

SEMESTER LESSON PLAN



LESSON PLAN DEVELOPER(S):

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Lecturer in Advanced Fish Nutrition

Faculty of Fisheries and Marine Science, Universitas Brawijaya

**AQUACULTURE MASTER'S PROGRAM
FACULTY OF FISHERIES AND MARINE SCIENCE
UNIVERSITAS BRAWIJAYA
2021**

SEMESTER LESSON PLAN

1. Course Identity

| | |
|----------------------------|--|
| Study Program | : Aquaculture Master's Program |
| Course | : Advanced Fish Nutrition |
| Course Code | : PIB 8205 |
| Course Group | : Nutrition |
| Credit | : 3 |
| Degree | : Master's Degree |
| Semester | : 2 |
| Pre-requisite | : <i>(if any, write down the course code)</i> |
| Status | : Elective |
| Lecturers' names and codes | : Prof. Dr. Ir. Eddy Suprayitno, MS. Dr. Ir. Anik Martinah, M.Sc. Dr. Ir. Arning Wilujeng Ekawati, MS. |

2. Course Description

This course discusses various nutrients in feed, nutritional needs of fish, preparation of feed formulations, digestibility of fish and fish feed evaluation. Knowledge in this course is beneficial in the implementation of feed management in aquaculture. This course is necessary for students who are interested in the field of fish feed technology, development of fish nutrition fulfillment, and feed formulation for aquaculture fish.

3. Program Learning Outcomes (PLO)

1. Being able to develop the existing concept and propose new knowledge in the field of aquatic animal nutrition (CPL 7).

4. Course Learning Outcomes

After completing this course, students will be able to:

1. understand the knowledge in fish nutrition; amino acids, glycerol fat, types of saturated and unsaturated fats, fat metabolism, and nutritional needs.
2. formulate optimal fish feed technology, understand feed quality testing, feed evaluation, and differences between feed for farmed fish and terrestrial fish feed.
3. understand the principles of fish growth and feeding, bioenergetic models, potential bioenergetic growth, and fish digestibility.

5. Lesson Plan

| Week | PLO Indicator | Topics | Teaching Strategies | Time (hour) | Learning Activities | Assessment | Learning Sources |
|------|---|--|--|-------------|---|---|--|
| 1 | 1.1 Accuracy in explaining the functions and benefits of proper fish nutrition 1.2 Accuracy in explaining the functions and benefits of feed management in the field of aquaculture. | - Introduction to fish nutrition - Introduction to feed management in aquaculture. | • Lecture (S) | 2 | Note taking (A) Working on assignments (A) | Criteria: Scoring Guidelines Non-test: summarizing lecture materials (A) | 1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan 2) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i> , 437, 92-101. |
| 2 | 1.3 Accuracy in explaining fish nutrition and types of amino acids | - Types of nutrition for fish, types of amino acids including essential and non-essential amino acids. | • Lecture (S) • Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | Criteria: Scoring Guidelines Non-test: - summarizing lecture materials (A) | 1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan 2) Suprayitno, E., dan Sulistyawati, T. 2017. <i>Metabolisme Protein</i> . UB Press. Malang |

| Week | PLO Indicator | Topics | Teaching Strategies | Time (hour) | Learning Activities | Assessment | Learning Sources |
|------|--|--|--|-------------|---|---|--|
| | | | | | | - group or independent presentation(S) | 3) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i> , 437, 92-101. |
| 3 | 1.4 Accuracy in explaining fat glycerol, fat metabolism and fatty acid | - Glycerol fat, fat metabolism and fat loss, types of fatty acids | <ul style="list-style-type: none"> • Lecture (S) • Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A) - group or independent presentation(S)</p> | <ol style="list-style-type: none"> 1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan 2) Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. <i>Agriculture and Biology Journal of North America</i>, 2(6), 935-943. 3) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i>, 437, 92-101. |
| 4 | 1.5 Accuracy in explaining the nutritional needs of fish | - Determination and explanation of sources of fish nutritional needs | <ul style="list-style-type: none"> • quiz 1 (S) • Lecture (S) • Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A) - group or independent presentation(S)</p> | <ol style="list-style-type: none"> 1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan 2) Suprayitno, E., dan Sulistyawati, T. 2017. <i>Metabolisme Protein</i>. UB Press. Malang 3) Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. |

