each expressed in credits. The amount of credits for each course is not the same, determined according to the scope of material and the burden of studying the course. Based on the nature there are two groups of courses:

1. **Compulsory** courses, must be taken / attended by all students of a study program. There are compulsory courses organized by universities, faculties, and study programs. More than 75% of the courses taken by students are compulsory courses.
2. **Elective** courses can be chosen according to interests and talents.
3. Students to complete graduation requirements. Taking elective courses should also consider the theme of the final project that students want to prepare.

Each course also has a course code consisting of three letters followed by four numbers. The three-letter code indicates the category of the course, namely:

MKU : Compulsory courses of Yogyakarta State University
FMI : Compulsory courses of the Faculty of Mathematics and Natural Sciences UNY
STA : Statistics course
PKL : Internship course

A course can have **prerequisites**, which are conditions that must be met before taking the course. Prerequisites can be in the form of the number of credits that have been taken, as well as obtaining certain minimum grades in other courses.

## E. Heregistration and Tuition Fee Payment

Towards the beginning of the new semester (December/May/July), students are expected to monitor information on the date of payment of education costs in the form of Single Tuition Fees at Universitas Negeri Yogyakarta.

1. Payment can be made according to the schedule online at Bank BTN, Bank BNI, or Bank Mandiri, Branch/Cash offices throughout Indonesia, or Bank BPD DIY Branch/Cash Office, by mentioning the Student Identification Number (NIM).
2. Students who have completed their studies and will only undergo Judicium at the beginning of the semester can submit a request not to paytuitionfees/UKT to the Vice Dean I and submit it to the PNBP Subdivision of the Finance and Accounting Section and the Registration and Statistics Subdivision in the UNY

Rectorate complex.

3. If the Judicium date exceeds the specified limit (backward), students must report back to the PNBP Subdivision of the Finance and Accounting Section and pay the tuition fee/UKT for that semester.
4. If there are problems with the payment process (e.g. difficulty knowing the amount of the bill, differences in the amount of the bill, etc.), students are requested to contact the UNY Finance and Accounting Department at the UNY Rectorate Building, 3rd floor, west wing, telephone (0274) 552558 before the deadline for payment of tuition fees/UKT.

The following are the steps to pay tuition fees at UNY using BNI ATM:

| | |
|---|---|
| 1. Prepare your BNI ATM/debit card. Make sure the balance in the account is still sufficient. | |
| 2. After submitting the card and PIN to the BNI ATM machine, choose **MENU LAIN**.<br>3. Choose **PEMBAYARAN**<br>4. Use option **MENU BERIKUTNYA** until appear option **UNIVERSITAS**. Choose **UNIVERSITAS**.<br>5. Choose **STUDENT PAYMENT CENTER (SPC)**<br>6. Insert educational code for UNY (**8015**) followed with your **NIM**. |  |
| 7. It will show information about the student's name, NIM, faculty, and bill cost. If the information is correct, choose **YA BAYAR**.<br>8. Select the type of account you want to use For pay.<br>9. Transaction complete. ATM machine will produce recipe of payment. |  |

Students who do not register by paying tuition fees until the payment deadline expires will have their status processed into **college leave**. Further

provisions regarding college leave can be seen on page 12.

## F. Filling the Study Plan Card

Students who have registered are entitled to take part in activities education on semester the. By Because That, student must designing activity learning on semester coming with fill in Study Plan Card (Kartu Rencana Studi, KRS) online on the SIAKAD account (http://siakad.uny.ac.id). The process for filling out the KRS is as follows.

1. Students are required to ask for consideration and approval from the Academic Advisory Lecturer before filling in the KRS online, related with courses And amount credits.
2. Students open a SIAKAD account with their respective email and password each. Furthermore, on period filling out KRS, system will display the list of courses available in that semester, along with names lecturers, class schedules, and remaining student capacity. Students can choose the courses they want to take. By automatically, the SIAKAD system will limit the number of course credits can be taken based on achievements GPA on the previous semester.
3. Academic Advisors provide online approval regarding the number of credits taken by students for the semester that will be undertaken based on GPA on the previous semester.
4. Student can cancel course which has been taken on the semester runs no later than the 8th (eighth) week calculated from first week lectures on the permission of the Academic Advisor by online.
5. Student can add maximum of one course on the semester runs no later than the 3rd week calculated from first week lectures with a note that it does not exceed the maximum study load which is allowed in one semester.

The inclusion of courses in the KRS gives students the right to take the Final Semester Examination (UAS). A student is only permitted to take the UAS for the courses listed in his KRS.

## G. Lectures

At the first meeting or face-to-face meeting for each course, the lecturer will generally explain the course description, syllabus, handbook/reference, learning strategies, and assessment system. Next, the lecturer and students will sign a lecture contract, which contains the frequency of assignments, quizzes, additional exams, and the minimum attendance and assessment weight agreed between the lecturer and students. Lectures can be held face-to-face or blended,

namely a combination of face-to-face and online learning.

Face-to-face lectures

Face-to-face lectures are conducted in the lecture rooms available at UNY's Faculty of Mathematics and Natural Sciences. When attending lectures, students must be present on time and comply with the FMIPA UNY lecture rules and regulations as agreed in the lecture contract. Attendance for face-to-face lectures is carried out online via https://siakad.uny.ac.id/.

Studying with E-Learning

Online lectures in the Statistics Study Program UNY are conducted via the site http://besmart.uny.ac.id. After logging in by entering your UNY email account and password, users can select faculties, study programs and courses. In each course, various files (videos, material summaries, handouts) are available that students can download. Students can also take quizzes online.


View of the online lecture site at UNY

Online lectures can also be combined with face-to-face lectures, which is known as the blended learning method.

## H. Assessment and Examination

Assessment of students' abilities in a course is carried out using pass a course learning outcome (CLO) and end-semester exams. CLO assessments can come from both individual and group assignments, quiz, and project, like listed on module handbook each course. As for final exam is exam which its implementation scheduled according to the academic calendar. Schedule and location for final exam implementation announced on the website and FMIPA notice board. Each student can only take a maximum of two exams in one day.

Final grade (NA) obtained by students for a course is the accumulation of grades obtained per learning sub-achievement and final exam, with weights determined in the module handbook. The final score is expressed in letters and

numbers based on the range which is obtained according to the following table

| Score (Scale 0 – 100) | Grade | |
|---|---|---|
| | Score | Weight |
| 86 – 100 | A | 4.00 |
| 81 – 85 | A- | 3.67 |
| 76 – 80 | B+ | 3.33 |
| 71 – 75 | B | 3.00 |
| 66 – 70 | B- | 2.67 |
| 61 – 65 | C+ | 3.33 |
| 56 – 60 | C | 2.00 |
| 41 – 55 | D | 1.00 |
| 0 – 40 | E | 0.00 |

Students who have not completed and submitted assignments related to the course concerned, are not given a grade and on the list of grades are given a K. The K mark can be changed to a proper grade if the student has completed and submitted the assignments within a maximum period of one semester. If the assignment is not fulfilled, students will receive a grade according to the achievements of the existing tasks/components.

