Rencana Program dan Kegiatan Pembelajaran Semester (RPKPS)

Statistika Kehutanan

REG

Oleh:

RONGGO SADONO, EMMA SORAYA

Program Studi MAGISTER ILMU KEHUTANAN
Departemen KEHUTANAN
Fakultas KEHUTANAN
UNIVERSITAS GADJAH MADA
2021 GENAP

RENCANA KEGIATAN PEMBELAJARAN SEMESTER

A. Identitas Matakuliah / *Course Detail*

1.	Nama Matakuliah / *Course Name*	:	Statistika Kehutanan
2.	Kode/SKS/Sifat / *Code/Credits/Status*	:	KTU 695/2/Wajib (*Compulsory*)
3.	Prasyarat / *Prerequisite*	:	
4.	Deskripsi Singkat / *Short Description*	:	The course provides knowledge and skills in multivariate statistics, including short theory, calculation technique, interpretation, and forestry applications. In addition, the course will provide some in-depth studies of inference theory in multivariate statistics and correpondence analysis. Multiple and Logistic Regression, Principle Component Analysis, Cluster Analysis, Discriminat Analysis, Correpondence Analysis, and Multi Dimensional Scaling are some of the more in-depth concepts covered. Furthermore, the course is designed for students with intermediate statistical knowledge. The emphasis is on multivariate statistics and correpondence analysis theories as well as applications. The course assumes a basic understanding of probability and inference theory. Computer literacy is required because we use the computer extensively, including statistical software SPSS and R Statistics. In addition, we will spend more time on conceptual understanding and application of these techniques and less time on their mathematical foundation. Therefore, students should be able to comprehend various statistical methods and apply appropriate analyses to specific objectives in the forestry field.
5.	Tujuan Pembelajaran / *Learning Objective*	:	Students are able to perform a variety of multivariate statistical techniques and correspondence analysis, with a focus on the appropriateness of these techniques in forestry and the interpretation of the results, and to communicate their findings in scientific publications.
6.	Dosen Pengampu Matakuliah / *Lecturers*	:	RONGGO SADONO, EMMA SORAYA
7.	Capaian Pembelajaran Matakuliah / *Course Learning Outome (CPMK/CLO)*	:	

Kode / *Code*	**Deskripsi / *Description***	**PLO/SO/ELO/CPL/LG**
CLO1	Students able to show responsibility and confidance to follow the procedure of data collection and are able to perform multiple regression	PLO 2

Kode / *Code*	Deskripsi / *Description*	PLO/SO/ELO/CPL/LG
CLO2	Students understand the procedure of data collection and are able to perform logistic regression	PLO 6
CLO3	Students understand the data collection procedure and are able to perform multivariate analysis	PLO 6
CLO4	Students able to Implement the data collection procedure and are able to perform correspondence analysis or multidimensional scaling	PLO 7

PLO / PI *Detail*

PLO 2	Value (responsibility, confidence, emotional maturity, ethics, lifelong learner, develop network)	*Having responsibility, confidence, emotional maturity, ethics, and awareness of being a lifelong learner and able to develop network.*
PLO 6	Skill (Logic, Critical, Innovative Thinking)	*Able to apply logical, critical, systematic and innovative thinking skills by utilizing information technology to produce solutions in form of scientific documents individually as well as in a team.*
PLO 7	Skill (Formulating Research)	*Able to formulate research questions, developing and conducting appropriate plan and methods, collecting and analyzing data, synthesizing and inferring research findings in forestry by multidisciplinary approaches that publishable on nationally accredited and/or reputable international journal.*

B. Topik Perkuliahan / *Course Materials*

Bahasan / *Main Discussion*	Estimasi Waktu / *Estimated Times (Hour)*	Kompetensi (*Course Learning Outcomes*)
Data collection procedure, data analysis with multiple regression, and interpretation and communication of data analysis results	10	Value, Knowledge, and Skills
Data collection procedure, data analysis with logistic regression, and interpretation and communication of data analysis results	4	Value, Knowledge, and Skills
Data collection procedure, data analysis with multivariate analysis, and interpretation and communication of the results	10	Value, Knowledge, and Skills
Data collection procedure, data analysis with correspondence analysis and multidimensional scaling, and interpretation and communication of the results	4	Value, Knowledge, and Skills

C. Rencana Asesmen / Assesment Plan

CO/CPMK	Tipe / *Type*	Deskripsi / *Description*	Persentase / *Percentage*	PLO/SO/ELO/CPL/LG
CLO1	TUGAS	Tugas	24	PLO 2
CLO2	UTS	Tugas	6	PLO 6
CLO3	TUGAS	Tugas	30	PLO 6
CLO4	TUGAS	Tugas	40	PLO 7

D. Referensi / References

Borg I; Groenen PJF & Mair P.2013. Applied Multidimensional Scaling. Springer.

Greenacre M. 2017. Correspondence Analysis in Practice 3rd Ed. CRC Press.

Hosmer DW; Lemeshow S & Sturdivant RX. 2013. Applied Logistic Regression 3rd Ed. Wiley.

Zelterman D. 2015. Applied Multivariate Statistics with R. Springer.