| Week | PLO Indicator | Topics | Teaching Strategies | Time (hour) | Learning Activities | Assessment | Learning Sources |
|------|---|--|--|-------------|---|---|--|
| | | | | | | | <p>(2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, <i>Oreochromis niloticus</i> (L.). <i>Journal of Applied Aquaculture</i>, 18(3), 17-36.</p> <p>4) Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. <i>Agriculture and Biology Journal of North America</i>, 2(6), 935-943.</p> |
| 5 | 2.1 Accuracy in explaining the systematic preparation of feed | <ul style="list-style-type: none"> - Analysis of the nutritional content of every feed ingredient - Feed formulation to fit nutritional needs of each type of fish | <ul style="list-style-type: none"> • Lecture (S) • Assignment (A) & Presentation (S) | 2 | <ul style="list-style-type: none"> Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A) - group or independent presentation(S)</p> | <ol style="list-style-type: none"> 1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan 2) Suprayitno, E., dan Sulistyawati, T. 2017. <i>Metabolisme Protein</i>. UB Press. Malang 3) Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. (2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, <i>Oreochromis niloticus</i> (L.). <i>Journal of</i> |

| Week | PLO Indicator | Topics | Teaching Strategies | Time (hour) | Learning Activities | Assessment | Learning Sources |
|------|--|--|---|-------------|---|---|---|
| | | | | | | | <p><i>Applied Aquaculture</i>, 18(3), 17-36.</p> <p>4) Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. <i>Agriculture and Biology Journal of North America</i>, 2(6), 935-943.</p> <p>5) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i>, 437, 92-101.</p> |
| 6 | 2.2 Accuracy in explaining feed quality testing and evaluation | - Methods in feed quality testing and evaluation | <ul style="list-style-type: none"> • Lecture (S) • Lecture (S) • Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A) - group or independent presentation(S)</p> | <p>1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan</p> <p>2) Suprayitno, E., dan Sulistyawati, T. 2017. <i>Metabolisme Protein</i>. UB Press. Malang</p> <p>3) Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. (2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, <i>Oreochromis niloticus</i> (L.). <i>Journal of</i></p> |

| Week | PLO Indicator | Topics | Teaching Strategies | Time (hour) | Learning Activities | Assessment | Learning Sources |
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| | | | | | | | <p><i>Applied Aquaculture</i>, 18(3), 17-36.</p> <p>4) Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. <i>Agriculture and Biology Journal of North America</i>, 2(6), 935-943.</p> <p>5) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i>, 437, 92-101.</p> |
| 7 | <p>2.3 Accuracy in explaining the difference between feed for farmed fish and terrestrial fish</p> <p>3.1 Accuracy in explaining the principles of fish feeding</p> | <ul style="list-style-type: none"> - Differences between the feed of farmed fish and terrestrial fish. - Principles of fish growth and feeding | <ul style="list-style-type: none"> • Lecture (S) • Assignment (A) & Presentation (S) | 2 | <p>Note taking (A)</p> <p>Working on assignments (A)</p> | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A) - group or independent presentation(S)</p> | <ol style="list-style-type: none"> 1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan 2) Suprayitno, E., dan Sulistyawati, T. 2017. <i>Metabolisme Protein</i>. UB Press. Malang 3) Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. (2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, <i>Oreochromis niloticus</i> (L.). <i>Journal of</i> |

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| | | | | | | | <p><i>Applied Aquaculture</i>, 18(3), 17-36.</p> <p>4) Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. <i>Agriculture and Biology Journal of North America</i>, 2(6), 935-943.</p> <p>5) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i>, 437, 92-101.</p> |
| 8 | MIDTERM EXAM | | | | | | |
| 9 | 3.2 Accuracy in explaining bioenergetics model | - Definition of bioenergetics and bioenergetics models | <ul style="list-style-type: none"> Lecture (S) Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A) - group or independent presentation(S)</p> | <p>1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan</p> <p>2) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i>, 437, 92-101.</p> |
| 10 | 3.3 Accuracy in explaining the potential growth of bioenergetics | - Functions of bioenergetics and potential growth of bioenergetics | <ul style="list-style-type: none"> Lecture (S) Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test:</p> | <p>1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan</p> <p>2) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G.</p> |

