STUDYING CONTRACT
LEARNING PROGRAM OUTLINE
LEARNING UNIT PROGRAM

ACTUARIA

COURSE CODE: PAM 418

3 SCU

SEMESTER VI

MATHEMATICS STUDY PROGRAM
MATHEMATICS AND NATURAL SCIENCES FACULTY
DIPONEGORO UNIVERSITY
SEMARANG

TEACHING-LEARNING CONTRACT

Course Title : **Actuaria**
Code : **PAM 418**
Credit : **3 SKS**
Semester : **VI**

1. Course Advantage

Human being not get out of accident, good losing of good and chattel and also soul. Losing of soul mean the the people die. But people not know when that thing will happened, though if the mentioned break out and coincidence happened at family head, hence situation of family economics will be groggy. To overcome mentioned usually they buy Actuaria policy specially life Actuaria. Because of that's Actuaria science especially life Actuaria given student to can know the problem of Actuaria, like kinds of life Actuaria, calculation of premium and benefit.

2. Course Description

Actuaria this represent studying bases which is used in problem of Actuaria like concept assess money to time, compound interest, future and present value, probability and mortality table. Futhermore studied kinds of life Actuaria of is including assorted in it payment of net premium, benefit by using annuity concept. Besides studied also Actuaria reserve, gross premium and surrender value. This course try as possible present things representing base of problems exist in Actuaria

3. General Instructional Aim

After studying this course of Actuaria, the student expected to be able to know and explain problems of Actuaria, especially kinds of life Actuaria, and also count net premium and gross premium, benefit for heir and also Actuaria reserve.

4. Lecture Strategic

This lecturing uses discourse accompanied with lab work. Every student expected to earn active to ask concepts or things which still not yet been comprehended

and or submit good idea under consideration in the form of personal opinion which obtained from fact exist in its environment or which is obtained from source of bibliography which have been read.

5. References

- Grant, EL, Ireson, WG and Leavenmorth, RS, 1982. *Principles of Egineering Economy*. John Wiley and Sons
- Larson, RE and Gaumnitz, EA, 1962. *Life Actuaria Mathematics*. John Wiley and Sons, New York
- Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* I. Penerbit Karunika Jakarta Universitas Terbuka
- Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* II. Penerbit Karunika Jakarta Universitas Terbuka
- Suparti, Sunarsih, Dwi Ispriyanti, Yuciana Wilandari dan Di Asih I Maruddani, 2004. *Buku Ajar Matematika Asuransi*. Jurusan Matematika FMIPA UNDIP Semarang

6. Scoring Criteria

Criteria of scoring in this course is :

Assess	Point
A	4
AB	3,5
B	3
BC	2,5
C	2
CD	1,5
D	1
E	0

Final score decision is based on this scoring indicator such as :

Quiz	10 %
Task	15 %
Midterm	20 %
Final exam	35 %
Lab Work	20 %

7. Lecture Schedule

Week	Material	Reference
1	Introduction to Actuaria Principal of Monetary Mathematics	Grant, Bab 4, 33 Suparti, dkk, Bab I, 1
2	Probability and Mortality Table Task I	Larson, Bab 1, 1 Sembiring, BMP 1, 1.3 BMP 2, 2.1 Suparti, dkk, Bab II, 10
3	Quiz I Annuity Certain	Larson, Bab 2, 26 Bab 6, 84 Sembiring, BMP 3, 3.2 BMP 5, 5.1 Suparti, dkk, Bab III, 26
4	Life Annuity	Larson, Bab 3, 33 Bab 6, 85 Sembiring, BMP 3, 3.12 BMP 5, 5.5 Suparti, dkk, Bab III, 35
5	Increasing and Decreasing Life Annuity	Larson, Bab 6, 89 Sembiring, BMP 5, 5.16 Suparti, dkk, Bab III, 47
6	Quiz II Life Actuaria and Increasing and Decreasing Life Actuaria	Larson, Bab 4, 50 Bab 6, 95 Sembiring, BMP 4, 4.1 BMP 5, 5.22