The final grade of each student can be accessed at https://siakad.uny.ac.id/ by logging in using each student's account. Based on the final grade, GPA can be determined by: the number of letter grades that have been transferred to the weight value multiplied by the course credits divided by the number of credits taken by the student concerned in a particular semester.

GPA affects the number of credits that students can take in the next semester. It is expected that students can find out the maximum number of credits that can be taken in the next semester and can use the exam scores to consider the courses to be taken in the next semester.

## I. College Leave

To apply for a leave of absence, a student of the Statistics bachelor program must meet the following requirements:

a. Have taken a minimum of one semester of study, with at least 10 credits and a grade point average of at least 3.00.
b. Not a scholarship recipient.
c. Have not exceeded the limit of college leaves.

Provisions for the implementation of college leave:

1. College leave is not counted as a study period and is not required to pay tuition fees.
2. The length of study leave permitted is 2 (two) semesters during study.

3. Students who did not registry at the beginning of the semester will be automatically processed for college leave.
4. Automatic study leave is given a maximum of two times as long as the student still has the right to study leave.
5. Students on leave do not have the right to obtain academic services and utilize academic facilities.
6. Students who have already carried out registration can apply for permission to leave college and cancel their study plans, but the education fees that have been paid cannot be withdrawn.
7. If after taking a college leave for two consecutive semesters, students do not register in the following semester, then the semester during the college leave is counted as a study period. If the student will re-register, the student must pay the tuition fee for the previous semester and the one to be taken.
8. Students who have taken college leave for two consecutive semesters and do not register for the next two consecutive semesters are declared to have resigned as students and are entitled to a certificate of having attended college.

Application for college leave is made through http://eservice.uny.ac.id with the appropriate procedures and submitted every semester in accordance with the predetermined schedule.

## J. Credit Transfer

Provisions regarding credit transfer (recognition of courses taken by students outside UNY), study program transfer (transfer of students from one study program to another study program at UNY), and university transfer (transfer of students from UNY to other universities) have been regulated in detail in the Rector's Regulation of Universitas Negeri Yogyakarta Number 15 of 2023 concerning Academic Regulations of Universitas Negeri Yogyakarta.

## K. Community Service

Community Services is a 6-credit course and is **compulsory** for all UNY bachelor students. The implementation of Community Services is interdisciplinary and at the same time integrates education, research, and community service activities. Through Community Services, students are exposed to the community so that there is a give-and-take nature between the two. There are five types of Community Services organized at UNY, including Regular Community Services, Independent Community Services, Cooperation Community Services, National Community Services, RPL Lectures Community Services (Non MBKM).

The Community Services implementation process in the special semester

consists of three stages as follows.

| Stage | Description |
|---|---|
| Preparation | Feasibility study and licensing of the Community Services location.<br>Student registration, group formation.<br>Debriefing of prospective Community Services participants. |
| Implementation | Departure of students participating in Community Services.<br>Mentoring by lecturers at the Community Services location.<br>Monitoring of Community Services implementation by the team. |
| Evaluation | Evaluation of program success and implementation.<br>Preparation of individual, group and team reports.<br>Follow-up of Community Services results. |

Further information about Community Services and complete guidelines can be obtained from LPPM UNY (https://mkpk.uny.ac.id/).

**L. Judisium and Graduation**

To be declared a graduate, a student of the Bachelor Statistics study program must meet the following requirements.

a. Have passed at least 144 credits of courses, consisting of all compulsory courses plus elective courses according to the applicable curriculum.
b. Have a grade point average of at least 2.50.
c. The number of credits of courses with a D grade is a maximum of 10% of the total number of credits.
d. Has no E grade.
e. English proficiency with a minimum ProTEFL score of 425.

Students who have fulfilled the above requirements are allowed to register for Judicium, which is the process of determining the grade and graduation of students from the entire academic process. Judicium can also be understood as the announcement of grades to students as the final assessment process of all courses taken by students, determining grades in academic transcripts, and determining the student's graduation status. Judicium decisions are taken in a judicium meeting organized by the Faculty Senate and stated in the form of a Dean's Decree. Judicium is held every month in each faculty. The Judicium process is also the determination of student graduation predicates according to the following table.

| Predicate | GPA | Study Period |
|---|---|---|
| With highest honors (Summa Cum Laude) | 4.00 | 4.0 tahun |
| With honors (Cum Laude) | 3.51-4.00 | ≤ 4.5 tahun |
| Very satisfactory | 3.01-3.50 | - |
| Satisfactory | 2.50-3.00 | - |

To be able to take part in the Judicium, students need to prepare documents consisting of:

1. Document of Study Results
2. Certificate of Exemption from Theory
3. The Study Result Document and Certificate of Exemption from Theory must be signed by the academic supervisor lecturer and the Head of the respective Department.
4. Library Loan Exemption Certificate

A certificate of exemption from library borrowing must be obtained from the UNY Library and the UNY Faculty of Mathematics and Natural Sciences Library. For the UNY Library, students can obtain the letter online through http://library.uny.ac.id/member/login/. After completing the obligation to return all books and upload the final thesis manuscript. Guidelines for uploading the final project manuscript can be found at https://stat.fmipa.uny.ac.id/sites/stat.fmipa.uny.ac.id/files/Panduan%20Skripsi%20UNY%202023_compressed.pdf.

The Judicium registration procedure is as follows:

1. Students who have fulfilled all the requirements take the Judicium registration form at the Education Subdivision, Faculty of Mathematics and Natural Sciences (Counter building D15 1st floor).
2. Students fill out the Judicium registration form, then ask for a signature from the Head of the Study Program.
3. Students submit the form back to the Education Subdivision by submitting requirements in the form of a Study Result Document, proof of payment of tuition fees for the last semester, approval from Academic Advisors, a Certificate of Free Theory, a Certificate of Free Library Borrowing, and a Certificate of Free Borrowing of laboratory equipment.
4. Students register for judicium online through their SIAKAD account. (https://siakad.uny.ac.id/) respectively.
5. Students check the diploma draft and transcript draft, especially the writing of names, dates of birth, and course grades. Writing errors, if any, must be revised immediately.

6. Students pay the graduation fee as well as the graduation fee.
7. Students attended the Judicium ceremony.

The Judicium Ceremony is organized by the faculty and must be attended by all students who have registered for the month. Judiciary participants must arrive on time in the specified clothing (white shirt top, black trousers/skirt bottom, black official shoes, not sports shoes). Judicium participants who are unable to attend will be included in the next month's judicium.

