SATUAN ACARA PERKULIAHAAN (SAP)
PROGRAM STUDI TEKNIK GEOLOGI
FAKULTAS TEKNIK

MIKROPALEONTOLOGI

UNIVERSITAS DIPONEGORO
SEMARANG
LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPALEONTOLOGY
CODE NUMBER/SKS : TKG 130P/2, IN LABORATORY : 1 SKS
TIME : 2 X 50 minutes
COURSE : 12

A. PURPOSE

1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
After accomplish this lecture, students could explain about micropaleontology the scopes of micropaleontology geologic and the use of micropaleontology in the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
Students could explain the bathymetry and paleoecology from the benthic foraminifera.

B. BASIC STUDY : The Bathymetry and Paleocoeology of Benthic Foraminifera

C. SUB BASIC STUDY :
- Biostratigraphy of benthic foraminifera
- The determination of paleoecology from benthic foraminifera

D. CLASS ACTIVITY

<table>
<thead>
<tr>
<th>Phase</th>
<th>Study Activity</th>
<th>Student Activity</th>
<th>Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1. Explaining the biostratigraphy of benthic foraminifera in general</td>
<td>• Observing</td>
<td>OHP</td>
</tr>
<tr>
<td></td>
<td>2. Explaining the competence of GIP and PIP</td>
<td>• Giving questions</td>
<td>LCD</td>
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<td>White board</td>
</tr>
<tr>
<td>Presentation</td>
<td>Explaining :</td>
<td>• Observing</td>
<td>OHP</td>
</tr>
<tr>
<td></td>
<td>• Bathymetry zone of Bandy (1967)</td>
<td>• Asking and answering, discussions</td>
<td>LCD</td>
</tr>
<tr>
<td></td>
<td>• Determination of bathymetry and paleoecology from benthic foraminifera.</td>
<td></td>
<td>White board</td>
</tr>
<tr>
<td>Closing</td>
<td>1. Resume lecture material</td>
<td>• Observing</td>
<td>OHP</td>
</tr>
<tr>
<td></td>
<td>2. Post test</td>
<td>• Asking and answering</td>
<td>LCD</td>
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<tr>
<td></td>
<td>3. Giving general description of next lecture</td>
<td></td>
<td>White board</td>
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</tbody>
</table>
E. EVALUATION

Giving question directly to individual or in post test format

F. REFERENSI

LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPALOEONTOLOGY
CODE NUMBER/SKS : TKG 130P/2, IN LABORATORY : 1 SKS
TIME : 2 X 50 minutes
COURSE : 11

A. PURPOSE

1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   After accomplish this lecture, students could explain about micropaleontology the scopes of micropaleontology geological and the use of micropaleontology in the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
   Students could explain the biostratigraphy of planktonic foraminifera and determinate the age of lithology from planktonic foraminifera.

B. BASIC STUDY : The Biostratigraphy of Planctonic Foraminifera

C. SUB BASIC STUDY :

   - Biozonation of planktonic foraminifera
   - The determation of geological age from planktonic foraminifera

D. CLASS ACTIVITY

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<thead>
<tr>
<th>Phase</th>
<th>Study Activity</th>
<th>Student Activity</th>
<th>Media</th>
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</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1. Explaining the biostratigraphy of planktonic foraminifera in general</td>
<td>• Observing</td>
<td>OHP, LCD, White board</td>
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<td></td>
<td>2. Explaining the competence of GIP and PIP</td>
<td>• Giving questions</td>
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<tr>
<td>Presentation</td>
<td>Explaining :</td>
<td>• Observing</td>
<td>OHP, LCD, White board</td>
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<tr>
<td></td>
<td>• Biozonation of Blow (1969)</td>
<td>• Asking and answering, discussions</td>
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<td>• Biozonation of Postuma (1971)</td>
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<td>• Biozonation of Bolli &amp; Saunders (1985)</td>
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<td>• Determination of geological age from each biozonations.</td>
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<tr>
<td>Closing</td>
<td>1. Resume lecture material</td>
<td>• Observing</td>
<td>OHP, LCD, White board</td>
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<tr>
<td></td>
<td>2. Post test</td>
<td>• Asking and answering</td>
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<td>3. Giving general description of next lecture</td>
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</table>
F. REFERENSI

LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPALeONTOLOGY
CODE NUMBER/SKS : TKG 130P/ 2, IN LABORATORY : 1 SKS
TIME : 2 X 50 minutes
COURSE : 10

A. PURPOSE

1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   - After accomplish this lecture, students could explain about micropaleontology the scoupes of micropaleontology and geological and the use of micropaleontology in the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
   - Students could explain the classifications of foraminifera.

