



**Course Module**  
**Department of Animal Science**  
**Faculty of Animal Science**  
**Universitas Brawijaya**

Module Name	Animal Products Handling
Module Level	Undergraduate Study Program of Animal Science
Code	PET61013
Subtitle	-
Courses	Animal Products Handling
Semester (s)	4
Person responsible for the module	Dr. Herly Evanuarini, S.Pt., MP.
Lecturer	<ol style="list-style-type: none"> <li>1. Dr. Ir. Imam Thohari, MP., IPM</li> <li>2. Prof. Dr. Ir. Lilik Eka Radiati, MS., IPU.</li> <li>3. Prof. Dr. Ir. Djalal Rosyidi, MS., IPU., ASEAN Eng.</li> <li>4. Dr. Khotibul Umam Al-Awwaly, S.Pt., M.Si.</li> <li>5. Dr. Agus Susilo, S.Pt., MP, IPM, ASEAN Eng.</li> <li>6. Dr. Ir. Purwadi, MS.</li> <li>7. Dr. Ir. Mustakim, MP., IPM.</li> <li>8. Dr. Ir. Manik Erry Sawitri, MP.</li> <li>9. Dr. Herly Evanuarini, S.Pt., MP.</li> <li>10. Dr. Abdul Manab, S.Pt, MP.</li> <li>11. Dr. Dedes Amertaningtyas, S.Pt, MP.</li> <li>12. Dr. Premy Puspitawati Rahayu, S.Pt, MP.</li> <li>13. Ria Dewi Andriani, S.Pt, M.Sc.</li> <li>14. Mulia Winirsya Apriliyani, S.Pt, MP.</li> </ol>
Language	Indonesian language and English
Relation to Curriculum	Study Program: Animal Science Specialization: Animal Science Type: Compulsory
Type of Teaching, Contact Hours	Lecture: 100 minutes/meeting Independent Study: 150 minutes/meeting
Workload	Course 90.67 hours/semester Practical 42.50 hours/semester Lecture: 14 meetings*100 minutes Independent Study: 16 meetings*150 minutes
Credit points	Course 2 credits or 3.40 ECTS Practical 1 credits or 1.70 ECTS
Requirements According to the Examination Regulations	Attendance > 80% Final Score > 44 The final score component: <ol style="list-style-type: none"> <li>1) Midterm Exam 25%</li> <li>2) Final Exam 25%</li> <li>3) Practicum 25%</li> <li>4) Assignments 15%</li> </ol>



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	<p>5) Quiz 5%</p> <p>6) Activeness 5%</p>
Recommended Prerequisite	Biochemistry, Microbiology, Introduction to Animal Product Technology
Module Objectives / Intended Learning Outcomes	<ul style="list-style-type: none"> <li>• Capability to develop knowledge and comprehensive mindset based on Animal science and industry (LO 4).</li> <li>• Actively contributing in the learning process and discussion (LO 10)</li> <li>• Demonstrating good capability to be independent and to work in team as to identify and analyse problems (LO 11)</li> </ul>
	<p>Objectives:</p> <p>The Handling of Animal Product course provides knowledge related to the identification and mechanism of the causes of damage to animal commodities to apply proper handling before further processing.</p>
	<p>Knowledge:</p>
	<p>Skills</p> <p>Cognitive  able to understand, identify the principles of handling in animal food product</p> <p>Phsycomotoric  able to identify the causes and mechanisms of spoilage in animal food product and also able to evaluate handling techniques for animal commodities</p>
	<p>Competences</p> <ol style="list-style-type: none"> <li>1. Able to identify the causes and mechanisms of spoilage to milk, meat, eggs, honey, and by-products</li> <li>2. Able to comprehend the principles of handling milk, meat, eggs, honey, and by-products starting from the reception, the handling process to the distribution.</li> <li>3. Able to implement appropriate handling following the characteristics of animal commodities.</li> <li>4. Able to evaluate handling techniques for animal commodities.</li> </ol>
Content	<p>Scope of teaching materials:</p> <ol style="list-style-type: none"> <li>1. Changes in quality and spoilage of milk</li> <li>2. Handling and Testing Milk Quality</li> <li>3. Milk Pre-Treatment</li> <li>4. Changes in quality and spoilage of meat</li> <li>5. Handling Post-Harvest Meat, Post-Mortem, and Meat Withering</li> <li>6. Meat Chilling and Freezing</li> </ol>