Graduation is the final process in a series of academic activities in higher education. As a sign of inauguration for the completion of studies, an inauguration procession is held through an open senate meeting of UNY. Graduation is held by the University four times a year, namely in February, May, August, and November.

# 3. The Academic of the Bachelor Statistics Study Program

## A. Vision

In 2025, it will become a Statistics study program that excels in computational-based educational and social science data analysis at the national level to produce creative and innovative graduates based on devotion, independence, and scholarship.

## B. Mission

The vision above is elaborated in four mission points, namely:

1. Organizing a study program that excels in the application of computation-based statistics at the local, regional and national levels.
2. Carrying out research and scientific publications in the field of statistics and its applications that are of national standard,
3. Providing scientific statistical services to the community in the fields of education, social, economics, business, actuarial, and health, and
4. Organizing good study program governance and fostering mutually beneficial cooperation with other institutions at the national level to support the implementation of the learning process, research and publication of scientific papers, and community service.

## C. Objective

1. Producing competent statistics graduates who are able to implement the values of devotion, independence, scholarship in everyday life,
2. Produce and disseminate the results of studies and research through scientific publications in the field of statistics and its applications at the national and international levels.
3. The availability of scientific services in statistics in the fields of education, social, economic, business, actuarial, and health through community service activities,
4. The realization of good study program governance and cooperation with other institutions at the national level to support the implementation of the learning process, research and publication of scientific papers, and community service.

## D. Graduate Profile

The profiles of graduates of UNY Statistics Study Program are as data scientists, data analysts, statisticians, academics, statistical consultants, research assistants, and actuary candidates.

| No | Profession | Competence |
|---|---|---|
| 1. | Data Scientist | As the name implies, *data* scientists are users and experts in data science. Data science can be considered an interdisciplinary branch that uses scientific methods, processes, algorithms, and systems to gain knowledge and understanding from structured and unstructured data. Some experts view data science as the intersection of statistics, computer science, and expertise in each field. |
| 2. | Data Analyst | *A data analyst* or 'data analyst' uses the science of *'data analytics'*. A data analyst plays a role in data cleaning, data transformation, and making inferences from data. In general, a data analyst only works on structured data. |
| 3. | Statistician | Statisticians, statisticians (past tense) or statisticians are experts in statistics. Statistics is also related to data, starting from how to collect data, present data, process data, to draw conclusions based on data. The distinctive feature of Statistics lies in the inference related to the population based on sample data, which is based on mathematical statistical theories. Statistician is also an official functional designation for civil servants in Indonesia. |
| 4. | Academics | To become an academic or educator in higher education, a graduate of S1 Statistics can pursue further studies, both in the fields of Statistics, Mathematics, data science, and other fields according to his interests and profession. The deepening of specific Statistics competencies through specialization courses in the S1 Statistics study program FMIPA UNY can be one of the considerations in determining the direction of the continuation of each graduate's study. |
| 5. | Statistical Consultant | Graduates of the Bachelor of Statistics study program can work as statistical consultants in various institutions, such as educational institutions, health institutions, government agencies, private companies, or practice independently. Nowadays, statistical consultants are in high demand as public awareness of the importance of making conclusions based on valid data increases. |

| No | Profession | Competence |
|---|---|---|
| 6. | Research Assistant | Statistics provides various methods for collecting, processing, presenting, and drawing conclusions based on data. Therefore, Statistics is needed by researchers in various fields of science, especially those that use quantitative methods. With the knowledge and skills gained during their studies, graduates of the S1 Statistics Study Program can work as research assistants in various fields and various research institutions. |
| 7. | Actuary candidate | Simply put, an actuary is a person who applies mathematics, probability and statistics, as well as economics and finance to solve problems in the insurance and finance industry. Every insurance company in Indonesia must have an actuary. To be able to become an actuary, graduates and even students of the Bachelor Statistics Study Program must take a professional exam organized by the Indonesian Actuary Association. Some of the actuary's professional exam subjects have been supported by the courses of the Bachelor Statistics study program of FMIPA UNY. |

## E. Curriculum 2020

In mid-2020, the Minister of Education of the Republic of Indonesia launched the **Merdeka Belajar - Kampus Merdeka** program. Responding to this policy, Universitas Negeri Yogyakarta (UNY) revised the curriculum. The main differences between the MBKM curriculum or Curriculum 2020 and the previous curriculum include:

- This curriculum allows students to do internships or street vendors for a period of two months or more.
- There are three patterns of study periods for taking courses.
- The opportunity to take courses outside the study program, across faculties, even across universities.
- The course structure has been adjusted to the results of the Independent Campus workshop by the 2020 Higher Education Statistics Forum (Forstat).
- "Compaction" of some courses without compromising the quality of student understanding.

This curriculum is used by undergraduate Statistics Study Program students class of 2020 since semester 1.

## F. Program Learning Outcomes

The formulation of Program Learning Outcomes (PLOs) was compiled jointly by lecturers of the Bachelor Statistics Study Program under the direction of

the manager of the Mathematics Education Department, which was derived from the graduate profile by meeting level 6 of the Indonesian National Qualifications Framework (Community ServicesI) and the National Higher Education Standards (Permenristek Dikti Number 44 of 2015), as well as referring to the results of deliberations of professional organizations (Indonesian Statistics Higher Education Forum), as well as input from various related parties. Every graduate of the Bachelor Statistics Study Program at Universitas Negeri Yogyakarta has the following minimum PLOs.

ATTITUDE

| | |
|---|---|
| PLO 1 | To demonstrate faith in God Almighty and uphold human values based on religion, morals, and ethics |
| PLO 2 | To appreciate the diversity of cultures, religions, beliefs, and opinions and contribute to a life of society, nation, and state-based on Pancasila |
| PLO 3 | To demonstrate a responsible attitude according to academic ethics and professional ethics |

KNOWLEDGE MASTERY

| | |
|---|---|
| PLO 4 | To master the basic concepts of statistics, programming, and statistical science for solving problems in various fields and supporting further studies. |
| PLO 5 | To master some of the latest statistical and data science methods as the basis for lifelong learning |

GENERAL SKILLS

| | |
|---|---|
| PLO 6 | To collaborate and think logically for solving problems, making decisions, and implementing science and technology |

PARTICULAR SKILLS

| | |
|---|---|
| PLO 7 | To master the mathematical foundation for developing thinking related to statistics and probability through exploration, logical reasoning, generalization, abstraction, and formal proof. |
| PLO 8 | To perform collection, processing, and management data appropriately and effectively |
| PLO 9 | To perform analysis, presentation, and interpretation of data with the help of software on solving problems in various fields |
| PLO 10 | To develop algorithms in programming languages for solving statistical problems |

| | |
|---|---|
| PLO 11 | To apply current data science methods for solving problems appropriately |
| PLO 12 | To deliver creative and innovative ideas related to the development and application of statistics in spoken and written form |