B. BASIC STUDY : The Classification of Foraminifera

C. SUB BASIC STUDY :
   - The non-taxonomist classification of foraminifera

D. CLASS ACTIVITY

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<tr>
<th>Phase</th>
<th>Study Activity</th>
<th>Student Activity</th>
<th>Media</th>
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</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1. Explaining the classification of foraminifera test in general 2. Explaining the competence of GIP and PIP</td>
<td>Observing, Giving questions</td>
<td>OHP, LCD, White board</td>
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<tr>
<td>Presentation</td>
<td>Explaining : The non-taxonomist classification of foraminifera - Planctonic foraminifera - Benthic foraminifera</td>
<td>Observing, Asking and answering, discussions</td>
<td>OHP, LCD, White board</td>
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E. EVALUATION

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E. EVALUATION

Giving question directly to individual or in post test format

F. REFERENS!

LECTURE PROGRAM UNIT (LPU)

LECTURE: MICROPALEONTOLOGY
CODE NUMBER/SKS: TKG 130P/2, IN LABORATORY: 1 SKS
TIME: 2 X 50 minutes
COURSE: 9

A. PURPOSE
1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   After accomplishing this lecture, students should explain about micropaleontology
   the scope of micropaleontology geological and the use of micropaleontology in
   the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
   Students could explain the classifications of foraminifera.

B. BASIC STUDY: The Classification of Foraminifera

C. SUB BASIC STUDY:
   - The taxonomist classification of foraminifera

D. CLASS ACTIVITY

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<thead>
<tr>
<th>Phase</th>
<th>Study Activity</th>
<th>Student Activity</th>
<th>Media</th>
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</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1. Explaining the classification of foraminifera test in general</td>
<td>Observing</td>
<td>OHP</td>
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<td></td>
<td>2. Explaining the competence of GIP and PIP</td>
<td>Giving questions</td>
<td>LCD, White board</td>
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<tr>
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<td>Explanation:</td>
<td></td>
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<tr>
<td></td>
<td>- The taxonomist classification of foraminifera</td>
<td>Observing and answering, discussions</td>
<td>OHP</td>
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<tr>
<td></td>
<td>- Subordo Allogromina</td>
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<td>LCD, White board</td>
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<td>- Subordo Textularina</td>
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<td></td>
<td>- Subordo Miliolina</td>
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<td>- Subordo Fusulinina</td>
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<td>- Subordo Rotaliina</td>
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<tr>
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<td>1. Resume lecture material</td>
<td>Observing and answering</td>
<td>OHP</td>
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<td>2. Post test</td>
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<td>LCD</td>
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<td></td>
<td>3. Giving general description of next lecture</td>
<td>Asking and answering</td>
<td>White board</td>
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</table>
E. EVALUATION

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F. REFERENSI

LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPaleontology
CODE NUMBER/SKS : TKG 130P/ 2, IN LABORATORY: 1 SKS
TIME : 2 X 50 minutes
COURSE : 8

A. PURPOSE
1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   After accomplish this lecture, students could explain about micropaleontology the scoupes of micropaleontology geological and the use of micropaleontology in the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
   Students could explain the morphology of foraminifera test

