MODULE HANDBOOK

Module designation	*Topology*
Semester(s) in which the module is taught	*5*
Person responsible for the module	*Nora Hariadi*
Language	*Indonesian*
Relation to curriculum	*Elective (pure math)*
Teaching methods	*Question based learning, small group discussion, lecturing, project based.*
Workload (incl. contact hours, self-study hours)	*(Estimated) Total workload: 8.5 hours x 14 weeks + 3 hours x 2 weeks* *Contact hours: 150 minutes lectures, 180 minutes structured activities, and 180 minutes individual study per week* *Private study including examination preparation, specified in hours[1]:*
Credit points	*3 SKS (4.77 ECTS)*
Required and recommended prerequisites for joining the module	*Analysis 1*

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[1] When calculating contact time, each contact hour is counted as a full hour because the organisation of the schedule, moving from room to room, and individual questions to lecturers after the class, all mean that about 60 minutes should be counted.

Module objectives/intended learning outcomes	*After completing the course, students have the ability* 1. *to determine the metric space and it's properties* 2. *to apply the basic concepts of topological space* 3. *to explain the definition and the properties of continuous function in topological space* 4. *to analyze the connectedness and separation properties in topological space* 5. *to construct a new topological space from the old ones* 6. *to analyze the convergence of the sequence in topological space* 7. *to analyze the compactness properties in topological space* 8. *to use the topological properties in the application problems* 9. *to work in groups*

Content	1. *Topological space and continuity*
	   a. *Metric space and topological space*
	   b. *Continuous maps*
	   c. *Connectedness*
	   d. *Separation properties*
	2. *Construction of topological space*
	   a. *The product topology*
	   b. *The quotient topology*
	3. *Convergence in topological space*
	   a. *Convergence of nets*
	   b. *Nets and filters*
	4. *Compactness*
	   a. *Compact space*
	   b. *Continuous maps and compactness*
	   c. *Tikhonov's theorem*
	5. *Special topics*

Examination forms	1. *Class activities : Quiz (written and computer-based), homework.* 2. *Mid-term examination* 3. *Final examinations* 4. *Group project : paper and presentation*

Study and examination requirements	*The final mark will be weighted as follows :* 1. *Quiz (written and computer-based): 20%* 2. *Homework: 10%* 3. *Mid-term examination: 20%* 4. *Final examinations : 20%* 5. *Group project : 20%* 6. *Peer evaluation : 10%* *To succesfully pass the module it requires minimum 55% of the total mark.* | *Mark*	*Grade* | |---|---|
85—100	*A*
80—<85	*A-*
75—<80	*B+*
70—<75	*B*
65—<70	*B-*
60—<65	*C+*
55—<60	*C*
40—<55	*D*
<40	*E*	
Reading list	1. *Waldmann, S., 2014, Topology, An Introduction, Springer International Publishing Switzerland* 2. *J. R. Munkres, 2000, Topology, 2nd ed, Prentice Hall Inc, London.* 3. *C. W. Patty, 1993, Foundations of Topology, International Thomson Publishing*