		Suparti, dkk, Bab IV, 52, 57
7	Net Annual Premiums and Payable Fractionally Premiums Task II	Larson, Bab 4, 59 Bab 6, 88 Sembiring, BMP 4, 4.16 BMP 5, 5.27 Suparti, dkk, Bab IV, 59
8	Midterm	
9	Net Level Premium Reserves	Larson, Bab 5, 71 Sembiring, BMP 6, 6.1 Suparti, dkk, Bab V, 64
10	Lab Work I : Annuity	
11	Modified Reserves	Larson, Bab 7, 100 Sembiring, BMP 7, 7.1 Suparti, dkk, Bab V, 67
12	Some Method to Count Premium Reserve	Larson, Bab 7, 107 Sembiring, BMP 7, 7.20
13	Lab Work II : Life Actuaria	
14	Quiz III Surrender Value and Gross Premium Task III	Larson, Bab 9, 131 Sembiring, BMP 8, 8.1, 8.15
15	Lab Work III : Premium Reserves	
16	Final Exam	

LEARNING PROGRAM OUTLINE

Course Title : Actuaria

Code / Credit : PAM 418 / 3 SKS

Course Description : Actuaria this represent studying bases which is used in problem of Actuaria like concept assess money to time, compound interest, future and present value, probability and mortality table. Futhermore studied kinds of life Actuaria of is including assorted in it payment of net premium, benefit by using annuity concept. Besides studied also Actuaria reserve, gross premium and surrender value

General Instructional Aim : After studying this course of Actuaria, the student expected to be able know and explain problems of Actuaria, especially kinds of life Actuaria, and also count net premium and gross premium, benefit for heir and also Actuaria reserve

No.	Specific Instructional Aim	Subject	Sub Subject	Duration	References
1.	After studying this course student are expected to have ability to explain concept of time money of value and to count present value and future value from an invesment as function of rate of interest (i) and period of time (n) and also comprehend annuity concept and can calculated	Principal of Monetary Mathematics	▪ Principal of Monetary Mathematics	150 minutes	[1] 33 – 42 [5] 1 – 8
2.	After studying this course student are expected to have ability to calculate	Probability and Mortality Table	▪ Probability and Mortality Table	150 minutes	[2] 1 – 23 [3] 1.3 – 2.23 [5] 10 - 23

	probability an event and expected value, to explain symbol meaning from mortality table and also make the mortality table				
3.	After studying this course student are expected to have ability to explain kinds of annuity and also its relation with rate of interest, future value and present value of annuity	Annuity	▪ Annuity Certain ▪ Life Annuity ▪ Increasing and Decreasing Life Annuity	600 minutes	[2] 26 – 49 84 - 94 [3] 3.2 – 3.26 5.1 – 5.21 [5] 26 – 49
4.	After studying this course student are expected to have ability to explain kind of life Actuaria and can to count its premium	Life Actuaria	▪ Life Actuaria ▪ Increasing and Decreasing Life Actuaria ▪ Net Annual Premiums and Payable Fractionally Premiums	450 minutes	[2] 50 – 69 95 - 97 [3] 4.1 – 4.25 5.22– 5.32 [5] 51 – 62
5.	After studying this course student are expected to have ability to explain meaning, target of and calculation of reserve to kinds of reserve Actuaria	▪ Reserve Actuaria	▪ Net Level Premium Reserves ▪ Modified Reserves ▪ Some Method to Count Premium Reserve	600 minutes	[2] 71 – 82 100 – 123 [4] 6.1 – 6.30 7.1 – 7.36 [5] 64 - 84
6.	After studying this course student are expected to have ability to explain surrender value and method of determining gross premium	Surrender Value and Gross Premium	▪ Surrender Value ▪ Gross Premium	150 minutes	[2] 131 – 138 [4] 8.1 – 8.21

References :

1. Grant, EL; Ireson, WG and Leavenmorth, RS, 1982. *Principles of Egineering Economy*. John Wiley and Sons
2. Larson, RE and Gaumnitz, EA, 1962. *Life Actuaria Mathematics*. John Wiley and Sons, New York
3. Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* I. Penerbit Karunika Jakarta Universitas Terbuka
4. Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* II. Penerbit Karunika Jakarta Universitas Terbuka
5. Suparti, Sunarsih, Dwi Ispriyanti, Yuciana Wilandari dan Di Asih I Maruddani, 2004. *Buku Ajar Matematika Asuransi*. Jurusan Matematika FMIPA UNDIP Semarang

LEARNING UNIT PROGRAM

COURSE TITLE : Actuaria

CODE / CREDIT : PAM 418 / 3 SKS

DURATION : 150 minutes

WEEK : 1

A. INSTRUCTIONAL AIM

1. GENERAL : After studying this course student are expected to have ability to explain concept of time money of value and to count present value and future value from an invesment and also comprehend annuity concept and can calculated