There are 2 additional PLOs covering aspects of knowledge and skills to enrich the competence of Statistics Study Program graduates, which are as follows

| | |
|---|---|
| 1 | To master the basic concepts of advanced mathematics |
| 2 | To master advanced programming concepts |

Program Learning Outcomes (PLO) are described as course learning outcomes (CLOs) according to the following table.

a) aUniversity and Faculty Courses

| No | Course Name | Program Learning Outcomes (PLO) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1 | Religion Education | ✓ | ✓ | | | | | | | | | | |
| 2 | Civic Education | ✓ | ✓ | | | | | | | | | | |
| 3 | English | | | ✓ | | | ✓ | | | | | | |
| 4 | Digital Transformation | | | ✓ | ✓ | | ✓ | ✓ | | | | | |
| 5 | Pancasila | ✓ | ✓ | ✓ | | | | | | | | | |
| 6 | Bahasa Indonesia | | | ✓ | | | ✓ | | | | | | |
| 7 | Creativity, Innovation, and Entrepreneurship | | | ✓ | | | ✓ | | | | | | |
| 8 | Social Literacy and Humanity | ✓ | ✓ | ✓ | | | | | | | | | |
| 9 | Study of Mathematics and Natural Sciences | | | ✓ | ✓ | | | | | | | | |

| No | Course Name | Program Learning Outcomes (PLO) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 10 | Statistics | | | ✓ | ✓ | | ✓ | ✓ | | | | | |

b) Compulsory Courses of Statistics Study Program

| No | Course Name | Main Program Learning Outcomes (PLO) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1. | Logic and Set | | | ✓ | ✓ | | ✓ | ✓ | | | | | |
| 2. | Basic Calculus for Statistic | | | ✓ | ✓ | | ✓ | ✓ | | | | | |
| 3. | Linear Algebra and Matrices | | | ✓ | ✓ | | ✓ | ✓ | | | | | |
| 4. | History and Ethics of Statistics | | | ✓ | ✓ | | ✓ | | ✓ | | | | |
| 5. | Data Analysis and Visualization | | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | | |
| 6. | Nonparametric Statistics | | | ✓ | ✓ | | ✓ | | | ✓ | | | |
| 7. | Advanced Calculus for Statistics | | | ✓ | ✓ | | ✓ | ✓ | | | | | |
| 8. | Regression Analysis | | | ✓ | ✓ | | ✓ | | | ✓ | | | |
| 9. | Algorithm and Statistical Programming | | | ✓ | ✓ | | ✓ | | | | ✓ | | |
| 10. | Experimental Design | | | ✓ | ✓ | | ✓ | | ✓ | ✓ | | | |
| 11. | Statistical Optimization | | | ✓ | ✓ | | ✓ | | | | ✓ | | |

| No | Course Name | Main Program Learning Outcomes (PLO) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 12. | Probability Theory | | | ✓ | ✓ | | ✓ | ✓ | | | | | |
| 13. | Sampling and Survey Techniques | | | ✓ | ✓ | | ✓ | | ✓ | | | | |
| 14. | Database for Statistics | | | ✓ | ✓ | | ✓ | | ✓ | | | | |
| 15. | Time Series Analysis | | | ✓ | ✓ | | ✓ | | | ✓ | | | |
| 16. | Mathematical Statistics | | | ✓ | ✓ | | ✓ | ✓ | | | | | |
| 17. | Categorical Data Analysis | | | ✓ | ✓ | | ✓ | | | ✓ | | | |
| 18. | Statistical Computation | | | ✓ | ✓ | | ✓ | | | | ✓ | ✓ | |
| 19. | Introduction to Multivariate Statistics | | | ✓ | ✓ | | ✓ | | | ✓ | | | |
| 20. | Educational Statistics | | | ✓ | | ✓ | ✓ | | | ✓ | | | ✓ |
| 21. | Research Design | | | ✓ | ✓ | | ✓ | | ✓ | | | | |
| 22. | Linear Model | | | ✓ | ✓ | | ✓ | ✓ | | | | | |
| 23. | Statistical Simulation | | | ✓ | | ✓ | ✓ | | | | ✓ | | |
| 24. | Multivariate Statistics | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | |
| 25. | Statistical Machine Learning | | | ✓ | | ✓ | ✓ | | | | | ✓ | ✓ |
| 26. | Statistical Data | | | ✓ | | ✓ | ✓ | | | | | ✓ | ✓ |

| No | Course Name | Main Program Learning Outcomes (PLO) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| | Mining | | | | | | | | | | | | |
| 27. | Bayesian Statistics | | | ✓ | | ✓ | ✓ | ✓ | | | | ✓ | |
| 28. | Artificial Neural Networks | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | |
| 29. | Internship | | | ✓ | ✓ | | ✓ | | | ✓ | | | ✓ |
| 30. | Community Services | ✓ | ✓ | ✓ | | | ✓ | | | | | | |
| 31. | Undergraduate Thesis | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

c) Elective Courses of Statistics Study Program

| No | Course Name | Main Program Learning Outcomes (PLO) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1. | Missing Data Analysis | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | |
| 2. | Statistical Mediation Analysis | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | |
| 3. | Structural Equation Modeling | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ |
| 4. | Longitudinal Data Analysis | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ |
| 5. | Multilevel Modeling | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ |
| 6. | Financial Mathematics | | | ✓ | | ✓ | ✓ | ✓ | | | | | |

| No | Course Name | Main Program Learning Outcomes (PLO) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 7. | Mathematical Economics | | | ✓ | ✓ | | ✓ | ✓ | | ✓ | | | ✓ |
| 8. | Life Insurance | | | ✓ | ✓ | | ✓ | ✓ | | ✓ | | | |
| 9. | Risk Modeling | | | ✓ | ✓ | | ✓ | | | ✓ | ✓ | | |
| 10. | Pension Plan | | | ✓ | ✓ | | ✓ | ✓ | | ✓ | | | |
| 11. | Applied Biostatistics | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | |
| 12. | Meta Analysis | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ |
| 13. | Survival Analysis | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ |
| 14. | Spatial Statistics | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ |
| 15. | Statistical Methods for Epidemiology | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ |
| 16. | Econometrics | | | ✓ | ✓ | | ✓ | | | ✓ | | ✓ | ✓ |
| 17. | Statistical Quality Control | | | ✓ | ✓ | | ✓ | | | ✓ | | | ✓ |
| 18. | Financial Statistics | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | ✓ |
| 19. | Stochastic Process | | | ✓ | ✓ | | ✓ | ✓ | | | | | |
| 20. | Business Analytics | | | ✓ | | ✓ | ✓ | | | ✓ | | ✓ | |