B. BASIC STUDY : The Morphology of Foraminifera Test

C. SUB BASIC STUDY :
   - Septa and suture
   - Aperture
   - Ornament

D. CLASS ACTIVITY

<table>
<thead>
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<th>Phase</th>
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<th>Student Activity</th>
<th>Media</th>
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</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1. Explaining the morphology of foraminifera test in general</td>
<td>- Observing</td>
<td>OHP</td>
</tr>
<tr>
<td></td>
<td>2. Explaining the competence of GIP and PIP</td>
<td>- Giving questions</td>
<td>LCD</td>
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<td>White board</td>
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<tr>
<td>Presentation</td>
<td>Explaining :</td>
<td>- Observing</td>
<td>OHP</td>
</tr>
<tr>
<td></td>
<td>- The differences between septa and suture, the shape of suture.</td>
<td>- Asking and answering,</td>
<td>LCD</td>
</tr>
<tr>
<td></td>
<td>- The shape, position and amount of aperture</td>
<td>discussions</td>
<td>White board</td>
</tr>
<tr>
<td></td>
<td>- The ornament in foraminifera test (keel, punctate etc)</td>
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</tr>
<tr>
<td>Closing</td>
<td>1. Resume lecture material</td>
<td>- Observing</td>
<td>OHP</td>
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<td></td>
<td>2. Post test</td>
<td>- Asking and answering</td>
<td>LCD</td>
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<td>3. Giving general description of next lecture</td>
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<td>White board</td>
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E. EVALUATION

Giving question directly to individual or in post test format

F. REFERENCES

LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPALeONTOLOGY
CODE NUMBER/SKS : TKG 130P/ 2, IN LABORATORY : 1 SKS
TIME : 2 X 50 minutes
COURSE : 7

A. PURPOSE
1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   After accomplish this lecture, students could explain about micropaleontology
   the scoopes of micropaleonology geological and the use of micropaleontology in
   the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
   Students could recognize and describe the foraminifera test

B. BASIC STUDY : Introduction of Foraminifera Test

C. SUB BASIC STUDY :
   • The size of foraminifera test
   • The composition of foraminifera test
   • The shape and arrangement of foraminifera test

D. CLASS ACTIVITY

<table>
<thead>
<tr>
<th>Phase</th>
<th>Study Activity</th>
<th>Student Activity</th>
<th>Media</th>
</tr>
</thead>
</table>
| Introduction| 1. Explaining foraminifera test in geberal
              2. Explaining the competence of GIP and PIP | • Observing
                                                             • Giving questions | OHP
| Presentation| Explaining :
              • The size of Foraminifera
              • The composition of foraminifera test
              • The shape and arrangement of foraminifera test | • Observing
                                                             • Asking and answering, discussions | OHP
| Closing     | 1. Resume lecture material
              2. Post test
              3. Giving general description of next lecture | • Observing
                                                             • Asking and answering | OHP
E. EVALUATION

- Giving question directly to individual or in post test format

F. REFERENCES

LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPALEONTOLOGY
CODE NUMBER/SKS : TKG 130P/2, IN LABORATORY : 1 SKS
TIME : 2 X 50 minutes
COURSE : 6

A. PURPOSE
1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   After accomplish this lecture, students could explain about micropaleontology the scopes of micropaleontology and the use of micropaleontology in the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
   Students could explain about the life of foraminifera, anatomy and the functions of the organ of foraminifera.

B. BASIC STUDY : Foraminifera

C. SUB BASIC STUDY :
   - The life of foraminifera
   - The anatomy of foraminifera
   - The functions of the organ of foraminifera

D. CLASS ACTIVITY

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<tr>
<th>Phase</th>
<th>Study Activity</th>
<th>Student Activity</th>
<th>Media</th>
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</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1. Explaining foraminifera in general</td>
<td>• Observing • Giving questions</td>
<td>• OHP • LCD • White board</td>
</tr>
<tr>
<td></td>
<td>2. Explaining the competence of GIP and PIP</td>
<td></td>
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</tr>
<tr>
<td>Presentation</td>
<td>Explaining : • The life of Foraminifera • The anatomy of foraminifera • The functions of the organ of foraminifera</td>
<td>• Observing • Asking and answering, discussions</td>
<td>• OHP • LCD • White board</td>
</tr>
<tr>
<td>Closing</td>
<td>1. Resume lecture material</td>
<td>• Observing • Asking and answering</td>
<td>• OHP • LCD • White board</td>
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<td>2. Post test</td>
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<td>3. Giving general description of next lecture</td>
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F. REFERENCES

LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPALAEOLOGY
CODE NUMBER/SKS : TKG 130P/2, IN LABORATORY : 1 SKS
TIME : 2 X 50 minutes
COURSE : 5

A. PURPOSE
1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   After accomplish this lecture, students could explain about micropaleontology
   the scopes of micropaleontology geological and the use of micropaleontology in
   the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
   Students could explain about foraminifera, the taxonomy, the history of
   foraminifera research.

