YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
LESSON PLAN

(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand the basic principles of counting
6. Achievement Indicator   :
    a) Student can use addition principle
    b) Student can use multiplication principle
7. Material   : The basic principles of counting
8. Lecture Activity   : 1

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain the aim of the course and give motivation	20'	Discussion and Exercise	LCD, white/black board	A: 31-39 B: 1-16
Main Activities	1. Explain the definition of addition principle 2. Explain the definition of multiplication principle 3. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
    The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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YOGYAKARTA STATE UNIVERSITY
FACULTY OF MATHEMATICS AND NATURAL SCIENCES
LESSON PLAN

FRM/FMIPA/064-00
5 September 2008

(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand permutation and combination
6. Achievement Indicator   :
    a) Student can use permutation
    b) Student can use combination
7. Material   : Permutation and Combination
8. Lecture Activity   : 2

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the principle of counting	20'	Discussion and Exercise	LCD, white/black board	A: 31-39 B: 1-16
Main Activities	1. Explain permutation and combination 2. Do exercise and discuss the Results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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LESSON PLAN

(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand probability
6. Achievement Indicator   :
    a) Student can explain probability
    b) Student can solve probability problems
7. Material   : Probability
8. Lecture Activity   : 3

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (probability)	20'	Discussion and Exercise	LCD, white/black board	A: 1-30 B: 25-54
Main Activities	1. Explain notation and terminology 2. Explain definition of probability 3. Explain some properties of probability 4. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
    The evaluation is performed based on the student activities in discussion, doing exercise.

10. Reference

    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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LESSON PLAN

(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand conditional probability
6. Achievement Indicator   :
    a) Student can explain conditional probability
    b) Student can solve conditional probability problems
7. Material   : Conditional probability
8. Lecture Activity   : 4

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (probability)	20'	Discussion and Exercise	LCD, white/black board	A: 1-30 B: 25-54
Main Activities	1. Explain conditional probability 2. Do exercise and discuss the Results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. Reference
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand Bayes theorem
6. Achievement Indicator   :
   a) Student can explain Bayes theorem
   b) Student can solve probability problem related to Bayes theorem
7. Material   : Bayes theorem
8. Lecture Activity   : 5

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the conditional probability	20'	Discussion and Exercise	LCD, white/black board	A: 1-30 B: 25-54
Main Activities	1. Explain Bayes theorem 2. Do exercise and discuss the Results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

11. Evaluation
    The evaluation is performed based on the student activities in discussion, doing exercise.

12. Reference
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand random variables and discrete random
                                     variable
6. Achievement Indicator   :
    a) Student can explain random variables
    b) Student can explain discrete random variable
    c) Student can solve problems related discrete random variable
7. Material   : Random variables and their distributions
8. Lecture Activity   : 6

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (random variables)	20'	Discussion and Exercise	LCD, white/black board	A: 53-83
Main Activities	1. Explain random variables 2. Explain discrete random variables 3. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
    The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.

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FRM/FMIPA/064-00
5 September 2008

(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   :To understand continuous random variables
6. Achievement Indicator   :
   a) Student can explain the definition of continuous random variable
   b) Student can solve problem related to continuous random variable
7. Material   : Continuous random variables
8. Lecture Activity   : 7

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (random variable)	20'	Discussion and Exercise	LCD, white/black board	A: 53-83
Main Activities	1. Explain continuous random variable 2. Do exercise and discuss the results				
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
   A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.

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2. Subject & Code : Probability Theory, MAA 317
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : IV, Duration : 100 minutes
5. Based Competency : To understand the expectation of random variables
6. Achievement Indicator :
   a) Student can find the expectation of discrete and continuous random variables
7. Material : The expectation of random variables
8. Lecture Activity : 8

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (discrete and continuous random variables)	20'	Discussion and Exercise	LCD, white/black board	A: 53-83
Main Activities	1. Explain the properties of expected values for discrete random variable 2. Explain the properties of expected values for continuous random variable 3. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand the properties of expectation
6. Achievement Indicator   :
   a) Student can explain the properties of expectation
   b) Student can prove the properties of expectation
7. Material   : The properties of expectation
8. Lecture Activity   : 9

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (discrete random variable and continuous random variable)	20'	Discussion and Exercise	LCD, white/black board	A: 53-83
Main Activities	1. Explain the properties of expectation 2. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.