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	<ol style="list-style-type: none"> <li>7. Changes in quality and spoilage of eggs</li> <li>8. Handling Whole Eggs and Eggs without Shells and Determining Egg Quality</li> <li>9. Method of handling eggs</li> <li>10. Changes in quality and spoilage of honey, royal jelly, pollen, and propolis</li> <li>11. Handling honey, royal jelly, pollen, and propolis</li> <li>12. Changes in quality and skin deterioration</li> <li>13. Handling of skin</li> <li>14. Methods of skin handling</li> </ol>
<p>Study and Examination Requirements and Forms of Examination</p>	<ul style="list-style-type: none"> <li>- Examination requirements: A minimum attendance of 80% to take the Final Exam</li> <li>- The forms of the test: Multiple Choices/Essay/Group</li> </ul> <p>The final score component:</p> <ol style="list-style-type: none"> <li>1) Midterm Exam 25%</li> <li>2) Final Exam 25%</li> <li>3) Practicum 25%</li> <li>4) Assignments 15%</li> <li>5) Quiz 5%</li> <li>6) Activeness 5%</li> </ol> <p>A : 80 &lt; Final Score ≤ 100          B+ : 75 &lt; Final Score ≤ 80          B : 69 &lt; Final Score ≤ 75          C+ : 60 &lt; Final Score ≤ 69          C : 55 &lt; Final Score ≤ 60          D : 50 &lt; Final Score ≤ 55          D+ : 44 &lt; Final Score ≤ 50          E : 0 &lt; Final Score ≤ 44</p>
<p>Media Employed</p>	<p>Projector and screens, Zoom application, Google Classroom, e-book, WA Group</p>
<p>Reading List</p>	<ol style="list-style-type: none"> <li>1. Aberle, E.D., Forrest, J.C., Gerrard, D.E., and Mills, E.W. 2012. Principles of Meat Science. 5th Edition. Kendall Hunt Pub Co. San Fransisco.</li> <li>2. Anjarsari, B. 2010. Pangan Hewani Fisiologi Pasca Mortem dan Teknologi. Graha Ilmu. Yogyakarta.</li> <li>3. Anggara, D.F., D.S, Sutardjo., and K. Suradi. 2013. Pengaruh Penggunaan Jenis Asam pada Proses Pickle Terhadap Kualitas Kimia Kulit Kelinci Peranakan New Zealand White. Universitas Padjajaran. Bandung.</li> <li>4. Buckle, K.A., R.A. Edwards, G.H. Fleet and M. Wooton. 2010. Food Science. Watson Ferguson and Co. Brisbane.</li> </ol>



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	<p>Australia. Translated by: H. Purnomo and Adiono. UI Press, Jakarta.</p> <ol style="list-style-type: none"><li>5. Heinz, G., and Hautzinger, P. 2007. Meat Processing Technology for Small to Producers. RAP Publication. FAO. Bangkok.</li><li>6. Koswara, S. 2009. Teknologi Pengolahan Telur (Teori Dan Praktek). E-Bookpangan.com. 1-28.</li><li>7. Lawrie, R.A. 2003. Ilmu Daging. Edisi Kelima. Translated by Aminuddin Parakkasi and Yudha Amwila. Penerbit Universitas Indonesia. UI-Press. Jakarta</li><li>8. Pomeranz, Y., and C.E. Meloan. 1994. Food analysis: Theory and Practice. Chapman and Hall. New York.</li><li>9. Purnomo, H. 1996. Dasar-Dasar Pengolahan dan Pengawetan Daging. PT. Gramedia Widisarana Indonesia. Jakarta.</li><li>10. Purwadi, L.E., Radiati. H.Evanuarini., R.D., Andriani. 2017. Penanganan Hasil ternak. UB Press. Malang.</li><li>11. Seuss-Baum, I. 2007. Nutritional Evaluation of Egg Compounds. di dalam: Huopalathi R et al., editor. Bioactive egg compounds. Springer. Heidelberg.</li><li>12. Soeparno. 2005. Ilmu dan Teknologi Daging. Revisi Cetakan Keempat. Gadjah Mada University Press. Yogyakarta.</li><li>13. Sudarwanto, M., and Sanjaya, A.W. 2009. Pemalsuan Susu. Departemen Ilmu Penyakit Hewan dan Kesehatan Masyarakat Veteriner. FKH-IPB, Bogor.</li><li>14. Walstra, P., J.T.M, Wouters., and T.J. Geurts. 2006. Dairy Science and Technology. CRC Press. New York.</li><li>15. Wiryodiningrat, S. 2009. Pengawetan Kulit Mentah Kambing dengan Asap Cair dari Limbah Tempurung Kelapa. Majalah Kulit, Karet dan Plastik. 25(1): 1-6</li></ol>
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