E. Rencana Kegiatan Pembelajaran Mingguan (RKPM) / *Weakly Teaching Plan*

Pertemuan Ke / *Week*	Tujuan Ajar / *Learning Objective*	Topik / *Topic*	Media Ajar / *Teaching Media*	Metode Assesment / *Assesment Method*	Metode Ajar / *Teaching Method*	Aktivitas Mahasiswa / *Student Activity*	Aktivitas Dosen / *Lecturer Activity*	Sumber Ajar / *Learning Resources*
1	Students understand the procedure of data collection and are able to perform multiple and logistic regression	Data, type of data, procedure of collecting data for multiple regression	Slide presentation, Video Tutorial, and relevant reputated journals	Midterm	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer
2	Students understand the procedure of data collection and are able to perform multiple and logistic regression	-. Model bulding -. Model fitting -. Standard error of the estimates - Coefficient of determination	Slide presentation, Video Tutorial, and relevant reputated journals	Midterm	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer
3	Students understand the procedure of data collection and are able to perform multiple and logistic regression	Model evaluation, hypothesis testing, and part and partial correlation	Slide presentation, Video Tutorial, and relevant reputated journals	Midterm	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer
4	Students understand the procedure of data collection and are able to perform multiple and logistic regression	Collinearity diagnostic, residual analysis,and model validation	Slide presentation, Video Tutorial, and relevant reputated journals	Midterm	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer

Pertemuan Ke / *Week*	**Tujuan Ajar / *Learning Objective***	**Topik / *Topic***	**Media Ajar / *Teaching Media***	**Metode Assesment / *Assesment Method***	**Metode Ajar / *Teaching Method***	**Aktivitas Mahasiswa / *Student Activity***	**Aktivitas Dosen / *Lecturer Activity***	**Sumber Ajar / *Learning Resources***
5	Students understand the procedure of data collection and are able to perform multiple and logistic regression	Multiple Nonlinear regression	Slide presentation, Video Tutorial, and relevant reputated journals	Midterm	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer
6	Students understand the data collection procedure and are able to perform multivariate analysis	Data and procedure of collecting data for logistic regression, and performing logistic regression with SPSS	Slide presentation, Video Tutorial, and relevant reputated journals	Midterm	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Hosmer DW; Lemeshow S & Sturdivant RX. 2013. Applied Logistic Regression 3rd Ed. Wiley.
7	Students understand the data collection procedure and are able to perform multivariate analysis	Logistic regression: interpreting and communicating the results	Slide presentation, Video Tutorial, and relevant reputated journals	Midterm	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Hosmer DW; Lemeshow S & Sturdivant RX. 2013. Applied Logistic Regression 3rd Ed. Wiley.
8	Students understand the data collection procedure and are able to perform multivariate analysis	Data and procedure of collecting data for multivariate statistics, and performing principal component analysis with SPSS	Slide presentation, Video Tutorial, and relevant reputated journals	Teamwork assignment	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer
9	Students understand the data collection procedure and are able to perform multivariate analysis	Principal component analysis: interpreting and communicating the results	Slide presentation, Video Tutorial, and relevant reputated journals	Teamwork assignment	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer
10	Students understand the data collection procedure and are able to perform multivariate analysis	Performing cluster analysis with SPSS and R statistics	Slide presentation, Video Tutorial, and relevant reputated journals	Teamwork assignment	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer
11	Students understand the data collection procedure and are able to perform multivariate analysis	Cluster analysis: interpreting and communicating the results	Slide presentation, Video Tutorial, and relevant reputated journals	Teamwork assignment	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer
12	Students understand the data collection procedure and are able to perform multivariate analysis	Discriminat analysis: procedure, interpretation, and communicate the results	Slide presentation, Video Tutorial, and relevant reputated journals	Teamwork assignment	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Zelterman D. 2015. Applied Multivariate Statistics with R. Springer

Pertemuan Ke / *Week*	**Tujuan Ajar / *Learning Objective***	**Topik / *Topic***	**Media Ajar / *Teaching Media***	**Metode Assesment / *Assesment Method***	**Metode Ajar / *Teaching Method***	**Aktivitas Mahasiswa / *Student Activity***	**Aktivitas Dosen / *Lecturer Activity***	**Sumber Ajar / *Learning Resources***
13	Students understand the data collection procedure and are able to perform correspondence analysis or multidimensional scaling.	Data collection procedure, data analysis with correspondence analysis, and interpretation and communication of the results	Slide presentation, Video Tutorial, and relevant reputated journals	Team work, Final exam	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Greenacre M. 2017. Correspondence Analysis in Practice 3rd Ed. CRC Press
14	Students understand the data collection procedure and are able to perform correspondence analysis or multidimensional scaling.	Data collection procedure, data analysis with multidimensional scaling, and interpretation and communication of the results	Slide presentation, Video Tutorial, and relevant reputated journals	Team work, Final exam	Collaborative learning, discussion, and browsing internet	Aktif browsing jurnal yang relevan dan bahan dari sumber yang terpercaya	Mendorong mahasiswa aktif browsing jurnal yang relevan	Borg I; Groenen PJF & Mair P.2013. Applied Multidimensional Scaling. Springer