

**SATUAN ACARA PERKULIAHAN**

**TEKNIK TATA CARA KERJA**

**Oleh :**

**Dr. Ir. Hartrisari, DEA**

**Ir. Faqih Udin, M.Sc**

**M. Arif Darmawan, STP, MT**



**DEPARTEMEN TEKNOLOGI INDUSTRI PERTANIAN**

**FAKULTAS TEKNOLOGI PERTANIAN**

**INSTITUT PERTANIAN BOGOR**

**2016**

## Course Syllabus

### Industrial Work Methods and Design

Course title	Industrial Work Methods and Design		
Course code: <b>TIN211</b>	Credits: 2(2-0)	Semester: 4	Compulsory/optional: Compulsory
Coordinator's name	Dr. Hartrisari Harjomidjojo	Instructor's name	Ir. Faqih Udin, M.Sc. M. Arif Darmawan, STP, MT
Main reference (Title, author, year) (maximum 3 references)	<ol style="list-style-type: none"> <li>Niebel. B.W and A. Freivalds. 2013. Methods, Standards and Work Design 13th Edition. Boston.</li> <li>Bedny Gregory and Karwowski Waldemar. 2007. A Systematic - Structural Theory of Activity: Allications to Human Performance and Work Design. Taylor &amp; Francis Group, LLC</li> </ol>		
Additional reference (Supplemental materials)	<ol style="list-style-type: none"> <li>Barnes. R.M. 1980. Motion and Time Study: Design and Measurement of Work, 7th Edition. Wiley.</li> <li>Sutalaksana. I.Z., R.A. Anggawarsita and J.H. Tjakraatmadja. 1982. Teknik Tata Cara Kerja. ITB, Bandung.</li> <li>G. Mancini, G. Johannsen, L. Martensson. 1985. Analysis, Design and Evaluation of Man Machine System. Proceedings of the 2end IFAC/IFIP/IFORS/IEA Conference, Vanesa, Italy.</li> <li>S. Aft Lawrence. 2000. Work Measurement and Methods Improvement. J.Wiley and Son.</li> <li>Salvendy G. 2012. Handbook of Human Factors and Ergonomics: 4<sup>th</sup> Edition. John Wiley and Sons, Inc</li> <li>Human Factors Engineering. J. Wiley and Son.</li> </ol>		
Brief description	This course introduces studies on work methods and work measurements systems, including principles of motion study, work simplification and work measurement, human and environmental factors in the work system, ergonomy and determination of standard time.		
Prerequisite	None.		
Course outcome	<ol style="list-style-type: none"> <li>Understand techniques and principles used for resulting the best work system in terms of motion study, ergonomic and work environment</li> <li>Perform a time study and work sampling of a typical work operation</li> <li>Understand standard time.</li> </ol>		
Relationship between course outcomes and student outcomes	Course outcome A, B, and C supports student outcomes 1, 2, 4, 7, and 12.		
Offered to	Study Program of Agroindustrial Technology-IPB and other study programs as elective course		
Topics to be covered	<ol style="list-style-type: none"> <li>Introduction</li> <li>Work map</li> <li>Motion study</li> <li>Economy of motion</li> <li>Human and work environment</li> </ol>		

	6. Ergonomics 7. Working time measurement 8. Determination of working allowance 9. Determination of standard time				
ATSP Student Outcomes	1. An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities 2. An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies 4. An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives 7. An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature 12. An ability to accomplish the integration of system using appropriate analytical, computational, and application practices and procedures				
Percentage	Knowledge	40 %	Facility/media	x	White board
	Skill	40 %		x	LCD projector
	Attitude	20 %		x	Computer
Activity, contact hours (hour/week)	Lecture	2 hours/week			Wifi
	Lab work	-	x	Sound system	
	Tutorial	-		Courseware	
	Others	-		Other: ....	
Assessment	Assignment	-			
	Examination	100 % (mid and final exams)			
	Quiz	-			

## JADWAL DAN MATERI PERKULIAHAN

Week	Learning Outcomes	Topics	References	Lecturer
1.	Understand techniques and principles used for resulting the best work system in terms of motion study, ergonomic and work environment	✓ Konsep teknik tata cara kerja, manfaat teknik tata cara kerja dalam industri, aplikasi teknik tata cara kerja dalam industri	1	Hartrisari
2.		✓ Konsep, tujuan dan manfaat peta-peta kerja keseluruhan (peta proses operasi, peta aliran proses, peta regu kerja, diagram alir proses)	1	Hartrisari
3.		✓ Konsep, tujuan dan manfaat peta-peta kerja setempat (peta pekerja dan mesin serta peta tangan kiri dan tangan kanan)	1	Hartrisari
4.		✓ Konsep <i>motion study</i>	1	Hartrisari
5.		✓ Konsep <i>motion study</i>	1	Hartrisari
6.		✓ <i>Economy of motion</i>	1	Faqih
7.				
<i>Midterm Exam</i>				
8.	Perform a time study and work sampling of a typical work operation	✓ <i>Human and work environment</i>	1	Faqih
9.		✓ Ergonomics	1	Faqih
10.		✓ <i>Working time measurement</i>	1,2	Arif
11.			1,2	Arif
12.		✓ <i>Determination of working allowance</i>	1,2	Arif
13.	Understand standard time	✓ <i>Determination of standard time</i>	1,2	Arif
14.			1,2	Arif

### MAIN REFERENCE:

1. Niebel. B.W and A. Freivalds. 2013. Methods, Standards and Work Design 13th Edition. Boston.
2. Bedny Gregory and Karwowski Waldemar. 2007. A Systematic - Structural Theory of Activity: Allications to Human Performance and Work Design. Taylor & Francis Group, LLC

## JADWAL DAN MATERI RESPONSI

Week	Learning Outcomes	Topics	References	Lecturer
1.	Understand techniques and principles used for resulting the best work system in terms of motion study, ergonomic and work environment	✓ Konsep teknik tata cara kerja, manfaat teknik tata cara kerja dalam industri, aplikasi teknik tata cara kerja dalam industri	1	Hartrisari
2.		✓ Konsep, tujuan dan manfaat peta-peta kerja keseluruhan (peta proses operasi, peta aliran proses, peta regu kerja, diagram alir proses)	1	Hartrisari
3.		✓ Konsep, tujuan dan manfaat peta-peta kerja setempat (peta pekerja dan mesin serta peta tangan kiri dan tangan kanan)	1	Hartrisari
4.		✓ Konsep <i>motion study</i>	1	Hartrisari
5.		✓ Konsep <i>motion study</i>	1	Hartrisari
6.		✓ <i>Economy of motion</i>	1	Faqih
7.				
<i>Midterm Exam</i>				
8.	Perform a time study and work sampling of a typical work operation	✓ <i>Human and work environment</i>	1	Faqih
9.		✓ Ergonomics	1	Faqih
10.		✓ <i>Working time measurement</i>	1,2	Arif
11.			1,2	Arif
12.		✓ <i>Determination of working allowance</i>	1,2	Arif
13.	Understand standard time	✓ <i>Determination of standard time</i>	1,2	Arif
14.			1,2	Arif