## G. Course Summary

Referring to the 2020 MBKM curriculum, the courses that must be taken to be able to obtain a Bachelor of Statistics (S.Stat.) degree are 147-152 credits, which consist of the following categories.

| No | Course Category | Study period pattern / Credit hours | | |
|---|---|---|---|---|
| | | 5-1-2 | 6-1-1 | 6-0-2 |
| 1 | Compulsory University Course (MKU) | 14 | 14 | 14 |
| 2 | Elective University Course (MKU) | 2 | 2 | 2 |
| 3 | Faculty Courses (FMI) | 4 | 4 | 4 |
| 4 | Statistics Core Course (STA) | 71 | 71 | 71 |
| 5 | Advanced Course in Statistics (STA) | 9 | 12 | 12 |
| 6 | Statistics elective courses | 0 | 12 | 9 |
| 7 | Courses Outside Study Program In UNY | 18-20 | 12-16 | 0 |
| 8 | Courses Outside UNY | 29-32 | 20 | 35-38 |
| | **TOTAL** | **147-152** | **147-151** | **147-150** |

Each student can choose one of the three study period patterns with guidance from the Academic Advisor.

## H. Course Structure

### Semester 1 (all study period patterns)

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| 1 | MKU6201 | Islam Education | 2 | | | 2 | |
| | MKU6202 | Catholic Education | 2 | | | | |
| | MKU6203 | Christian Education | 2 | | | | |

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| | MKU6204 | Buddhist Education | 2 | | | | |
| | MKU6205 | Hindu Education | 2 | | | | |
| | MKU6206 | Confucian Education | 2 | | | | |
| 2 | MKU6207 | Civic Education | 2 | | | 2 | |
| 3 | MKU6211 | English | 2 | | | 2 | |
| 4 | FMI6202 | Statistics | 2 | | | 2 | |
| 5 | STA6301 | Logic and Set | 3 | | | 3 | |
| 6 | STA6302 | Basic Calculus for Statistic | 3 | | | 3 | |
| 7 | STA6303 | Linear Algebra and Matrices | 3 | | | 3 | |
| 8 | MKU6212 | Digital Transformation | 1 | 1 | | 2 | |
| 9 | STA6204 | History and Ethics of Statistics | 2 | | | 2 | |
| Total | | | 20 | 1 | | 21 | |

**Semester 2 (all study period patterns)**

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| 1 | MKU6208 | Pancasila | 2 | | | 2 | |
| 2 | MKU6209 | Bahasa Indonesia | 2 | | | 2 | |
| 3 | MKU6213 | Creativity, Innovation, and Entrepreneurship | 2 | | | 2 | |
| 4 | STA6305 | Data Analysis and Visualization | 2 | 1 | | 3 | FMI6202 |

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| 5 | STA6306 | Statisika Nonparametrik | 3 | | | 3 | FMI6202 |
| 6 | STA6307 | Advanced Calculus for Statistics | 3 | | | 3 | STA6302 |
| 7 | STA6308 | Regression Analysis | 2 | 1 | | 3 | FMI6202 |
| 8 | STA6309 | Algorithm and Statistical Programming | 2 | 1 | | 3 | MKU6212 |
| Total | | | 18 | 3 | | 21 | |

**Semester 3 (all study period patterns)**

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| 1 | MKU6216 | Social Literacy and Humanity | 2 | | | 2 | |
| 2 | FMI6201 | Study of Mathematics and Natural Sciences | 2 | | | 2 | |
| 3 | STA6310 | Experimental Design | 3 | | | 3 | FMI6202 |
| 4 | STA6311 | Statistical Optimization | 2 | 1 | | 3 | STA6309 |
| 5 | STA6312 | Probability Theory | 3 | | | 3 | STA6307 |
| 6 | STA6313 | Sampling and Survey Techniques | 3 | | | 3 | FMI6202 |
| 7 | STA6314 | Database for Statistics | 2 | 1 | | 3 | STA6309 |
| 8 | STA6315 | Time Series Analysis | 3 | | | 3 | STA6308 |

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| Total | | | 20 | 2 | | 22 | |

**Semester 4**

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| All study period patterns | | | | | | | |
| 1 | STA6316 | Mathematical Statistics | 3 | | | 3 | STA6312 |
| 2 | STA6317 | Categorical Data Analysis | 3 | | | 3 | STA6308 |
| 3 | STA6318 | Statistical Computation | 2 | 1 | | 3 | STA6309 |
| 4 | STA6319 | Introduction to Multivariate Statistics | 2 | 1 | | 3 | STA6308 |
| 5 | STA6325 | Educational Statistics | 2 | 1 | | 3 | STA6308 |
| 6 | STA6320 | Research Design | 3 | | | 3 | STA6313 |
| Study Pattern 5-1-2 and 6-1-1 | | | | | | | |
| 7 | | Elective Courses Outside of Study Programs at UNY | | | | 3-4 | customize |
| Study Pattern 6-0-2 | | | | | | | |
| 7 | | Elective courses of Statistics Study Program | | | | 3 | customize |

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| Total | | | 15-18 | 3-4 | | 21-22 | |

**Semester 5**

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| All study period patterns | | | | | | | |
| 1 | STA6321 | Linear Model | 3 | | | 3 | STA6308 |
| 2 | STA6326 | Statistical Simulation | 2 | 1 | | 3 | STA6318 |
| 3 | STA6322 | Multivariate Statistics | 2 | 1 | | 3 | STA6319 |
| 4 | STA6323 | *Statistical Machine Learning* | 2 | 1 | | 3 | STA6309 |
| 5 | STA6324 | *Statistical Data Mining* | 2 | 1 | | 3 | STA6309 |
| 6 | STA6327 | Bayesian Statistics | 3 | | | 3 | STA6316 |
| Study period pattern 5-1-2 | | | | | | | |
| 7 | | Courses outside the study program in UNY | | | | 3-4 | customize |
| Study period pattern 6-1-1 and 6-0-2 | | | | | | | |
| 7 | | Elective Courses of Statistics Study Program | | | | 3 | customize |

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| Total | | | | | | 21 | |

**Semester 6**

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| Study period pattern 5-1-2 | | | | | | | |
| 1. | | Courses outside the study program in UNY | | | | 12 | customize |
| 2. | | Courses outside UNY | | | | 9-12 | customize |
| Study period pattern 6-1-1 | | | | | | | |
| 1. | STA6328 | Artificial Neural Networks | 3 | | | 3 | STA6309 |
| 2. | | Statistics Elective Courses | | | | 9 | customize |
| 3. | | Courses outside the study program in UNY | | | | 9-12 | customize |
| Study period pattern 6-0-2 | | | | | | | |
| 1. | STA6328 | Artificial Neural Networks | 3 | | | 3 | STA6309 |
| 2. | | Statistics Elective Courses | | | | 3 | customize |
| 3. | | Courses outside UNY | | | | 15-18 | customize |

