UNIVERSITAS GADJAH MADA
Faculty of Mathematics and Natural Sciences
Mathematics Department
Sekip Utara Bulaksumur Yogyakarta 55281 Telp: +62 274 552243 Fax: +62 274 555131 Email: math@ugm.ac.id Website: http://math.fmipa.ugm.ac.id

Undergraduate Programme in Mathematics
Telp : +62 274 552243
Email : maths1@ugm.ac.id; kaprodi-s1-matematika.mipa@ugm.ac.id
sekprodi-s1-matematika.mipa@ugm.ac.id
Website : http://s1math.fmipa.ugm.ac.id/

MODULE HANDBOOK

Module name	Geometry in *n*-Dimensional Euclidean Space
Module level, if applicable	Bachelor
Code, if applicable	MMM-2115
Subtitle, if applicable	-
Courses, if applicable	Geometry in *n*-Dimensional Euclidean Space
Semester(s) in which the module is taught	3th(third)
Person responsible for the module	Chair of the Lab. of Analysis
Lecturer(s)	Imam Solekhudin, Ph.D.
Language	Bahasa Indonesia
Relation to curriculum	Bachelor Degree, Elective Course, 3rd semester
Type of teaching, contact hours	150 minutes lectures and 180 minutes structured activities per week.
Workload	Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam.
Credit points	3
Requirements according to the examination regulations	Students have taken Geometry in *n*-Dimensional Euclidean Space course (MMM-2115) and have an examination card where the course is stated on.
Recommended prerequisites	Students have taken Analytic Geometry course (MMM-1106) and have participated in the final examination of the course.
Module objectives/intended learning outcomes	After completing this course the students will have : CO1. ability to generalize concepts in course analytic geometry into n dimensional Euclidean space. CO2. ability to prove some theorems which are the generalization of the similar theorems in the two and three-dimensional space analytic geometry.
Content	a. n dimensional Euclidean Space ; Norm, Inner product, Orthonormal basis, Direction numbers, Direction Cosines, Direction Angels, Orthogonal Projection. b. Line-n; Equations of Line-n, Angle between two lines-n, Distance from a point to a line-n, Distance between two lines-n. c. Hyperplane ; Hesse Equation, Distance from a point to a hyperplane, Normal Equations, Angle between two hyperplanes, line-n and hyperplane. d. Sphere-n**:** Equations, Tangent hyperplane, Power, circle-n, Bundle of spheres-n. e. Quadratic Equations: Ellipsoid n, Hyperboloid n, Paraboloid n, Quadratic equation through 2n points.
Study and examination requirements and forms of examination	The final mark will be weighted as follows: No — Assessment methods (components, activities) — Weight (percentage) 1 — Final Examination — 40 2 — Mid-Term Examination — 35 4 — Class Activities: Quiz, Homework, etc. — 25

	The initial cut-off points for grades A, B, C, and D should not be less than 80%, 70%, 50%, and 40%, respectively.
Media employed	White/Black Board, LCD Projector, Laptop/Computer
Reading List	1. Erwin Kreyzig, 1978, *Introduction to Functional Analysis with Application*, John Willey and Sons, Canada. 2. Duncan McLaren Young (D. M. Y.) Sommerville, 1959, *Analytical Geometry of Three Dimensional,* Cambridge University Press, London. 3. Wilhelmus Johannes Vollewens, 1946, *Repetitiedictaat Analytische Meetkunde*, Delftche Uitgevers Maatschappij, Delft.

PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1			v			v			
CO 2			v						v