2. SPECIFIC : After studying this course student are expected to have ability to explain concept of time money of value and to count present value and future value from an invesment as function of rate of interest (i) and period of time (n) and also comprehend annuity concept and can calculated

B. SUBJECT : Principal of Monetary Mathematics

C. SUB SUBJECT : Principal of Monetary Mathematics

D. TEACHING-LEARNING ACTIVITIES

STAGE	LECTURER ACTIVITIES	STUDENT ACTIVITIES	LEARNING MEDIA
INTRODUCTION	▪ Describing about matter at the first meeting ▪ Explaining purpose principal of monetary mathematics ▪ Describing about general and specific objectivies competence	Observing	OHP, transparency
PRESENTATION	▪ Explaining about concept of time money of value, formula to use compound interest	Observing, asking, taking notes	OHP, transparency, white board

	▪ Giving examples ▪ Giving similar practice and show student to finish	Observing, asking, taking notes Active do	White board White board
CLOSING	▪ Giving comment of work of student ▪ Giving problems ▪ Giving description about matter on the next meeting	Discuss Taking notes Observing	White board Paper

E. ASSESSMENT : Giving problems to the students

F. REFERENCE : Grant, EL; Ireson, WG and Leavenmorth, RS, 1982. *Principles of Egineering Economy*. John Wiley and Sons

Suparti, Sunarsih, Dwi Ispriyanti, Yuciana Wilandari dan Di Asih I Maruddani, 2004. *Buku Ajar Asuransi*. Jurusan Matematika FMIPA UNDIP Semarang

LEARNING UNIT PROGRAM

COURSE TITLE : Actuaria

CODE / CREDIT : PAM 418 / 3 SKS

DURATION : 150 minutes

WEEK : 2

A. INSTRUCTIONAL AIM

1. GENERAL : After studying this course student are expected to have ability to calculate probability an event and expected value, to explain symbol meaning from tables of mortality and also make the tables mortalitas

2. SPECIFIC : After studying this course student are expected to have ability to calculate probability an event and expected value, symbol meaning from mortality table and also make the mortality table

B. SUBJECT : Probability and Mortality Table

C. SUB SUBJECT : Probability and Mortality Table

D. TEACHING-LEARNING ACTIVITIES

STAGE	LECTURER ACTIVITIES	STUDENT ACTIVITIES	LEARNING MEDIA
INTRODUCTION	▪ Describing about matter at the second meeting ▪ Explaining probability and mortality table used in insuranse	Observing	OHP, transparency
PRESENTATION	▪ Explaining about probability an event, expected value, and symbol from mortality table and also make the mortality table ▪ Giving examples	Observing, asking, taking notes Observing, asking, taking	OHP, transparency, white board White board

	▪ Giving similar practice and show student to finish	notes Active do	White board
CLOSING	▪ Giving comment of work of student ▪ Giving problems ▪ Giving description about matter on the next meeting	Discuss Taking notes Observing	White board Paper

E. ASSESSMENT : Giving problems to the students

F. REFERENCE : Larson, RE and Gaumnitz, EA, 1962. *Life Actuaria Mathematics*. John Wiley and Sons, New York

Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* I. Penerbit Karunika Jakarta Universitas Terbuka

Suparti, Sunarsih, Dwi Ispriyanti, Yuciana Wilandari dan Di Asih I Maruddani, 2004. *Buku Ajar Asuransi*. Jurusan Matematika FMIPA UNDIP Semarang

LEARNING UNIT PROGRAM

COURSE TITLE : Actuaria

CODE / CREDIT : PAM 418 / 3 SKS

DURATION : 150 minutes x 3

WEEK : 3, 4 and 5

A. INSTRUCTIONAL AIM

1. GENERAL : After studying this course student are expected to have ability to explain kinds of annuity and also its relation with rate of interest, future value and present value of annuity

2. SPECIFIC : After studying this course student are expected to have ability to differentiate annuity certain, life annuity that is whole-life annuity, pure endowmen, temporary annuity and deferred annuity by annual payment and payment several times one year is same payment every period and unequal every period and also count future value and present value

