



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 : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand basic concepts of statistics
6. Achievement Indicator :
 - a) Student can explain definition of statistics, data, types of data, variable
 - b) Student can explain sample and population, parameter and statistics
 - c) Student can explain definition of scale of measurement
7. Material : The fundamental concepts of statistics
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: 2-19 B: 1-9 |
| Main Activities | <ol style="list-style-type: none"> 1. Explain the definition of statistics, i.e. descriptive statistics and inferential statistics 2. Explain the definition of data, type of data, and variable 3. Explain scale of measurement 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

Yogyakarta,
Lecturer

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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand description of data
6. Achievement Indicator :
 - a) Student can make tables and graphs
 - b) Student can explain the meaning of tables and graphs
7. Material : Visualizing Data
8. Lecture Activity : 2

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|-----------------------|
| Introduction | Explain briefly the important making of tables and graphs | 20' | Discussion and Exercise | LCD, white/black board | A: 36-72 B: 41-116 |
| Main Activities | 1. Explain line graph, pie chart, bar graph, double bar graph, dot plot, ogive, steam and leaf plot, box plot, 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

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10. References

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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand sigma notation
6. Achievement Indicator :
 - a) Student can explain the rules of sigma notation
 - b) Student can express and evaluate of sigma notation
7. Material : Sigma Notation
8. Lecture Activity : 3

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|-----------------------|
| Introduction | Explain briefly the material (sigma notation) | 20' | Discussion and Exercise | LCD, white/black board | A: 36-72 B: 41-116 |
| Main Activities | 1. Explain the rules of sigma notation 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

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- A. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand frequency distribution
6. Achievement Indicator :
 - a) Student can explain the terms in frequency distribution
 - b) Student can make frequency distribution
7. Material : Frequency distribution
8. Lecture Activity : 4

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|-----------------------|
| Introduction | Explain briefly the material (using frequency distribution) | 20' | Discussion and Exercise | LCD, white/black board | A: 36-72 B: 41-116 |
| Main Activities | 1. Explain frequency distribution 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

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10. Reference

- A. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand The arithmetic mean and the geometric mean
6. Achievement Indicator :
 - a) Student can calculate arithmetic mean and geometric mean
7. Material : Measures of central tendency (The arithmetic mean and the geometric mean)
8. Lecture Activity : 5

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|-----------------------|
| Introduction | Explain briefly the use of measures of central tendency | 20' | Discussion and Exercise | LCD, white/black board | A: 36-72 B: 41-116 |
| Main Activities | 1. Explain the arithmetic mean and the geometric mean 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand the harmonic mean, the related arithmetic mean, the geometric mean and the harmonic mean, the weighted mean and the overall mean
6. Achievement Indicator :
 - a) Student can calculate the harmonic mean
 - b) Student can explain the related the arithmetic mean, the geometric mean and the harmonic mean
 - c) Student can calculate the weighted mean
 - d) Student can calculate the overall mean
7. Material : measures of central tendency (the harmonic mean, the related arithmetic mean, the geometric mean and the harmonic mean, the weighted mean and the overall mean)
8. Lecture Activity : 6

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|-----------------------|
| Introduction | Explain briefly the material (measures central tendency) | 20' | Discussion and Exercise | LCD, white/black board | A: 36-72 B: 41-116 |
| Main Activities | 1. Explain the harmonic mean, the related arithmetic mean, the geometric mean and the harmonic mean, the weighted mean and the overall mean 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
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10. References
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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand median and mode
6. Achievement Indicator :
 - a) Student can calculate median
 - b) Student can calculate mode
7. Material : Measures of central tendency (median and mode)
8. Lecture Activity : 7

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|-----------------------|
| Introduction | Explain briefly the material (measures of central tendency) | 20' | Discussion and Exercise | LCD, white/black board | A: 36-72 B: 41-116 |
| Main Activities | 1. Explain median 2. Explain mode 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