| Week | PLO Indicator | Topics | Teaching Strategies | Time (hour) | Learning Activities | Assessment | Learning Sources |
|------|--|---|--|-------------|---|--|--|
| | | | | | | <ul style="list-style-type: none"> - summarizing lecture materials (A) - group or independent presentation(S) | O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i> , 437, 92-101. |
| 11 | 3.4 Accuracy in describing the digestive system in fish and fish digestibility of feed | - Digestive system in fish, digestibility of certain types of fish towards fish feed. | <ul style="list-style-type: none"> • Lecture (S) • Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test:</p> <ul style="list-style-type: none"> - summarizing lecture materials (A) - group or independent presentation(S) | <ol style="list-style-type: none"> 1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan 2) Suprayitno, E., dan Sulistyawati, T. 2017. <i>Metabolisme Protein</i>. UB Press. Malang 3) Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. (2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, <i>Oreochromis niloticus</i> (L.). <i>Journal of Applied Aquaculture</i>, 18(3), 17-36. 4) Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. <i>Agriculture and Biology Journal of North America</i>, 2(6), 935-943. |

| Week | PLO Indicator | Topics | Teaching Strategies | Time (hour) | Learning Activities | Assessment | Learning Sources |
|------|--|--|--|-------------|---|---|---|
| | | | | | | | 5) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i> , 437, 92-101. |
| 12 | 3.5 Accuracy in explaining the fish feed management | - Fish feed management | <ul style="list-style-type: none"> • Lecture (S) • Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A) - group or independent presentation(S)</p> | <ol style="list-style-type: none"> 1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan 2) Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. (2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, <i>Oreochromis niloticus</i> (L.). <i>Journal of Applied Aquaculture</i>, 18(3), 17-36. 3) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i>, 437, 92-101. |
| 13 | Accuracy in explaining the materials delivered in previous meeting | - Discussion on the previous materials | <ul style="list-style-type: none"> • Lecture (S) • Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A)</p> | <ol style="list-style-type: none"> 1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan 2) Suprayitno, E., dan Sulistyawati, T. 2017. <i>Metabolisme Protein</i>. UB Press. Malang |

| Week | PLO Indicator | Topics | Teaching Strategies | Time (hour) | Learning Activities | Assessment | Learning Sources |
|------|--|--|--|-------------|---|--|--|
| | | | | | | - group or independent presentation(S) | <p>3) Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. (2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, <i>Oreochromis niloticus</i> (L.). <i>Journal of Applied Aquaculture</i>, 18(3), 17-36.</p> <p>4) Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. <i>Agriculture and Biology Journal of North America</i>, 2(6), 935-943.</p> <p>5) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i>, 437, 92-101.</p> |
| 14 | Accuracy in explaining the materials delivered in previous meeting | - Discussion on the previous materials | <ul style="list-style-type: none"> • Lecture (S) • Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A)</p> | <p>1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan</p> <p>2) Suprayitno, E., dan Sulistyawati, T. 2017. <i>Metabolisme Protein</i>. UB Press. Malang</p> |

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| | | | | | | - group or independent presentation(S) | <p>3) Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. (2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, <i>Oreochromis niloticus</i> (L.). <i>Journal of Applied Aquaculture</i>, 18(3), 17-36.</p> <p>4) Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. <i>Agriculture and Biology Journal of North America</i>, 2(6), 935-943.</p> <p>5) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i>, 437, 92-101.</p> |
| 15 | Accuracy in explaining the materials delivered in previous meeting | - Discussion on the previous materials | <ul style="list-style-type: none"> • Lecture (S) • Assignment (A) & Presentation (S) | 2 | Note taking (A) Working on assignments (A) | <p>Criteria: Scoring Guidelines</p> <p>Non-test: - summarizing lecture materials (A)</p> | <p>1) Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan</p> <p>2) Suprayitno, E., dan Sulistyawati, T. 2017. <i>Metabolisme Protein</i>. UB Press. Malang</p> |