B. SUBJECT : Annuity

C. SUB SUBJECT : Annuity Certain, Life Annuity and Increasing and Decreasing Life Annuity

D. TEACHING-LEARNING ACTIVITIES

STAGE	LECTURER ACTIVITIES	STUDENT ACTIVITIES	LEARNING MEDIA
INTRODUCTION	▪ Giving quiz ▪ Describing about matter at the third, fourth and fifth meeting ▪ Explaining purpose certain annuity, life annuity and varying annuity	Active do Observing	Paper OHP, transparency
PRESENTATION	▪ Explaining difference of annuity certain with annual payment and payment several	Observing, asking, taking notes	OHP, transparency, white board

	times one year and also the way of counting future value and present value		
	▪ Explaining difference of whole-life annuity, pure endowmen, temporary annuity and deferred annuity by annual payment and payment several times one year is same payment every period and unequal every period and also count future value and present value	Observing, asking, taking notes	White board
	▪ Giving examples	Observing, asking, taking notes	White board
	▪ Giving similar practice and show student to finish	Active do	Paper
CLOSING	▪ Giving comment of work of student	Discuss	White board
	▪ Giving problems	Taking notes	Paper
	▪ Giving description about matter on the next meeting	Observing	

E. ASSESSMENT : Giving problems to the students

F. REFERENCE : Larson, RE and Gaumnitz, EA, 1962. *Life Actuaria Mathematics*. John Wiley and Sons, New York

Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* I. Penerbit Karunika Jakarta Universitas Terbuka

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LEARNING UNIT PROGRAM

COURSE TITLE : Actuaria

CODE / CREDIT : PAM 418 / 3 SKS

DURATION : 150 minutes x 2

WEEK : 6 and 7

A. INSTRUCTIONAL AIM

1. GENERAL : After studying this course student are expected to have ability to explain kind of life Actuaria and can to count its premium

2. SPECIFIC : After studying this course student are expected to have ability to differentiate whole-life Actuaria, temporary Actuaria, endowmen and deferred Actuaria and also to count single net premium, annual premium and premium paid several times one year with decent payment level off and change.

B. SUBJECT : Life Actuaria

C. SUB SUBJECT : Life Actuaria, Increasing and Decreasing Life Actuaria and Net Annual Premiums and Payable Fractionally Premiums

D. TEACHING-LEARNING ACTIVITIES

STAGE	LECTURER ACTIVITIES	STUDENT ACTIVITIES	LEARNING MEDIA
INTRODUCTION	▪ Giving quiz ▪ Describing about matter at the sixth and seventh meeting ▪ Explaining insuffiency and excellence payment of single net premium, annual premium and premium paid several times one year with decent payment level off and decent change	Active do Observing	Paper OHP, transparency

PRESENTATION	▪ Explaining difference of whole-life Actuaria, temporary Actuaria, endowmen and deferred Actuaria and also count single net premium, annual premium and payment of premium paid several times one year the each the Actuaria with decent payment level off and decent change ▪ Giving examples ▪ Giving similar practice and show student to finish	Observing, asking, taking notes Observing, asking, taking notes Active do	OHP, transparency, white board White board Paper
CLOSING	▪ Giving comment of work of student ▪ Giving problems ▪ Giving task ▪ Giving description about matter to be tested at midterm	Discuss Taking notes Taking notes Observing	White board Paper

E. ASSESSMENT : Giving problems to the students

F. REFERENCE : Larson, RE and Gaumnitz, EA, 1962. *Life Actuaria Mathematics*. John Wiley and Sons, New York

Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* I. Penerbit Karunika Jakarta Universitas Terbuka

Suparti, Sunarsih, Dwi Ispriyanti, Yuciana, Di Asih I Maruddani, 2004. *Buku Ajar Asuransi*. Jurusan Matematika FMIPA UNDIP Semarang

LEARNING UNIT PROGRAM

COURSE TITLE : Actuaria

CODE / CREDIT : PAM 418 / 3 SKS

DURATION : 150 minutes x 3

WEEK : 9, 11 and 12

A. INSTRUCTIONAL AIM

1. GENERAL : After studying this course student are expected to have ability to explain meaning, target of and calculation of reserve to kinds of reserve Actuaria

2. SPECIFIC : After studying this course student are expected to have ability to count reserve premium by formula retrospektif, prospektif and Fackler for kinds of Actuaria and also can differentiate and count kinds of reserve adapted by Canadian method, Illinois, New Jersey and of Zilmer.