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10. References

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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand measures of location
6. Achievement Indicator :
 - a) Student can calculate quartile
 - b) Student can calculate decile
 - c) Student can calculate percentile
7. Material : Measures of location (quartile, decile, percentile)
8. Lecture Activity : 8

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|-------------------------|
| Introduction | Explain briefly the material (measures of location) | 20' | Discussion and Exercise | LCD, white/black board | A: 73-101 B: 117-145 |
| Main Activities | 1. Explain quartile, decile, percentile 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

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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand measures of variation
6. Achievement Indicator :
 - a) Student can calculate range
 - b) Student can calculate variance
 - c) Student can calculate standard deviation
7. Material : measures of variation (range, variance, and standard deviation)
8. Lecture Activity : 9

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|-------------------------|
| Introduction | Explain briefly the material (measures of variation) | 20' | Discussion and Exercise | LCD, white/black board | A: 73-101 B: 117-145 |
| Main Activities | 1. Explain the formula of range 2. Explain the formula of variance and standard deviation 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

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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand combinatorics
6. Achievement Indicator :
 - a) Student can distinguish multiplication principle, permutation and combination
 - b) Student can solve problem by multiplication principle, permutation and combination
 - c) Student can find the binomial coefficients on binomial expansion
7. Material : Combinatorics
8. Lecture Activity : 10

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the material (combinatorics) | 20' | Discussion and Exercise | LCD, white/black board | A: 118-176 B: 181-243 |
| Main Activities | 1. Explain the concepts of multiplication principle, permutation, combination 2. Explain the binomial expansion 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

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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand probability
6. Achievement Indicator :
 - a) Student can explain the concept of probability
 - b) Student can solve the probability problems by the properties of probability
7. Material : Probability
8. Lecture Activity : 11

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the material (probability) | 20' | Discussion and Exercise | LCD, white/black board | A: 118-176 B: 181-243 |
| Main Activities | 1.Explain the definition of classic probability 2.Explain the properties of probability 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

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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : Understanding the concepts of conditional probability, independent event, and Bayes theorem
6. Achievement Indicator :
 - a) Student can explain the concepts of conditional probability, independent event, and Bayes theorem
 - b) Student solve probability problem by conditional probability, independent event and Bayes theorem
7. Material : Conditional probability, independent event, and Bayes theorem
8. Lecture Activity : 12

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the material of probability | 20' | Discussion and Exercise | LCD, white/black board | A: 118-176 B: 181-243 |
| Main Activities | 1. Explain the concept of conditional probability 2. Explain the definition of independent event 3. Explain Bayes theorem 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

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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand random variable
6. Achievement Indicator :
 - a) Student can explain discrete random variable and continuous variable
 - b) Student can analyze $f(x)$ as the probability mass function or probability density function
7. Material : Random variables
8. Lecture Activity : 13

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the use of random probability | 20' | Discussion and Exercise | LCD, white/black board | A: 180-217 B: 265-327 |
| Main Activities | <ol style="list-style-type: none"> 1. Explain the concept of discrete random variable 2. Explain the concept of 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

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2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand discrete probability distributions
6. Achievement Indicator :
 - a) Student can explain Bernoulli and binomial distributions
 - b) Student can solve probability problems using binomial distribution
7. Material : Discrete probability distribution (Bernoulli and Binomial distributions)
8. Lecture Activity : 14

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the discrete probability distribution | 20' | Discussion and Exercise | LCD, white/black board | A: 180-217 B: 265-327 |
| Main Activities | 1. Explain the Bernoulli trial 2. Explain the probability of mass function of Bernoulli random variable 3. Explain the Binomial concept 4. Explain the probability of mass function of Binomial random variable 5. 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' | | | |

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3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand discrete probability distributions
6. Achievement Indicator :
 - a) Student can explain Poisson and hypergeometric distributions
 - b) Student can solve probability problems using Poisson and hypergeometric distribution
7. Material : Poisson and hypergeometric distributions
8. Lecture Activity : 15