B. BASIC STUDY : Foraminifera

C. SUB BASIC STUDY :
   - General sight of foraminifera
   - The taxonomy of foraminifera
   - The history of foraminifera research

D. CLASS ACTIVITY

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<thead>
<tr>
<th>Phase</th>
<th>Study Activity</th>
<th>Student Activity</th>
<th>Media</th>
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</thead>
</table>
| Introduction | 1. Explaining foraminifera in general 
               2. Explaining the competence of GIP and PIP | • Observing 
                                                             • Giving questions | • OHP 
                                                             • LCD 
                                                             • White board |
| Presentation | Explaining : 
               • Foraminifera 
               • Taxonomy of foraminifera 
               • The history of foraminifera research | • Observing 
                                                             • Asking and answering, discussions | • OHP 
                                                             • LCD 
                                                             • White board |
| Closing     | 1. Resume lecture material 
               2. Post test 
               3. Giving general description of next lecture | • Observing 
                                                             • Asking and answering | • OHP 
                                                             • LCD 
                                                             • White board |

E. EVALUATION

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E. EVALUATION

Giving question directly to individual or in post test format

F. REFERENCES

LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPALEONTOLOGY
CODE NUMBER/SKS : TKG 130P/2, IN LABORATORY : 1 SKS
TIME : 2 X 50 minutes
COURSE : 4

A. PURPOSE
1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   After accomplish this lecture, students could explain about micropaleontology
   the scoups of micropaleontology-geological and the use of micropaleontology in
   the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
   Students could explain the microfossils of plant kingdom.

B. BASIC STUDY : Microfossils of Plant Kingdom

C. SUB BASIC STUDY :
   - Microfossils of plant kingdom
   - The various of plant kingdom
   - The characteristics of each plant kingdom
   - Paleoecology and biostratigraphy of plant kingdom

D. CLASS ACTIVITY

<table>
<thead>
<tr>
<th>Phase</th>
<th>Study Activity</th>
<th>Student Activity</th>
<th>Media</th>
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</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1. Explaining the microfossils of plant kingdom</td>
<td>• Observing</td>
<td>• OHP</td>
</tr>
<tr>
<td></td>
<td>2. Explaining the competence of GIP and PIP</td>
<td>• Giving questions</td>
<td>• LCD</td>
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<td>• White board</td>
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</tbody>
</table>
| Presentation | Explaining :

   - Microfossils of plant kingdom
   - The various of Microfossil of plant kingdom
   - The characteristics of each microfossil of plant kingdom
   - Paleoecology and biostratigraphy of microfossil of plant kingdom

|           |                                            | • Observing             | • OHP          |
|           |                                            | • Asking and answering, discussions | • LCD          |
|           |                                            |                         | • White board  |
| Closing   | 1. Resume lecture material                 | • Observing            | • OHP          |
|           | 2. Post test                               | • Asking                | • LCD          |
|           | 3. Giving general description of next lecture | • and answering        | • White board  |
E. EVALUATION
Giving question directly to individual or in post test format

F. REFERENCES

LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPALÉONTOLOGY
CODE NUMBER/SKS : TKG 130P/2, IN LABORATORY : 1 SKS
TIME : 2 X 50 minutes
COURSE : 3

A. PURPOSE
1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
After accomplish this lecture, students could explain about micropaléontology the scopes of micropalaeontology geologiocal and the use of micropalaeontology in the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
Students could explain the microfossils of incertae sedis.