B. SUBJECT : Reserve Actuaria

C. SUB SUBJECT : Net Level Premium Reserves, Modified Reserves and Some Method to Count Premium Reserve

D. TEACHING-LEARNING ACTIVITIES

STAGE	LECTURER ACTIVITIES	STUDENT ACTIVITIES	LEARNING MEDIA
INTRODUCTION	▪ Describing about matter at the 9, 11 and 12 meeting ▪ Explaining purpose reserve Actuaria	Observing	OHP, transparency
PRESENTATION	▪ Explaining the way of counting reserve premium by using formula restropektif, prospektif and Fackler	Observing, asking, taking notes	OHP, transparency, white board
	▪ Explaining difference of modified reserve and way of counting with Canadian	Observing, asking, taking notes	White board

	method, Illinois, New Jersey and of Zilmer ▪ Giving examples ▪ Giving similar practice and show student to finish	 Observing, asking, taking notes Active do	 White board Paper
CLOSING	▪ Giving comment of work of student ▪ Giving problems ▪ Giving description about matter on the next meeting	Discuss Taking notes Observing	White board Paper

E. ASSESSMENT : Giving problems to the students

F. REFERENCE : Larson, RE and Gaumnitz, EA, 1962. *Life Actuaria Mathematics*. John Wiley and Sons, New York

Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* II. Penerbit Karunika Jakarta Universitas Terbuka

Suparti, Sunarsih, Dwi Ispriyanti, Yuciana Wilandari dan Di Asih I Maruddani, 2004. *Buku Ajar Asuransi*. Jurusan Matematika FMIPA UNDIP Semarang

LEARNING UNIT PROGRAM

COURSE TITLE : Actuaria

CODE / CREDIT : PAM 418 / 3 SKS

DURATION : 150 minutes

WEEK : 10

A. INSTRUCTIONAL AIM

1. GENERAL : After studying this course of Actuaria, the student expected to be able to know and explain problems of Actuaria, especially kinds of life Actuaria, and also to count net premium and gross premium, benefit for heir and also Actuaria reserve by using Microsoft Excel

2. SPECIFIC : After studying this lab work student are expected to have ability to count future value and present value of annuity by using Microsoft Excel

B. SUBJECT : Lab Work Annuity

C. SUB SUBJECT : Lab Work Annuity

D. TEACHING-LEARNING ACTIVITIES

STAGE	LECTURER ACTIVITIES	STUDENT ACTIVITIES	LEARNING MEDIA
INTRODUCTION	▪ Describing about matter at the 10 meeting	Observing	OHP, transparency
PRESENTATION	▪ Explaining using Microsoft Excel to count annuity	Observing, asking, taking notes	Computer
	▪ Giving examples	Observing, asking	Computer
	▪ Giving similar practice	Active do	Computer
CLOSING	▪ Giving task ▪ Giving description about matter on the next meeting	Taking notes Observing	Paper

E. ASSESSMENT : Giving problems to the students

F. REFERENCE : Larson, RE and Gaumnitz, EA, 1962. *Life Actuaria Mathematics*. John Wiley and Sons, New York

Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* I. Penerbit Karunika Jakarta Universitas Terbuka

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Sunarsih dan Yuciana Wilandari, 2007. *Modul Praktikum Asuransi*. Program Studi Statistika, Jurusan Matematika FMIPA UNDIP Semarang

LEARNING UNIT PROGRAM

COURSE TITLE : Actuaria

CODE / CREDIT : PAM 418 / 3 SKS

DURATION : 150 minutes

WEEK : 13

A. INSTRUCTIONAL AIM

1. GENERAL : After studying this course of Actuaria, the student expected to be able to know and explain problems of Actuaria, especially kinds of life Actuaria, and also to count net premium and gross premium, benefit for heir and also Actuaria reserve by using Microsoft Excel

2. SPECIFIC : After studying this lab work student are expected to have ability to count single net premium, annual premium and premium paid several times one year by using Microsoft Excel

B. SUBJECT : Lab Work Life Actuaria

C. SUB SUBJECT : Lab Work Life Actuaria

D. TEACHING-LEARNING ACTIVITIES

STAGE	LECTURER ACTIVITIES	STUDENT ACTIVITIES	LEARNING MEDIA
INTRODUCTION	▪ Describing about matter at the 13 meeting	Observing	OHP, transparency
PRESENTATION	▪ Explaining using Microsoft Excel to count net premium and benefit kinds of Actuaria ▪ Giving examples ▪ Giving similar practice	Observing, asking, taking notes Observing, asking Active do	Computer Computer Computer
CLOSING	▪ Giving task ▪ Giving description about matter on the next meeting	Taking notes Observing	Paper

