UIN SUNAN KALIJAGA YOGYAKARTA
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Undergraduate Programme in Physics

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MODULE HANDBOOK

Module Name	Instrumentation of Halal Product Guarantee
Module level, if applicable	Bachelor
Code, if applicable	FIS425073
Subtitle, if applicable	-
Courses, if applicable	Instrumentation of Halal Product Guarantee (Instrumentasi Jaminan Produk Halal)
Semester(s) in which the module is taught	6th (sixth)
Person responsible for the module	Chair of Instrumentation Interest Area
Lecturer(s)	Frida Agung Rakhmadi, S.Si., M.Sc.
Language	Indonesia
Relation to curriculum	Elective course in the third year (6th semester) Bachelor Degree
Type of teaching, contact hours	150 minutes lectures and 180 minutes structured activities per week.
Workload	Total workload is 136 hours per semester, which consists of 150 minutes lectures per week for 14 weeks, 180 minutes structured activities per week, 180 minutes individual study per week, in total is 16 weeks per semester, including mid exam and final exam
Credit points	3
Requirements according to the examination regulations	Minimum attendance 75% All assignments must be submitted before the exam
Recommended prerequisites	No prerequisites stated on
Module objectives/intended learning outcomes	After completing this course, the students: CO 1 Understanding concepts of halal in Islam. CO 2 Understanding halal political policies and market reviews CO 3 Understanding guarantee of halal products and implementing halal certification CO 4 Understanding physical parameters in halal product testing and physics-based halal test methods CO 5 Understanding chemical parameters in halal product testing and chemical -based halal test methods CO 6 Understanding bological parameters in halal product testing and bological -based halal test methods CO 7 Undertanding opportunities and challenges in developing halal test methods. C0 8 Developing halal test methods
Content	a. Halal concepts in Islam. b. Halal political policies. c. Halal in market review. d. Guarantee of halal products. e. Halal certification. f. Physical parameters in halal product testing.

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<table>
<tr><td></td><td>
g. Physics-based halal test methods..
h. Chemical parameters in halal product testing.
i. Chemical-based halal test methods.
j. Biological parameters in halal product testing.
k. Biological-based halal test methods.
l. Opportunities in developing halal test methods.
m. Challenges in developing halal test methods.
</td></tr>
<tr><td>Study and examination requirements and forms of examination</td><td>
The final mark will be weighted as follows:
<table>
<tr><th>NO</th><th>Assessment methods (components, activities)</th><th>Weight (percentage)</th></tr>
<tr><td>1</td><td>Final Examination</td><td>35%</td></tr>
<tr><td>2</td><td>Mid-Term Examination</td><td>35%</td></tr>
<tr><td>3</td><td>Class Activities : Quiz, Homework, etc.</td><td>30%</td></tr>
</table>

The final assessment is expressed in the form of a letter value converted from a number value with the following categories:
<table>
<tr><th>NO</th><th>Number Value</th><th>Letter Value</th><th>NO</th><th>Number Value</th><th>Letter Value</th></tr>
<tr><td>1</td><td>≥ 95</td><td>A</td><td>7</td><td>65-69.99</td><td>B/C</td></tr>
<tr><td>2</td><td>90-94.99</td><td>A-</td><td>8</td><td>60-64.99</td><td>C+</td></tr>
<tr><td>3</td><td>85-89.99</td><td>A/B</td><td>9</td><td>55-59.99</td><td>C</td></tr>
<tr><td>4</td><td>80-84.99</td><td>B+</td><td>10</td><td>50-54.99</td><td>C-</td></tr>
<tr><td>5</td><td>75-79.99</td><td>B</td><td>11</td><td>55-34.99</td><td>D</td></tr>
<tr><td>6</td><td>70-74.99</td><td>B-</td><td>12</td><td><35</td><td>E</td></tr>
</table>
</td></tr>
<tr><td>Media employed</td><td>White-board, Lcd Projector, e-learning (https://daring.uin-suka.ac.id/)</td></tr>
<tr><td>Reading list</td><td>
1. Florence Bergeaud-Blackier et.al. 2016. *Halal Matters*. Routledge
2. Erika Kress-Rogers and Cristhoper J B Brimelow. 2001. *Instrumentation and Sensors for the Food Industry*. CRC.
3. Ibtissam E Tothill. 2003. *Rapid and On-line Instrumentation for Food Quality Assurance*. CRC.
4. Kavita Marwaha. 2010. *Control and Analysis for Food and Agricultural Products*. Gene-Tech Books.
5. Ignacio Arana. 2012. *Physical Properties of Foods*. CRC Press.
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PLO and CO Mapping

	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
CO 1	√								
CO 2	√								
CO 3				√					
CO 4		√	√	√					
CO 5			√	√					
CO 6			√	√					
CO 7		√	√	√					
CO 8		√	√	√	√				