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2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand the moment of generating function
6. Achievement Indicator   :
    c) Student can find the moment generating functions
7. Material   : The moment generating function
8. Lecture Activity   : 10

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (discrete random variable and continuous random variable)	20'	Discussion and Exercise	LCD, white/black board	A: 53-83
Main Activities	3. Explain the moment generating function 4. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.

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1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand special discrete distributions
6. Achievement Indicator   :
   a) Student can solve problems related to Bernoulli and binomial distributions
   b) Student can find the expectation, variances and the moment generating function from Bernoulli and binomial distribution
7. Material   : Bernoulli and binomial distributions
8. Lecture Activity   : 11

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (special discrete distirbutions)	20'	Discussion and Exercise	LCD, white/black board	A: 91-124 B: 126-232
Main Activities	1. Explain Bernoulli distribution 2. Explain binomial distribution 3. Do exercise and discuss the Results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation

   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand discrete uniform, Poisson, and Geometric
                                 distributions
6. Achievement Indicator   :
   a) Student can solve problems related to discrete uniform, Poisson, and Geometric distributions
   b) Student can find the expectation, variances and the moment generating function from
      discrete uniform, Poisson, and Geometric distributions
7. Material   : Discrete uniform, Poisson, and Geometric distributions
8. Lecture Activity   : 12

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material of special discrete distributions	20'	Discussion and Exercise	LCD, white/black board	A: 91-124 B: 126-232
Main Activities	1. Explain discrete uniform distribution 2. Explain Poisson distribution 3. Explain geometric distribution 4. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Probability Theory, MAA 317
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : IV, Duration : 100 minutes
5. Based Competency : To understand negative binomial and hypergeometric distributions
6. Achievement Indicator :
   a) Student can solve problems related to negative binomial and hypergeometric distributions
   b) Student can find the expectation, variances and the moment generating function from negative binomial and hypergeometric distributions
7. Material : Negative binomial and hypergeometric distributions
8. Lecture Activity : 13

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the special discrete distributions	20'	Discussion and Exercise	LCD, white/black board	A: 91-124 B: 126-232
Main Activities	1. Explain negative binomial distribution 2. Explain hypergeometric distribution 3. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
   A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
   B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand continuous uniform and gamma distributions
6. Achievement Indicator   :
    a) Student can find the expectation, variances and the moment generating function from continuous uniform and Gamma distributions
    b) Student can solve problems related to continuous uniform and gamma distributions
7. Material   : Continuous uniform and gamma distributions
8. Lecture Activity   : 14

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the special continuous distribution	20'	Discussion and Exercise	LCD, white/black board	A: 91-124 B: 126-232
Main Activities	1. Explain contiuous uniform distribution 2. Explain gamma distribution 3. Explain the Binomial concept 4. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand exponential and normal distributions
6. Achievement Indicator   :
   a) Student can find the expectation, variances and the moment generating function from exponential and normal distributions
   b) Student can solve problems related to exponential and normal distributions
7. Material   : Exponential and normal distributions
8. Lecture Activity   : 15

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (special continuous distributions)	20'	Discussion and Exercise	LCD, white/black board	A: 91-124 B: 126-232
Main Activities	1. Explain exponential distribution 2. Explain normal distribution 3. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation

    The evaluation is performed based on the student activities in discussion, doing exercise.