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| Total | | | | | | 21-24 | |

**Semester 7 (all study period patterns)**

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| 1 | PKL6601 | Internship | | | 6 | 6 | |
| 2 | MKU6614 | Community Services | | | 6 | 6 | |
| Total | | | | | 12 | 12 | |

**Semester 8 (all study period patterns)**

| No | Code | Course Name | Credit hours | | | | Prere-quisite |
|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | |
| 1 | STA6849 | Undergraduate Thesis | | | 8 | 8 | |
| Total | | | | | 8 | 8 | |

Elective Courses
The subjects of this elective group study program are divided into 4 specialization groups, namely Education and Social Sciences, Biostatistics, Actuarial Science, Economics and Business. Arrangements for the implementation of elective courses are carried out through the policy of the study program manager.

**Field: Education and Social Sciences**
The fields of Education and Social Sciences also use several quantitative methods that are certainly part of the science of Statistics.

| No | Code | Course Name | Credit hours | | | | Semester | Prere-quisite |
|---|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | | |
| 1 | STA6329 | Missing Data Analysis | 3 | | | 3 | 5 | STA6308 |
| 2 | STA6330 | Statistical Mediation Analysis | 3 | | | 3 | 5 | STA6308 |
| 3 | STA6331 | Structural Equation Modeling | 2 | 1 | | 3 | 6 | STA6308 |
| 4 | STA6332 | Longitudinal Data Analysis | 3 | | | 3 | 6 | STA6308 |
| 5 | STA6333 | Multilevel Modeling | 2 | 1 | | 3 | 6 | STA6308 |

**Field: Biostatistics**

Biostatistics examines the application of statistics in the field of health. This field is closely related to epidemiology, medicine, and public health.

| No | Code | Course Name | Credit hours | | | | Semester | Prere-quisite |
|---|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | | |
| 1 | STA6334 | Applied Biostatistics | 2 | 1 | | 3 | 5 | STA6308 |
| 2 | STA6335 | Meta Analysis | 3 | | | 3 | 5 | STA6308 |
| 3 | STA6336 | Survival Analysis | 2 | 1 | | 3 | 6 | STA6306, STA6316 |
| 4 | STA6337 | Spatial Statistics | 3 | | | 3 | 6 | STA6308 |
| 5 | STA6338 | Statistical Methods for Epidemiology | 3 | | | 3 | 6 | STA6308 |

**Field: Actuarial Science**

Actuarial science is the application of probability and statistical methods in the field of insurance, both general insurance and life insurance.

| No | Code | Course Name | Credit hours | | | | Semester | Prere-quisite |
|---|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | | |
| 1 | STA6339 | Financial Mathematics | 3 | | | 3 | 5 | STA6307 |
| 2 | STA6340 | Mathematical Economics | 3 | | | 3 | 5 | STA6307 |
| 3 | STA6341 | Life Insurance | 3 | | | 3 | 6 | STA6312 |
| 4 | STA6342 | Risk Modeling | 2 | 1 | | 3 | 6 | STA6312 |
| 5 | STA6343 | Pension Plan | 2 | 1 | | 3 | 6 | STA6312 |

**Field: Economics and Business**

Statistics are indispensable in decision-making in the fields of economics and business. The application of statistics in both fields can be found in the industrial world.

| No | Code | Course Name | Credit hours | | | | Semester | Prere-quisite |
|---|---|---|---|---|---|---|---|---|
| | | | T | P | F | TL | | |
| 1 | STA6344 | Econometrics | 2 | 1 | | 3 | 5 | STA6308 |
| 2 | STA6345 | Statistical Quality Control | 3 | | | 3 | 5 | STA6308 |
| 3 | STA6346 | Financial Statistics | 2 | 1 | | 3 | 6 | STA6308 |
| 4 | STA6347 | Stochastic Process | 3 | | | 3 | 6 | STA6312 |
| 5 | STA6348 | Business Analytics | 3 | | | 3 | 6 | STA6312 |

## I. Internship

Internship is a course that must be taken by every student of the Statistics Study Program at FMIPA UNY in completing the entire curriculum (at least 144 credits) to complete the prerequisites for obtaining a bachelor's degree and is **mandatory**. This course is carried out only in the field (without any theory in class and guided practicum in the laboratory) in industries or agencies that have relevance to the objects and problems of mathematics and science. The weight of PKL is 3 credits of field practice equivalent to 136 hours within 1 month.

Further provisions regarding the submission of PKL titles, determination of PKL locations, PKL administration, and preparation of PKL final reports can be seen in the PKL guidebook available at https://stat.fmipa.uny.ac.id/sites/stat.fmipa.uny.ac.id/files/Pedoman%20PKL%202017_November%202017.pdf

## J. Undergraduate Thesis

Undergraduate Thesis for students of the Bachelor Statistics Study Program is a compulsory course in the form of student scientific papers that reflect their ability to carry out scientific processes and thinking patterns through research activities. This course weighs 6 credits and can be taken in the fourth year.

The process of preparing a thesis in Bachelor Statistics Study Program cannot be separated from the Seminar which provides the basics of the ability to study literature, research, and scientific writing procedures. Students who have fulfilled the prerequisites for taking an undergraduate thesis (110 credits with a minimum GPA of 2.0) contact the academic advisor to ask for recommendations for preparing a thesis. Recommendations and brief descriptions related to the title of the final thesis are consulted with the Statistics Study Program to determine the thesis supervisor. Students contact the appointed supervisor to ask for the lecturer's approval.

Furthermore, students work on the thesis under the guidance of the supervisor, by filling out the thesis guidance card every time the guidance. After the thesis is completed, students can apply for the final thesis examination.

Complete guidelines regarding the writing/preparation of the thesis can be downloaded at https://stat.fmipa.uny.ac.id/sites/stat.fmipa.uny.ac.id/files/Panduan%20Skripsi%20UNY%202023_compressed.pdf. The process of proposing topics to proposing a thesis examination decree can be carried out online using the SIBIMTA information system (http://bimbingan.uny.ac.id).

# 4. 4. Student Activities and Organizations

To support self-development, especially student soft skills, Universitas Negeri Yogyakarta (UNY) provides a variety of activities and organizations, both at the department, faculty, and university levels.

