LESSON PLAN 1 st

1. Faculty/ Study Program : FMIPA/ Chemistry
2. Course & Code : Organic Chemistry 2;KI
3. Credit : 3 sks
4. Semester and time : IV, time : 2 x 50 menit
5. Basic competence : Students are able to use and apply a concept of classify organic compounds, basic mechanism in organic
6. Indicator : Students are able to use and apply a concept of classify organic compounds for identify physical and chemical properties
   Student are able to explain some basic mechanism in organic
7. Essential Concepts : Explains a concept of classify organic compounds and basic mechanism in organic

8. Activity

Component	**Detail Activity**	**Time**	**Method**	**Media**	**Referensi**
Opening	Lecturer explains the objective of the course and motivates students related to topic	10	Explanation Discussion, team work	Power poin, Computer, LCD	A.1; 2 B. 1;2
Main Activities	Lecturer explains the introduction of a concept of classify organic compounds and basic mechanism in organic Lecturer explain the usage of a concept of classify organic compounds and basic mechanism in organic Students do the same thing in their class and discuss in a group for exercise some problems Lecturer facilitates the students to get further information about some features in the library	70			
Closure	Student and lecturer concludes todays topic	10			
Follow up	Lecturer gives assignment	10			

9. Assessment:

1. Draw the structure of a single bond, a double bond, and a triple bond
2. Predict the hybridization and geometry of the atoms in a molecule.
3. Identify the classes of organic compounds containing funtional groups, and draw structural formulas for examples.
4. Explain some mechanism reaction of organic compound : free radical; addition; substitution
5. Describe the structures of carbocations, carbanions, free radicals, and carbenes, and the structural features tha stabilize them. Explain which are electrophilic and which are nucleophilic.

10. Assignment

Please answer the problem in the textbook : J.L Wade, jR, page 171-173.

11. **REFERENCES**

A. Compulsory :

1. Handout Kimia Organik 2
2. R.J. Fessenden & J.S. Fessenden, (Terjemahan A. Hadyana Pudjaatmadja, Kimia Organik 2, Yogyakarta : Penerbit Erlangga

B. Additional

1. N. L. Allinger, Organic Chemistry, California: Brooks/Cole Pub. Com
2. L.G. Wade J.R. Organic Chemistry, ed 4, Prentice Hall international INC

Yogyakarta, Agst, 23, 2011

Lecturer

Prof.Dr. Sri Atun

LESSON PLAN 2nd

1. Faculty/ Study Program : FMIPA/ Chemistry
2. Course & Code : Organic Chemistry 2;
3. Credit : 3 sks
4. Semester and time : IV, time : 2 x 50 menit
5. Basic competence : Students are able to use and apply a concept, structure, nomenclature , physical properties, and reaction of carbonyl compounds (aldehydes and ketones)
6. Indicator : a. Students are able to use and apply a concept, structure, nomenclature , physical properties for identify aldehydes and ketones
   b. Students are able to explain some reaction of carbonyl compounds
7. Essential Concepts : Explains a concept of structure, physical properties, and reaction of carbonyl compounds (aldehydes and ketones)
8. Activity

Component	**Detail Activity**	**Time**	**Method**	**Media**	**Referensi**
Opening	Lecturer explains the objective of the course and motivates students related to topic	10	Explanation Discussion, team work	Power poin, Computer, LCD	A.1; 2 B. 1;2
Main Activities	Lecturer explains the introduction of a concept structure, nomenclature; physical properties, and reaction of carbonyl compounds (aldehydes and ketones) Lecturer explain some reaction of aldehydes and ketones Students do the same thing in their class and discuss in a group for exercise some problems	80			
Closure	Student and lecturer concludes todays topic	5’			
Follow up	Lecturer gives assignment	5’			