10. References

     A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
     B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand Weibull, pareto, student's t distributions
6. Achievement Indicator   :
   a) Student can find the expectation, variances and the moment generating function from Weibull, pareto, student's t distributions
   b) Student can solve problems related to Weibull, pareto, student's t distributions
7. Material   : Weibull, pareto, student's t distributions
8. Lecture Activity   : 16

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (special continuous distribution)	20'	Discussion and Exercise	LCD, white/black board	A: 91-124 B: 126-232
Main Activities	1. Explain Weibull distribution 2. Explain pareto distribution 3. Explain student's t distribution 4. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand chi-square, F, and Beta distributions
6. Achievement Indicator   :
  a) Student can find the expectation, variances and the moment generating function from F, chi-square, and Beta distributions
  b) Student can solve problems related to chi-square, F, and Beta distributions
7. Material   : Chi-square, F, and Beta distributions
8. Lecture Activity   : 17

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (special continuous distribution)	20'	Discussion and Exercise	LCD, white/black board	A: 91-124 B: 126-232
Main Activities	1. Explain chi-square distribution 2. Explain F distribution 3. Explain Beta distribution 4. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
  The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
   A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
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1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Probability Theory, MAA 317
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : IV, Duration : 100 minutes
5. Based Competency : To understand joint discrete distributions
6. Achievement Indicator :
    a) Student can solve problems related to joint discrete distributions
7. Material : Joint discrete distributions
8. Lecture Activity : 18

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (joint distributions)	20'	Discussion and Exercise	LCD, white/black board	A: 137-160 B: 244-293
Main Activities	1. Explain joint discrete distributions 2. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
    The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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2. Subject & Code : Probability Theory, MAA 317
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : IV, Duration : 100 minutes
5. Based Competency : To understand joint continuous distributions
6. Achievement Indicator :
   a) Student can solve problems related to joint continuous distributions
7. Material : Joint continuous distributions
8. Lecture Activity : 19

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (joint distributions)	20'	Discussion and Exercise	LCD, white/black board	A: 137-160 B: 244-293
Main Activities	1. Explain joint continuous distributions 2. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation

   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References

A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand independent random variables
6. Achievement Indicator   :
   a) Student can explain independent random variables
   b) Student can solve problems related to independent random variables
7. Material   : Independent random variables
8. Lecture Activity   : 20

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (independent event)	20'	Discussion and Exercise	LCD, white/black board	A: 137-160 B: 244-293
Main Activities	1. Explain independent random variables 2. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation

     The evaluation is performed based on the student activities in discussion, doing exercise.

10. References

A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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LESSON PLAN

(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand conditional distributions and random samples
6. Achievement Indicator   :
    c) Student can explain conditional distributions and random samples
    d) Student can solve problems related to conditional distributions
7. Material   : Conditional distributions and random samples
8. Lecture Activity   : 21

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (conditional probability)	20'	Discussion and Exercise	LCD, white/black board	A: 137-160 B: 244-293
Main Activities	1. Explain conditional distributions 2. Explain random samples 3. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation

   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References

    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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FACULTY OF MATHEMATICS AND NATURAL SCIENCES
LESSON PLAN

FRM/FMIPA/064-00
5 September 2008

(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand the properties of expected values of two or more random variables
6. Achievement Indicator   :
   a) Student can get the expected values of two or more random variables from probability mass functions
   b) Student can get the expected values of two or more random variables from probability density functions
7. Material   : The properties of expected values
8. Lecture Activity   : 22

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (expected values)	20'	Discussion and Exercise	LCD, white/black board	A: 171-188 B: 309-372
Main Activities	1. Explain the properties of expected values for two or more random variables 2. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation

     The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
     A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
     B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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YOGYAKARTA STATE UNIVERSITY
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LESSON PLAN

(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand covariance
6. Achievement Indicator   :
    a) Student can get covariance from probability mass functions
    b) Student can get covariance from probability density functions
7. Material   : Covariance
8. Lecture Activity   : 23

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (probability mass function and probability density function	20'	Discussion and Exercise	LCD, white/black board	A: 171-188 B: 309-372
Main Activities	1. Explain covariance 2. Explain correlation 3. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
    The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
    B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Probability Theory, MAA 317
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : IV, Duration : 100 minutes
5. Based Competency : To understand correlation
6. Achievement Indicator :
   c) Student can get correlation from probability mass functions
   d) Student can get correlation from probability density functions
7. Material : Correlation
8. Lecture Activity : 24