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the material (discrete probability distribution) | 20' | Discussion and Exercise | LCD, white/black board | A: 180-217 B: 265-327 |
| Main Activities | 1. Explain the probability of mass function of Poisson random variable 2. Explain the probability of mass function of hypergeometric 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' | | | |

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3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand continuous probability distribution
6. Achievement Indicator :
 - a) Student can explain normal and student's t distributions
 - b) Student can solve probability problems using normal and student's t distributions
7. Material : Normal and student's t distributions
8. Lecture Activity : 16

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the material (continuous probability distribution) | 20' | Discussion and Exercise | LCD, white/black board | A: 224-248 B: 335-379 |
| Main Activities | 1. Explain the probability of density function of normal random variable 2. Explain the probability of density function of student's t 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' | | | |

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4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand continuous probability distribution
6. Achievement Indicator :
 - a) Student can explain chi-square and F distributions
 - b) Student can solve probability problems related to chi-square and F distributions
7. Material : Chi-square and F distributions
8. Lecture Activity : 17

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the material (continuous probability distribution) | 20' | Discussion and Exercise | LCD, white/black board | A: 224-248 B: 335-379 |
| Main Activities | <ol style="list-style-type: none"> 1. Explain the probability of density function of chi-square random variable 2. Explain the probability of density function of F 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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YOGYAKARTA STATE UNIVERSITY
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 LESSON PLAN

FRM/FMIPA/064-00
 5 September 2008

(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand sampling distribution
6. Achievement Indicator :
 - a) Student can use sampling distribution of mean
7. Material : sampling distribution of mean
8. Lecture Activity : 18

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the material (sampling distribution) | 20' | Discussion and Exercise | LCD, white/black board | A: 249-258 B: 403-430 |
| Main Activities | 1. Explain sampling distribution of mean and its properties 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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 5 September 2008

(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand sampling distribution
6. Achievement Indicator :
 - a) Student can use sampling distribution of proportion
 - b) Student can use sampling distribution of variance
7. Material : Sampling distributions of proportion and variance
8. Lecture Activity : 19

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|--------------------------|
| Introduction | Explain briefly the material (sampling distribution) | 20' | Discussion and Exercise | LCD, white/black board | A: 249-258 B: 403-430 |
| Main Activities | 1. Explain sampling distribution of proportion 2. Explain sampling distribution of variance 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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5 September 2008

(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand confidence interval of mean
6. Achievement Indicator :
 - a) Student can solve problem related to confidence interval of mean
7. Material : Confidence interval of mean
8. Lecture Activity : 20

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (confidence interval) | 20' | Discussion and Exercise | LCD, white/black board | A: 296-359 A: 436-486 B: 437-725 |
| Main Activities | 1. Explain the formula of confidence interval of mean 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand confidence interval of difference between two means
6. Achievement Indicator :
 - a) Student can solve problem related to confidence interval of difference between two means
7. Material : Confidence interval of difference between two means
8. Lecture Activity : 21

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (confidence interval of mean) | 20' | Discussion and Exercise | LCD, white/black board | A: 296-359 A: 436-486 B: 437-725 |
| Main Activities | 1. Explain the formula of confidence interval of difference of two means 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand confidence interval of proportion
6. Achievement Indicator :
 - a) Student can solve problem related to confidence interval of proportion
7. Material : Confidence interval of proportion
8. Lecture Activity : 22

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (confidence interval) | 20' | Discussion and Exercise | LCD, white/black board | A: 296-359 A: 436-486 B: 437-725 |
| Main Activities | 1. Explain the formula of confidence interval of proportion 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand confidence interval of the difference between two proportions
6. Achievement Indicator :
 - a) Student can solve problem related to confidence interval of the difference between two proportions
7. Material : Confidence interval of the difference between two proportions
8. Lecture Activity : 23