9. Assessment:

1. Give the IUPAC name for each compounds :

    1) $(CH_3)_2CHCH_2CH{=}O$
    2) $CH_3CH{=}CH{-}CH{=}O$
    3) $(CH_3)_2CHCH_2COCH_3$
    4) $CH_2BrCOCH_3$

2. Write structure for each compounds :
    1) pentanal
    2) 2-pentanon
    3) *p*-bromobenzaldehida
    4) *t*-butil metal keton
    5) 2-oktanon
    6) benzyl fenil keton
    7) 3-metilsikloheksanon
3. Write reaction sequences that explain these transformations:
    1) sikloheksanon + NaCΞCH
    2) siklopentanon + HCN
    3) 2-butanon + $NH_2OH/\ H^+$
    4) p-tolualdehid + benzilamin
    5) propanal + fenilhidrazin

10. Assignment

Please answer the problem in the textbook : J.L Wade, jR, page 837-838

11. **REFERENCES**

A. Compulsory :

1. Handout Kimia Organik 2
2. R.J. Fessenden & J.S. Fessenden, (Terjemahan A. Hadyana Pudjaatmadja, Kimia Organik 2, Yogyakarta : Penerbit Erlangga

B. Additional

1. N. L. Allinger, Organic Chemistry, California: Brooks/Cole Pub. Com
2. L.G. Wade J.R. Organic Chemistry, ed 4, Prentice Hall international INC

Yogyakarta, Agst, 23, 2011

Lecturer

Prof.Dr. Sri Atun

LESSON PLAN 3th

1. Faculty/ Study Program : FMIPA/ Chemistry
2. Course & Code : Organic Chemistry 2;
3. Credit : 3 sks
4. Semester and time : IV, time : 2 x 50 menit
5. Basic competence : Students are able to use and apply a concept, structure, nomenclature , physical properties, and reaction of carbonyl compounds aldehydes and ketones)
6. Indicator : a. Students are able to use and apply a concept for synthesis aldehydes and ketones
   b. Students are able to explain some reaction of carbonyl compounds with amonia
7. Essential Concepts : Explains a concept of structure, physical properties, and reaction of carbonyl compounds (aldehydes and ketones)
8. Activity

Component	**Detail Activity**	**Time**	**Method**	**Media**	**Referensi**
Opening	Lecturer explains the objective of the course and motivates students related to topic	10	Explanation Discussion, team work	Power poin, Computer, LCD	A.1; 2 B. 1;2
Main Activities	Lecturer explains the introduction of a concept synthesis aldehydes and ketones Lecturer explain some reaction of carbonyl compounds with amonia Students do the same thing in their class and discuss in a group for exercise some problems	80			
Closure	Student and lecturer concludes todays topic	5’			
Follow up	Lecturer gives assignment	5’			

9. Assessment:
   1. Show how the following transformations may be accomplished in good yield. You may use any additional reagents that are needed :
      1) bromobenzene →propiophenon
      2) pentanoic acid → 3-heptanon

3) toluene → benzyl cyclopentyl ketone
4) CH_3CH_2CN → 3-heptanone

2. Depending on the reaction conditions, two different imines of formula C_8H_9N might be formed by the reaction of benzaldehyde with methylamine. Explain and give the structure of the two imines.

10. Assignment
Please answer the problem in the textbook : J.L Wade, jR, problem 18-25 page 821

11. **REFERENCES**

A. Compulsory :

1. Handout Kimia Organik 2
2. R.J. Fessenden & J.S. Fessenden, (Terjemahan A. Hadyana Pudjaatmadja, Kimia Organik 2, Yogyakarta : Penerbit Erlangga

B. Additional

1. N. L. Allinger, Organic Chemistry, California: Brooks/Cole Pub. Com
2. L.G. Wade J.R. Organic Chemistry, ed 4, Prentice Hall international INC

Yogyakarta, Agst, 23, 2011

Lecturer

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LESSON PLAN 4th

1. Faculty/ Study Program : FMIPA/ Chemistry
2. Course & Code : Organic Chemistry 2;
3. Credit : 3 sks
4. Semester and time : IV, time : 2 x 50 menit
5. Basic competence : Students are able to use and apply a concept, structure, nomenclature , physical properties, and reaction of carbonyl compounds aldehydes and ketones)
6. Indicator : a. Students are able to use and apply a concept for synthesis aldehydes and ketones
   b. Students are able to explain some reaction of carbonyl compounds with amonia
7. Essential Concepts : Explains a concept of structure, physical properties, and reaction of carbonyl compounds (aldehydes and ketones)
8. Activity