B. BASIC STUDY : Microfossils of Incertae sedis

C. SUB BASIC STUDY :
- Microfossils of Incertae sedis
- The various of Incertae sedis
- The characteristics of each Incertae sedis
- Paleocology and biostratigraphy of Incertae sedis

D. CLASS ACTIVITY

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<tr>
<th>Phase</th>
<th>Study Activity</th>
<th>Student Activity</th>
<th>Media</th>
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<tbody>
<tr>
<td>Introduction</td>
<td>1. Explaining the microfossils of Incertae sedis</td>
<td>• Observing</td>
<td>OHP, LCD, White board</td>
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<tr>
<td></td>
<td>2. Explaining the competence of GIP and PIP</td>
<td>• Giving questions</td>
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<tr>
<td>Presentation</td>
<td>Explaining :</td>
<td>• Observing</td>
<td>OHP, LCD, White board</td>
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<tr>
<td></td>
<td>- Microfossils of Incertae sedis</td>
<td>• Asking and answering, discussions</td>
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<td></td>
<td>- The various of Microfossil of Incertae sedis</td>
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<td>- The characteristics of each microfossil of Incertae sedis</td>
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<tr>
<td></td>
<td>- Paleoecology and biostratigraphy of microfossil of Incertae sedis</td>
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<tr>
<td>Closing</td>
<td>1. Resume lecture material</td>
<td>• Observing</td>
<td>OHP, LCD, White board</td>
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<tr>
<td></td>
<td>2. Post test</td>
<td>• Asking and answering</td>
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<td></td>
<td>3. Giving general description of next lecture</td>
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E. EVALUATION
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F. REFERENCES

# LECTURE PROGRAM UNIT (LPU)

**LECTURE**
**CODE NUMBER/SKS**
**TIME**
**COURSE**

: MICROPALeONTOLOGY
: TKG 130P/2, IN LABORATORY: 1 SKS
: 2 X 50 minutes
: 2

A. PURPOSE

1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   After accomplish this lecture, students could explain about micropaleontology the scopes of micropaleontology-geological and the use of micropaleontology in the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)

B. BASIC STUDY: The various of Microfossil (Animals, Incertae sedis, Plants)

C. SUB BASIC STUDY:
   - Microfossils of Animal kingdom
   - The various of Microfossil of animal kingdom
   - The characteristics of each microfossil of animal kingdom
   - Paleoecology and biostratigraphy of microfossil of animal kingdom

D. CLASS ACTIVITY

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<th>Phase</th>
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<th>Student Activity</th>
<th>Media</th>
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</table>
| Introduction | 1. Explaining the various of microfossils  
2. Explaining the competence of GIP and PIP | • Observing  
• Giving questions | • OHP  
• LCD  
• White board |
| Presentation | Explaining:  
• Microfossils of Animal kingdom  
• The various of Microfossil of animal kingdom  
• The characteristics of each microfossil of animal kingdom  
• Paleoecology and biostratigraphy of microfossil of animal kingdom | • Observing  
• Asking and answering, discussions | • OHP  
• LCD  
• White board |
| Closing    | 1. Resume lecture material  
2. Post test  
3. Giving general description of next lecture | • Observing  
• Asking and answering | • OHP  
• LCD  
• White board |
| Closing | 1. Resume lecture material | • Observing and answering | • OHP  
| | 2. Post test | | • LCD  
| | 3. Giving general description of next lecture | | • White board |

E. EVALUATION
Giving question directly to individual or in post test format

F. REFERENCES

LECTURE PROGRAM UNIT (LPU)

LECTURE : MICROPALOEONTOLOGY
CODE NUMBER/SKS : TKG 130P/2, IN LABORATORY : 1 SKS
TIME : 2 X 50 minutes
COURSE : 1

A. PURPOSE
1. GENERAL INSTRUCTIONAL PURPOSE (GIP)
   After accomplish this lecture, students could explain about micropaleontology
   the scopes of micropaleontology geological and the use of micropaleontology in
   the geological field.

2. PARTICULAR INSTRUCTIONAL PURPOSE (PIP)
   Students could explain definition of micropaleontology, the presence of
   microfossil in rocks, the methods of rock contain microfossil sampling, the
   observation and determination of microfossil, and the application of microfossil in
   the geological field.

B. BASIC STUDY : Introduction

C. SUB BASIC STUDY :
   - Definition
   - The scopes of Micropaleontology
   - The presence of microfossils in rocks
   - The methods of rock contain microfossil sampling
   - The methods of sample preparation
   - The observation and determination of microfossil
   - The use of microfossil in geology

D. CLASS ACTIVITY

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