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (confidence interval of proportion) | 20' | Discussion and Exercise | LCD, white/black board | A: 296-359 A: 436-486 B: 437-725 |
| Main Activities | 1. Explain confidence interval of the difference between two proportions 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand confidence interval of variance
6. Achievement Indicator :
 - a) Student can solve problem related to confidence interval of variance
7. Material : Confidence interval of variance
8. Lecture Activity : 24

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (confidence interval) | 20' | Discussion and Exercise | LCD, white/black board | A: 296-359 A: 436-486 B: 437-725 |
| Main Activities | 1. Explain the formula of confidence interval of variance 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand confidence interval of the ratio of two variances
6. Achievement Indicator :
 - a) Student can solve problem related to confidence interval of the ratio of two variances
7. Material : Confidence interval of the the ratio of two variances
8. Lecture Activity : 25

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (confidence interval of variance) | 20' | Discussion and Exercise | LCD, white/black board | A: 296-359 A: 436-486 B: 437-725 |
| Main Activities | 1. Explain the formula of confidence interval of the ratio of two variances 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand hypothesis testing for mean
6. Achievement Indicator :
 - a) Student can explain basic concept of hypothesis testing
 - b) Student can solve problem related to hypothesis testing for mean
7. Material : Hypothesis testing for mean
8. Lecture Activity : 26

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (hypothesis testing) | 20' | Discussion and Exercise | LCD, white/black board | A: 366-427 A: 436-486 B: 481-725 |
| Main Activities | <ol style="list-style-type: none"> 1. Explain the basic concept of hypothesis testing 2. Explain hypothesis testing of mean 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand hypothesis testing for two means
6. Achievement Indicator :
 - a) Student can solve problem related to hypothesis testing for two means
7. Material : Hypothesis testing for two means
8. Lecture Activity : 27

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (hypothesis testing of mean) | 20' | Discussion and Exercise | LCD, white/black board | A: 366-427 A: 436-486 B: 481-725 |
| Main Activities | 1. Explain hypothesis testing of two means 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand hypothesis testing for proportion
6. Achievement Indicator :
 - a) Student can solve problem related to hypothesis testing for proportion
7. Material : Hypothesis testing for proportion
8. Lecture Activity : 28

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (hypothesis testing) | 20' | Discussion and Exercise | LCD, white/black board | A: 366-427 A: 436-486 B: 481-725 |
| Main Activities | 1. Explain hypothesis testing of proportion 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand hypothesis testing for two proportions
6. Achievement Indicator :
 - a) Student can solve problem related to hypothesis testing for two proportions
7. Material : Hypothesis testing for two proportions
8. Lecture Activity : 29

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|--|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (hypothesis testing of proportion) | 20' | Discussion and Exercise | LCD, white/black board | A: 366-427 A: 436-486 B: 481-725 |
| Main Activities | 1. Explain hypothesis testing of two proportions 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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5 September 2008

(Theory Class)

1. Faculty /Study Program : MIPA/Mathematics Education
2. Subject & Code : Elementary Statistics, MAA 306
3. The number of SKS : Theory : 2 sks Practice : 1 sks
4. Semester and Duration : II, Duration : 100 minutes
5. Based Competency : To understand hypothesis testing for variance and two variances
6. Achievement Indicator :
 - a) Student can solve problem related to hypothesis testing for variance
 - b) Student can solve problem related to hypothesis testing for two variances
7. Material : Hypothesis testing for one variance and two variances
8. Lecture Activity : 30

| Step Component | Activity | Duration | Method | Media | References |
|--------------------|---|----------|-------------------------|------------------------|--|
| Introduction | Explain briefly the material (hypothesis testing) | 20' | Discussion and Exercise | LCD, white/black board | A: 366-427 A: 436-486 B: 481-725 |
| Main Activities | 1. Explain hypothesis testing of variance 2. Explain hypothesis testing of two variances 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. Triola, Mario F. 2004. *Elementary Statistics*. New York: Addison-Wesley.
- B. Weiss, Neil A. 1995. *Introductory to Statistics*. New York: Addison-Wesley.

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