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (probability mass function and probability density function	20'	Discussion and Exercise	LCD, white/black board	A: 171-188 B: 309-372
Main Activities	4. Explain covariance 5. Explain correlation 6. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
   C. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
   D. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand conditional expectation
6. Achievement Indicator   :
   a) Student can get conditional expectation from probability mass functions
   b) Student can get conditional expectation from probability density functions
7. Material   : Conditional expectation
8. Lecture Activity   : 25

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (conditional probability)	20'	Discussion and Exercise	LCD, white/black board	A: 171-188 B: 309-372
Main Activities	1. Explain conditional expectation from probability mass functions 2. Explain conditional expectation from probability density functionc 3. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation

   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References

   A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
   B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand joint moment generating functions
6. Achievement Indicator   :
   a) Student can get joint moment generating functions
7. Material   : Joint moment generating functions
8. Lecture Activity   : 26

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (moment generating function)	20'	Discussion and Exercise	LCD, white/black board	A: 171-188 B: 309-372
Main Activities	1. Explain joint moment generating functions 2. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation

   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
     A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.
     B. Ross, Sheldon M. 1998. *A First Course in Probability*. New Jersey: Prentice-Hall.

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(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand the cumulative density function techniques
6. Achievement Indicator   :
    a) Student can explain the cumulative density function techniques
    b) Student can solve problem related to the cumulative density function techniques
7. Material   : The cumulative density function techniques
8. Lecture Activity   : 27

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (cumulative density function)	20'	Discussion and Exercise	LCD, white/black board	A: 193-214
Main Activities	1. Explain the cumulative density function techniques 2. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
    The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
        A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.

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(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand transformation methods
6. Achievement Indicator   :
    a) Student can explain transformation 1-1
    b) Student can explain transformation not 1-1
7. Material   : Transformation methods
8. Lecture Activity   : 28

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (functions of random variables)	20'	Discussion and Exercise	LCD, white/black board	A: 193-214
Main Activities	1. Explain transformation 1-1 2. Explain transformation not 1-1 3. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
   The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
        A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.

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1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Probability Theory, MAA 317
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : IV, Duration : 100 minutes
5. Based Competency : To understand sums of random variables
6. Achievement Indicator :
    a) Student can solve problem related to sums of random variables
7. Material : Sums of random variables
8. Lecture Activity : 29

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (discrete random variable and continuous random variable)	20'	Discussion and Exercise	LCD, white/black board	A: 193-214
Main Activities	1. Explain sums of random variables 2. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation
    The evaluation is performed based on the student activities in discussion, doing exercise.

10. References
    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.

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(Theory Class)

1. Faculty /Study Program   : MIPA/Mathematics Education
2. Subject & Code   : Probability Theory, MAA 317
3. The number of SKS   : Theory : 2 sks Practice : 1 sks
4. Semester and Duration   : IV, Duration : 100 minutes
5. Based Competency   : To understand the moment generating function techniques
6. Achievement Indicator   :
   a) Student can solve problem related to the moment generating function techniques
7. Material   : The moment generating function techniques
8. Lecture Activity   : 30

Step Component	Activity	Duration	Method	Media	References
Introduction	Explain briefly the material (moment generating function)	20'	Discussion and Exercise	LCD, white/black board	A: 193-214
Main Activities	1. Explain the moment generating function techniques 2. Do exercise and discuss the results	60'			
Closing Activity	Conclude the entire materials and give tasks	10'			
Further Activities	Invite the students to ask or give an opinion about the materials	10'			

9. Evaluation

    The evaluation is performed based on the student activities in discussion, doing exercise.

10. References

    A. Bain, Lee J. & Engelhardt, Max. 1992. *Introduction to Probability and Mathematical Statistics*. Belmont: Duxbury Press.

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