| Week | PLO Indicator | Topics | Teaching Strategies | Time (hour) | Learning Activities | Assessment | Learning Sources |
|------|-------------------|--------|---------------------|-------------|---------------------|--|--|
| | | | | | | - group or independent presentation(S) | <p>3) Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. (2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, <i>Oreochromis niloticus</i> (L.). <i>Journal of Applied Aquaculture</i>, 18(3), 17-36.</p> <p>4) Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. <i>Agriculture and Biology Journal of North America</i>, 2(6), 935-943.</p> <p>5) El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. <i>Aquaculture</i>, 437, 92-101.</p> |
| 16 | FINAL EXAM | | | | | | |

Notes: S = Synchronous, A = Asynchronous, all soft skills achievement will be scored based on the analysis referring to the Learning Management System

6. References

- Tim Dosen Nutrisi Ikan Lanjutan, Buku Ajar Nutrisi ikan untuk budidaya perikanan
- Suprayitno, E., dan Sulistyawati, T. 2017. *Metabolisme Protein*. UB Press. Malang
- Abdel-Tawwab, M., Khattab, Y. A., Ahmad, M. H., and Shalaby, A. M. (2006). Compensatory growth, feed utilization, whole-body composition, and hematological changes in starved juvenile Nile Tilapia, *Oreochromis niloticus* (L.). *Journal of Applied Aquaculture*, 18(3), 17-36.
- Babalola, T. O. O., & Apata, D. F. (2011). Chemical and quality evaluation of some alternative lipid sources for aqua feed production. *Agriculture and Biology Journal of North America*, 2(6), 935-943.
- El-Sayed, A. F. M., Dickson, M. W., and El-Naggar, G. O. 2015. Value chain analysis of the aquaculture feed sector in Egypt. *Aquaculture*, 437, 92-101.

7. Appendices

Appendix 1. *Learning Materials*

- PPT 1 : Introduction
 - PPT 2 : The science of feed nutrition and feed management
 - PPT 3 : Nutrition and amino acids
 - PPT 4 : Fats and fatty acids
 - PPT 5 : The nutritional needs of fish
 - PPT 6 : Preparation of feed formulation
 - PPT 7 : Feed quality test and evaluation
 - PPT 8 : Midterm exam
 - PPT 9 : Feed for farmed fish and terrestrial fish
 - PPT 10 : Bioenergetics
 - PPT 11 : Potential growth of energetics
 - PPT 12 : Digestive system in fish and digestibility to feed
 - PPT 13 : Fish feed management
- Online learning resources: (URL/link)
and other learning resources: (URL/link)

Appendix 2. *Media*

Zoom Meeting: (URL/link)

Google Meet: (URL/link)

Appendix 3. *Assessment Instrument*

Scoring Rubric

Oral Presentation

| Close to the Expectation (score 1-2) | Meeting the Expectation (score 3-4) | Exceeding the Expectation (score 5) |
|--|---|--|
| <ol style="list-style-type: none"> 1) Presentation is not organized and not well developed 2) Material is not well-explained well 3) Theories and concepts are not thoroughly discussed 4) Presentation is not clear and not fluent 5) Lack of confidence in delivery, mostly note reading 6) Voice is unclear 7) Presentation does not attract audiences' attention 8) Inadequate responses to questions, inadequate comprehension of the material 9) Unsynchronized presentations 10) Exceeding the time limit, failing to complete the presentation | <ol style="list-style-type: none"> 1) Presentation is rather well -organized and developed 2) Fair comprehension of the material being delivered 3) Theories and concepts are fairly discussed thoroughly 4) Presentation is fairly clear and fluent 5) Showing fairly strong confidence and speakers read notes wisely 6) Voice is quite clear 7) Able to engage audience's attention 8) Fairly good in responding to questions, showing excellent comprehension of the material being presented 9) Good synchronization of presentation flow 10) Exceeding the time limit yet presenters managed to complete the presentation | <ol style="list-style-type: none"> 1) Presentation is very well organized and creatively developed 2) Very strong knowledge regarding the material being presented 3) Theories and concepts are very thoroughly-discussed 4) Presentation is very clear and smooth 5) Excellent confidence in delivery, reading notes very wisely 6) Voice is very clear 7) Adequately attracts audiences' attention well 8) Responding to questions very well, very strong comprehension of the material being delivered 9) Very clear synchronization in presentation flow 10) Not exceeding the time limit, presentation is completed |