### A. Activities and Organizations at the Department Level

Student Association of Mathematics Education Department (Himatika) is the only student organization at the level of Mathematics Education Department FMIPA UNY. HIMATIKA FMIPA UNY moves and serves based on Pancasila, based on science, and is autonomous in accordance with its functions.

Some of the activities of HIMATIKA FMIPA UNY aimed at students majoring in Mathematics Education include Platina, Kurfabeta, Work Conference (Musker), Raker, Famgath, Professional Seminar, general session, Open House, question bank duplication and course books, and others. In addition, HIMATIKA FMIPA UNY also organizes activities that involve non-mathematics education students and the general public, such as blood donations andmathematics competitions and seminars (LSM) which are held once a year. HIMATIKA FMIPA UNY also regularly sends delegates to IHMSI, IKAHIMATIKA, and others. More information about HIMATIKA FMIPA UNY can be obtained by visiting the website http://himatikauny.org.

### B. Activities and Organizations at the Faculty Level

Student activities and organizations at the Faculty of Mathematics and Natural Sciences UNY level include the Student Advisory Council (DPM) and the FMIPA Student Executive Board. In relation to students' interests and talents, there are several student activity units (UKM):

1. UKM Pecinta Alam HANCALA (http://hancala.student.uny.ac.id/).
2. UKM Kerohanian Islam HASKA (http://haska.student.uny.ac.id/)
3. UKM Teater SEKRUP (https://sekrup-uny.blogspot.com/)
4. UKM Penelitian KSI MIST
5. UKM Pengamat Burung BIONIC (https://bionicuny.blogspot.com/).

The secretariat of the above organization is in the FMIPA UNY complex.

## C. Activities and Organizations at the University Level

Student Executive Board - Student Republic (Badan Eksekutif Mahasiswa, BEM REMA), Student Representative Council (Dewan Perwakilan Mahasiswa, DPM), and Student Consultative Assembly (MPM) are student organizations at the Universitas Negeri Yogyakarta level. In addition, to accommodate the interests, talents, and development of student achievements, there are a number of Student Activity Units (Unit Kegiatan Mahasiswa, UKM) at the university level which can be grouped based on their scope as follows.

Field of Reasoning

To respond to the development of science and technology, UNY carries out a special strategy to accommodate and develop all the potential and interests of students in the field of science and technology. Reasoning activities at UNY include the following UKM:

1. UKM Penelitian
2. UKM Lembaga Pers Mahasiswa "Ekspresi"
3. UKM Radio "Magenta FM"
4. UKM Bahasa Asing
5. UKM Rekayasa Teknologi

Art Field

The development of student creativity and potential in the arts is carried out by UNY through the following UKM:

1. UKM Keluarga Mahasiswa Seni Tradisi (Kamasetra)
2. UKM Paduan Suara Mahasiswa (PSM) "Swara Wadhana"
3. UKM Musik "Sicma"
4. UKM Seni Rupa dan Fotografi (Serufo)
5. UKM Unit Studi Sastra dan Teater (Unstrat)

Sport FIeld

The development of sports skills for students aims to maintain student fitness and health as well as to support UNY students' achievements in the field of sports. Sports activities are coordinated in the following UKM:

1. UKM Atletik
2. UKM Catur
3. UKM Renang
4. UKM Panahan
5. UKM Hockey
6. UKM Tenis Meja
7. UKM Tenis Lapangan
8. UKM Judo
9. UKM Pencak Silat
10. UKM Karate

11. UKM Tae Kwon Do
12. UKM Pecinta Alam Madawirna
13. UKM Bola Voli
14. UKM Bola Basket
15. UKM Sepak Takraw
16. UKM Sepak Bola
17. UKM Baseball-Softball
18. UKM Marching Band Citra De-rap Bahana
19. UKM Bulu Tangkis

Welfare and Special Interest

Student development in this field is a vehicle to improve the welfare of students both physically and mentally as well as the special interests of students.

1. UKM Unit Kegiatan Kerohanian Islam (UKKI)
2. UKM Persekutuan Mahasiswa Kristen (PMK)
3. UKM Ikatan Keluarga Mahasiswa Katolik (IKMK)
4. UKM Keluarga Mahasiswa Hindu Dharma (KMHD)
5. UKM Pramuka Racana WR. Supratman dan Racan Fatmawati
6. UKM Korps Sukarelawan Palang Merah Indonesia (KSR-PMI)
7. UKM Resimen Mahasiswa (Menwa) "Pasopati"
8. UKM Koperasi Mahasiswa "Kopma UNY"
9. UKM Kewirausahaan (KWU)

## D. Cross-University Activities and Organizations

There are several Mathematics student organizations across universities that can be a means of expanding relationships and increasing student experience, for example: Indonesian Statistics Student Association (Ikatan Himpunan Mahasiswa Statistics Indonesia, IHMSI) (https://ihmsinasional.com/).

# 5. Supporting Facilities

Supporting facilities that can be accessed/utilized by students of the Statistics Study Program in accordance with applicable regulations include the following.

### A. Library

Universitas Negeri Yogyakarta Library provides various services for the academic community of UNY as well as for the public outside UNY. Online access to the UNY public library catalog can be done through the website http://library.uny.ac.id/sirkulasi/, while direct access can be done at the Library building which is located about 150 meters east of the UNY Mathematics Education Department. UNY Library has also subscribed to various national and international journals, such as JSTOR, SPRINGER LINK, EBSCO, PROQUEST, and others, which can be accessed through a special internal network for UNY academicians (http://sso.uny.ac.id).

In addition, UNY also has an Internal Repository that contains scientific documents, theses, theses, dissertations, research and journals originating from the academic community of UNY which can be accessed through the site http://e.library.uny.ac.id/. For tUndergraduate Thesis, theses, and dissertations, access to the full text can only be done in the library building.

Library services for the academic community of the Mathematics Education Department of UNY are also provided by the MIPA faculty library located on the 3rd floor of the Integrated Laboratory and Library building of FMIPA UNY. All students of the Statistics Study Program of FMIPA UNY are automatically members of this library. Information related to catalogs and library services is available at http://library.fmipa.uny.ac.id/.

### B. Sports Facilities

The Universitas Negeri Yogyakarta (UNY) complex in Karangmalang has several sports facilities that are quite complete and can be utilized by students according to the provisions, for example:

1. Swimming pool
2. Sportsmart/Sporting goods store
3. Sports dormitory
4. Indoor tennis court
5. Archery field
6. Basketball court
7. Community Sports Park
8. Football and athletic fields
9. Fitness Center

**C. Worship Facilities**

Mujahidin Mosque of UNY covering an area of 1,920 m2 and able to accommodate up to 3,500 worshipers is located just west of the Faculty of Mathematics and Natural Sciences. The mosque, which has been renovated three times with the initial architecture like the Prophet's Mosque, is the center of worship for the Muslim academic community in the Statistics Study Program. In addition, there is Musholla Al-Furqon in the complex of Faculty of Mathematics and Natural Sciences UNY.