E. ASSESSMENT : Giving problems to the students

F. REFERENCE : Larson, RE and Gaumnitz, EA, 1962. *Life Actuaria Mathematics*. John Wiley and Sons, New York

Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* I. Penerbit Karunika Jakarta Universitas Terbuka

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Sunarsih dan Yuciana Wilandari, 2007. *Modul Praktikum Asuransi*. Program Studi Statistika, Jurusan Matematika FMIPA UNDIP Semarang

LEARNING UNIT PROGRAM

COURSE TITLE : Actuaria

CODE / CREDIT : PAM 418 / 3 SKS

DURATION : 150 minutes

WEEK : 14

A. INSTRUCTIONAL AIM

1. GENERAL : After studying this course student are expected to have ability to explain definition of surrender value and method of determining gross premium

2. SPECIFIC : After studying this course student are expected to have ability to count surrender value and also other choice in the place of cash if happened disconnection of policy contract and can to count gross premium an Actuaria policy if its elements is determined

B. SUBJECT : Value Surrender and Gross Premium

C. SUB SUBJECT : Value Surrender and Gross Premium

D. TEACHING-LEARNING ACTIVITIES

STAGE	LECTURER ACTIVITIES	STUDENT ACTIVITIES	LEARNING MEDIA
INTRODUCTION	▪ Giving quiz ▪ Describing about matter at the 14 meeting ▪ Explaining purpose surrender value	Active do Observing	Paper OHP, transparency
PRESENTATION	▪ Explaining the way of counting value surrender and other choice in the place of cash if happened disconnection of policy contract and way of counting gross premium an Actuaria	Observing, asking, taking notes	OHP, transparency, white board

	policy ▪ Giving examples ▪ Giving similar practice and show student to finish	 Observing, asking, taking notes Active do	 White board Paper
CLOSING	▪ Giving comment of work of student ▪ Giving problems ▪ Giving task ▪ Giving description about matter to be tested at final exam	Discuss Taking notes Taking notes Observing	White board Paper

E. ASSESSMENT : Giving problems to the students

F. REFERENCE : Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* II. Penerbit Karunika Jakarta Universitas Terbuka

LEARNING UNIT PROGRAM

COURSE TITLE : Actuaria

CODE / CREDIT : PAM 418 / 3 SKS

DURATION : 150 minutes

WEEK : 15

A. INSTRUCTIONAL AIM

1. GENERAL : After studying this course of Actuaria, the student expected to be able to know and explain problems of Actuaria, especially kinds of life Actuaria, and also to count net premium and gross premium, benefit for heir and also Actuaria reserve by using Microsoft Excel

2. SPECIFIC : After studying this lab work student are expected to have ability to count premium reverses kinds of Actuaria by using Microsoft Excel

B. SUBJECT : Lab Work Premium Reverses

C. SUB SUBJECT : Lab Work Premium Reverses

D. TEACHING-LEARNING ACTIVITIES

STAGE	LECTURER ACTIVITIES	STUDENT ACTIVITIES	LEARNING MEDIA
INTRODUCTION	▪ Describing about matter at the 15 meeting	Observing	OHP, transparency
PRESENTATION	▪ Explaining using Microsoft Excel to count premium reverses	Observing, asking, taking notes	Computer
	▪ Giving examples	Observing, asking	Computer
	▪ Giving similar practice	Active do	Computer
CLOSING	▪ Giving task	Taking notes	Paper

E. ASSESSMENT : Giving problems to the students

F. REFERENCE : Larson, RE and Gaumnitz, EA, 1962. *Life Actuaria Mathematics*. John Wiley and Sons, New York

Sembiring, 1986. *Buku Materi Pokok Asuransi* I, *modul* II. Penerbit Karunika Jakarta Universitas Terbuka

Sunarsih, Dwi Ispriyanti, Yuciana Wilandari dan Di Asih I Maruddani, 2004. *Buku Ajar Asuransi*. Jurusan Matematika FMIPA UNDIP Semarang

Sunarsih dan Yuciana Wilandari, 2007. *Modul Praktikum Asuransi*. Program Studi Statistika, Jurusan Matematika FMIPA UNDIP Semarang