Written Assignments

Essay

| Under the average (score 1 – 4) | Within the Average (score 5 – 8) | Above the Average (score 9 – 12) | Perfect (score 13 – 15) |
|--|---|---|--|
| <ol style="list-style-type: none"> 1) Not using the right analytical method 2) Incorrect data analysis 3) Making wrong conclusions 4) No critical analysis of the data available | <ol style="list-style-type: none"> 1) Using acceptable analytical methods 2) Data are well analyzed 3) Making relevant conclusions 4) There is a fairly critical analysis of the data 5) There are only one or two | <ol style="list-style-type: none"> 1) Using a relatively precise analysis method 2) Proper data analysis 3) Making the right conclusion 4) Critical analysis of the data is found | <ol style="list-style-type: none"> 1) Using the correct analytical method 2) Effective data analysis 3) Making strongly effective conclusions 4) There is a strong critical analysis of the data |

| | | | |
|--|---|--|--|
| <ul style="list-style-type: none"> 5) No references 6) Unmatched literature review (theory, research) and questions 7) Using non-standardized language and poor cohesion 8) No explanation about the implications of the topics being discussed 9) Essay is not systematically-structured | <ul style="list-style-type: none"> references yet irrelevant 6) Matching literature review (theory, research) and question 7) Using standard language with good cohesion between sentences 8) The implications of the topics being discussed are explained yet less thoroughly 9) Essay is not systematically-structured | <ul style="list-style-type: none"> 5) There are many references yet irrelevant at this point 6) Matching literature review (theory, research) and questions 7) Using standard language and sentences are cohesive 8) There is a unique and critical explanation of the implications of the topics being discussed 9) Essay is systematically-arranged | <ul style="list-style-type: none"> 5) There are many references with strong relevancy 6) Strongly matching literature review (theory, research) and questions 7) Using standard language with strong cohesion between sentences 8) There is a unique and very critical explanation of the implications of the topics being discussed 9) Essay is systematically and neatly arranged |
|--|---|--|--|

Report

| Under the average (score 1 – 4) | Within the Average (score 5 – 8) | Above the Average (score 9 – 12) | Perfect (score 13 – 15) |
|---|---|--|--|
| <ul style="list-style-type: none"> 1) Not using the right analytical method 2) Incorrect data analysis 3) Making wrong conclusions 4) No critical analysis of the data available 5) No references 6) Unmatched literature review (theory, research) and questions 7) Using non-standardized language and poor cohesion 8) No explanation about the implications of the topics being discussed 9) Report is not systematically-structured | <ul style="list-style-type: none"> 1) Using acceptable analytical methods 2) Data are well analyzed 3) Making relevant conclusions 4) There is a fairly critical analysis of the data 5) There are only one or two references yet irrelevant 6) Matching literature review (theory, research) and question 7) Using standard language with good cohesion between sentences 8) The implications of the topics being discussed are explained yet less thoroughly 9) Report is relatively not | <ul style="list-style-type: none"> 1) Using a relatively precise analysis method 2) Proper data analysis 3) Making the right conclusion 4) Critical analysis of the data is found 5) There are many references yet irrelevant at this point 6) Matching literature review (theory, research) and questions 7) Using standard language and sentences are cohesive 8) There is a unique and critical explanation of the implications of the topics being discussed | <ul style="list-style-type: none"> 1) Using the correct analytical method 2) Effective data analysis 3) Making strongly effective conclusions 4) There is a strong critical analysis of the data 5) There are many references with strong relevancy 6) Strongly matching literature review (theory, research) and questions 7) Using standard language with strong cohesion between sentences 8) There is a unique and very critical explanation of the implications of the topics being discussed |

| | | | |
|--|---------------------------|--------------------------------------|---|
| | systematically-structured | 9) Report is systematically-arranged | 9) Report is systematically and neatly arranged |
|--|---------------------------|--------------------------------------|---|