Places of worship of various religions are not difficult to find around UNY Campus, for example Bintang Samudera Chapel in Sagan, St. John the Apostle Church in Pringwulung, Indonesian Christian Church (GKI) Gejayan, Jagatnatha Temple Sorowajan, Klenteng Poncowinatan, and others.

**D. Student and Multicultural Center (SMC)**

UNY's Student and Multicultural Center (SMC) building is the center of UNY's student activities that provides space for creativity and interaction among students. In addition to spaces for university-level student organizations such as BEM and UKM, this three-story building is also equipped with a spacious meeting hall and lobby. This facility is located 100 meters north of the Mathematics Education Department / MIPA Faculty UNY

**E. Banking Facilities**

Several banks that have branch offices/cash offices on UNY campus include BPD DIY and BNI, both located on Jalan Gejayan (about 400 meters east of the Mathematics Education Department). In addition, there are also Automated Teller Machines (ATMs) around the Mathematics Education Department, namely at Kopma UNY Mini Market and UNY Plaza.

**F. Food and Daily Needs**

**KOPMA UNY Cooperative Mini Market** provides various student needs ranging from stationery and office supplies, daily equipment and supplies, snacks, drinks, to photocopying. Located 50 meters north of MIPA Faculty UNY.

**UNY Food Court** is a beautifully arranged food and snack center, complete with shady trees, ornamental plants, joglo buildings, and several gazebos. It is very comfortable to eat a variety of foods and hold casual chats. Located just east of the Mathematics Education Department / MIPA Faculty UNY.

**Garden Café UNY** is a food and drink stall that is very suitable for students to gather and discuss, and has been equipped with a hot spot area, LCD, Projector,

and cable TV. Located 50 meters north of the Mathematics Education Department / MIPA Faculty UNY.

**Plaza UNY** is a four-story building located 200 meters east of the Department of Mathematics Education / Faculty of Mathematics and Natural Sciences UNY. Plaza UNY consists of minimarkets that provide daily necessities, several food stalls, clothing, electronic repair services, and reflexology services.

## G. Accomodation

UNY Hotel is a hotel located within the campus area, right next to the Faculty of Mathematics and Natural Sciences UNY. The hotel offers comfort, cleanliness, friendliness, and a strong academic feel. For students from outside the area, communities around UNY (including Karangmalang, Kuningan, Santren, Karangasem, Deresan, Mrican, Klebengan, and Samirono) provide boarding rooms with various facilities and prices.

## H. Health Facilities

UNY Health Services is a technical implementation unit in charge of providing health services for students, lecturers, and education staff within UNY. Some of the services provided include health checks, treatment, health consultations, simple laboratory tests (cholesterol, blood glucose, uric acid, pregnancy tests, blood type tests), examination of pregnant women, First Aid for Accidents services in various large-scale activities, community service, and health counseling. This service can be contacted via telephone 0274-586168 ext. 1324.

In addition to health services, UNY also has a physical therapy clinic located west of UNY GOR. The physical therapy clinic treats various injuries, sprains/strains, aches, and so on. The clinic is open from 09.00 to 17.00 WIB, and is served by professional therapists.

For students who need emergency services and hospitalization, there are several hospitals around UNY, namely:

1. Dr. Sardjito Hospital, Jalan Kesehatan 1, Sendowo, Yogyakarta (± 2.5 km from FMIPA UNY).
2. Panti Rapih Hospital, Jalan Cik Di Tiro 30, Yogyakarta (± 1 km from FMIPA UNY).
3. Jogjakarta International Hospital (JIH), Jalan Pajajaran/Ring Road North 160 (± 4 km from FMIPA UNY).
4. Siloam Hospital Yogyakarta, Urip Sumoharjo road (± 1.5 km from FMIPA UNY).
5. An-Nur Surgical Specialty Hospital, Colombo Street (± 500 m from FMIPA UNY).

6. Dr. Yap Eye Hospital, Cik Di Tiro Street 5 (± 1.5 km from UNY campus).

## I. Counseling, Career, and Legal Guidance

Counseling guidance services and psychological well-being for UNY academic community are provided by the Technical Implementation Unit of Guidance and Counseling Services (UPT LBK), located in Karangmalang Yogyakarta, telephone 0274- 589536, 386168 Psw. 314. This service can also be accessed online through http://upt-lbk.uny.ac.id. Face-to-face service delivery is provided every Monday-Friday at 09.00-13.00 WIB or outside hours by prior agreement. Students can get counseling services (except psychological tests) for free.

Career development, including employment information, career guidance and consultation, and tracer study, is provided by the Career Development Center (CDC) UNY through http://ppk.lppmp.uny.ac.id. In addition, CDC UNY also organizes Job Fair twice a year, which is attended by dozens of companies.

UNY also has a Legal Consultation and Assistance Service Unit that can be contacted by telephone 0274-586168 Psw. 420 or 0274 545097.

## J. Bookstore

Books published by UNY Press can be purchased at UNY Bookstore, 3rd floor of Plaza UNY building on Colombo Street. Books published in general can be obtained at several bookstores around UNY, such as Social Agency, Toga Mas, and Gramedia. Cheap book markets, which sell new and used books at negotiable prices, can be found in the Terban area (Jl. Kahar Muzakir) and Taman Pintar Yogyakarta (Jl. Sriwedani).


## *VISION UNY*

*Become a competitive, creative and innovative education university in 2025 with piety, autonomy, and intellectuality as the foundational values.*

## *MISSION UNY*

1. *Conduct competitive, creative and innovative academic and professional education in the field of education to produce pious, independent and intellectual human beings.*
2. *Organizing academic, professional, and vocational education in competitive, creative and innovative fields of non-education to produce pious, independent and intellectual human beings.*
3. *Conducting research to find, develop, and disseminate science, technology, and art that benefit individuals, and society, and support regional and national development, and contribute to solving global problems creatively and innovatively based on piety, autonomy and intellectuality.*
4. *Organizing creative and innovative community service and community empowerment that encourages the development of human, community, and natural potential to realize community welfare based on piety, independence and intellectuality.*
5. *Organizing good, clean and authoritative governance and services in the implementation of university autonomy to create a competitive, creative and innovative university based on piety, autonomy, and intellectuality.*
6. *Creating a learning process and environment that is able to empower students creatively and innovatively to carry out lifelong learning based on piety, autonomy, and intellectualit.*
7. *Develop cooperation with other institutions, both national and international, creatively and innovatively to improve the quality of the implementation of tridharma with the principle of equality and mutual benefit based on piety, autonomy, and intellectuality.*