Component	**Detail Activity**	**Time**	**Method**	**Media**	**Referensi**
Opening	Lecturer explains the objective of the course and motivates students related to topic	10	Explanation Discussion, team work	Power poin, Computer, LCD	A.1; 2 B. 1;2
Main Activities	Lecturer explains the introduction of a concept synthesis aldehydes and ketones Lecturer explain some reaction of carbonyl compounds with amonia Students do the same thing in their class and discuss in a group for exercise some problems	80			
Closure	Student and lecturer concludes todays topic	5’			
Follow up	Lecturer gives assignment	5’			

9. Assessment:
   1. Show how the following reaction of :
      1) propanon + amonia
      2) pentanal + amonia

2. Explains mechanism reaction of oxidation alcohol primer, secunder, and tersier with $KMnO_4/H_2SO_4$

10. Assignment
    Please answer the problem in the textbook : J.L Wade, jR, problem 18-25 page 823

11. **REFERENCES**
    A. Compulsory :

    1. Handout Kimia Organik 2
    2. R.J. Fessenden & J.S. Fessenden, (Terjemahan A. Hadyana Pudjaatmadja, Kimia Organik 2, Yogyakarta : Penerbit Erlangga

    B. Additional

    1. N. L. Allinger, Organic Chemistry, California: Brooks/Cole Pub. Com
    2. L.G. Wade J.R. Organic Chemistry, ed 4, Prentice Hall international INC

Yogyakarta, Agst, 23, 2011

Lecturer

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LESSON PLAN 5th

1. Faculty/ Study Program : FMIPA/ Chemistry
2. Course & Code : Organic Chemistry 2;
3. Credit : 3 sks
4. Semester and time : IV, time : 2 x 50 menit
5. Basic competence : Students are able to use and apply a concept, structure, nomenclature , physical properties, and reaction of carbonyl compounds aldehydes and ketones)
6. Indicator : a. Students are able to use and apply a concept for aldol condensation
   b. Students are able to explain some reaction of aldol condensation

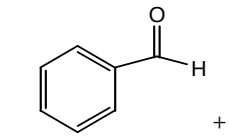
7.Essential Concepts : Explains a concept of aldol condensations

8. Activity

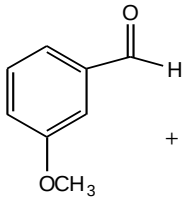
Component	**Detail Activity**	**Time**	**Method**	**Media**	**Referensi**
Opening	Lecturer explains the objective of the course and motivates students related to topic	10	Explanation Discussion, team work	Power poin, Computer, LCD	A.1; 2 B. 1;2
Main Activities	Lecturer explains the introduction of a concept aldol condensation Lecturer explain some reaction of aldol condensation Students do the same thing in their class and discuss in a group for exercise some problems	80			
Closure	Student and lecturer concludes todays topic	5’			
Follow up	Lecturer gives assignment	5’			

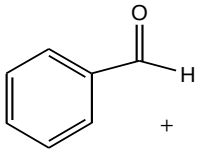
9. Assessment:

1. Please write the aldol condensation reaction in below:

1  + CH_3COCH_3 $\xrightarrow{NaOH}$

2 CH_3COH + CH_3COCH_3 $\xrightarrow{NaOH}$

3  + CH_3COCH_3 $\xrightarrow{HCl}$

4  + CH_3COCH_3 + CH_3COH $\xrightarrow{NaOH}$

10. Assignment

Please you explains mechanism of Claisen condensation

11. **REFERENCES**

A. Compulsory :

1. Handout Kimia Organik 2
2. R.J. Fessenden & J.S. Fessenden, (Terjemahan A. Hadyana Pudjaatmadja, Kimia Organik 2, Yogyakarta : Penerbit Erlangga

B. Additional

1. N. L. Allinger, Organic Chemistry, California: Brooks/Cole Pub. Com
2. L.G. Wade J.R. Organic Chemistry, ed 4, Prentice Hall international INC

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