

## 523895461 Cacao By Product Processing

<b>Module Name</b>		<b>Cacao By Product Processing</b>
<b>Module Level, if applicable</b>	Cacao By Product Processing	
<b>Code if Applicable</b>	523895461	
<b>Subtitle, if applicable</b>	-	
<b>Courses, if applicable</b>	523895461 Cacao By Product Processing	
<b>Semester(s) in which the module is taught</b>	6 <sup>th</sup>	
<b>Person responsible for the module</b>	Dr. Ir. I Wayan Alit Artha Wiguna	
<b>Lecturer</b>	Dr. Ir. I Wayan Alit Artha Wiguna	
<b>Language</b>	Indonesian	
<b>Relation to curriculum</b>	Elective Course for undergraduate program in the Food Technology Department, Faculty of Agriculture and Animal Science	
<b>Type of teaching</b>	Lecture, Project	
<b>Workload</b>	<ul style="list-style-type: none"> <li>● Lecture: 3 SKS X 50 minutes X 16 weeks</li> <li>● Project: 3 SKS X 60 minutes X 16 weeks</li> <li>● Independent learning: 3 SKS X 60 minutes X 16 week</li> </ul>	
<b>Credit points</b>	3 SKS X 1.5 = 4.5 ECTS	
<b>Requirements according to the examination regulations</b>	<ol style="list-style-type: none"> <li>1. Registered in this course</li> <li>2. Minimum 80% attendance in this course</li> </ol>	
<b>Recommended prerequisites</b>	Food Chemistry and Biochemistry	
<b>Module Objectives (Intended learning outcomes)</b>	<p>On successful completion of this course, the student should be able to :</p> <ul style="list-style-type: none"> <li>● Understand the scope of chocolate production by-products</li> <li>● Explain potential of cocoa husk, pulp, bean shell being processed phytochemically (compounds) as new products</li> <li>● Explain and predict the by-product marketing potential</li> <li>● Explain and direct practice the by-products process nata de cacao from cacao pulp</li> <li>● Explain and direct practice the by-products process cacao tea from cacao bean shell</li> <li>● Pectin extraction from cacao husk</li> </ul>	

<p><b>Module Content</b></p>	<p>This course is intended to learn by products of cacao such as cacao husk, pulp, bean shell</p>
<p><b>Study and examination requirements and forms of examination</b></p>	<p><b>Cognitive:</b> Midterm exam, Final exam, Quizzes, Assignments  <b>Affective:</b> Assessed from the element /variables achievement, namely (a) Contributions (attendance, active, role, initiative, and language), (b) Being on time, (c) Effort.</p>
<p><b>Media employed</b></p>	<p>Explanation and discussing from paper, direct experimental with industrial partner</p>
<p><b>Recommended Literature</b></p>	<p>For Class</p> <p><b>A. Compulsory</b></p> <ol style="list-style-type: none"> <li>1. Mason, P., 2021. Cacao. Book Section, p.201.</li> <li>2. Soares, T.F. and Oliveira, M.B.P., 2022. Cocoa by-products: Characterization of bioactive compounds and beneficial health effects. <i>Molecules</i>, 27(5), p.1625.</li> <li>3. Vásquez, Z.S., de Carvalho Neto, D.P., Pereira, G.V., Vandenberghe, L.P., de Oliveira, P.Z., Tiburcio, P.B., Rogez, H.L., Neto, A.G. and Soccol, C.R., 2019. Biotechnological approaches for cocoa waste management: A review. <i>Waste management</i>, 90, pp.72-83.</li> </ol> <p><b>B. Option</b></p> <ol style="list-style-type: none"> <li>1. Rojo-Poveda, O., Barbosa-Pereira, L., Zeppa, G. and Stévigny, C., 2020. Cocoa bean shell—a by-product with nutritional properties and biofunctional potential. <i>Nutrients</i>, 12(4), p.1123.</li> <li>2. Ouattara, L.Y., Kouassi, E.K.A., Soro, D., Soro, Y., Yao, K.B., Adouby, K., Drogui, A.P., Tyagi, D.R. and Aina, P.M., 2021. Cocoa pod husks as potential sources of renewable high-value-added products: a review of current valorizations and future prospects. <i>BioResources</i>, 16(1).</li> <li>3. Delgado-Ospina, J., Lucas-González, R., Viuda-Martos, M., Fernández-López, J., Pérez-Álvarez, J.Á., Martuscelli, M. and Chaves-López, C., 2021. Bioactive compounds and</li> </ol>

	<p>techno-functional properties of high-fiber co-products of the cacao agro-industrial chain. <i>Heliyon</i>, 7(4).</p> <p>4. Dos Anjos Lopes, S.M., Martins, M.V., de Souza, V.B. and Tulini, F.L., 2023. Evaluation of the nutritional composition of cocoa bean shell waste (<i>Theobroma cacao</i>) and application in the production of a phenolic-rich iced tea. <i>Journal of Culinary Science &amp; Technology</i>, 21(5), pp.818-828.</p> <p>5. Bakantiche, D.I. and Momade, Z., 2022. Production and characterisation of pectin from cocoa bean shells. <i>International Journal of Advanced Research</i>, 5(1), pp.161-173.</p>
<b>Date of Last Amendment</b>	8 <sup>th</sup> January 2022