



UNIVERSITAS GADJAH MADA

Faculty of Geography

Department of Development Geography

Regional Development Study Program

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Undergraduate Programme in Regional Development

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MODULE HANDBOOK

Module name	ICT-Based Regional Development
Module level, if applicable	Bachelor
Code, if applicable	GPW3218
Subtitle, if applicable	-
Courses, if applicable	ICT-Based Regional Development
Semester(s) in which the module is taught	6 th Semester
Person responsible for the module	Department of Development Geography
Lecturers	Prof. Dr. Rini Rachmawati, S.Si., M.T. Prof. Dr. R. Rijanta, M.Sc. Dr. Nur Mohammad Farda, S.Si., M.Cs.
Language	Indonesia
Relation to curriculum	Elective course in the third year (6 th Semester) Bachelor Degree
Type of teaching, contact hours	100 minutes in weekly class meeting, 100 minutes structured activities per week
Workload	Total workload is 70 hours consisting of 100 minutes lectures per week for 14 weeks, 100 minutes structured activities per week, and 100 minutes individual study per week, in total 16 weeks per semester, including mid exam and final exam
Credit points	2
Requirements according to the examination regulations	Students are required to take ICT-Based Regional Development course (GPW3218), have 70% presences, and bring an examination card where the course is stated on
Recommended prerequisites	-
	<p>CLO-1: Students are able to understand concepts, significances, and issues of ICT related to study of geography and regional development</p> <p>CLO-2: Students are able to analyze recent issues and problems related to ICT-Based Regional Development in Indonesia and in the world, correlated to the globalization</p> <p>CLO-3: Students are able to learn best practices of ICT-Based Regional Development from various aspects, countries and the possibilities to be implemented in Indonesia</p>
Content	<ol style="list-style-type: none"> 1. Introduction and ICT-Based Regional Development Issues, Smart City, SPBE, Industry 4.0, and Society 5.0 2. Urban Development in the ICT Era 3. ICT-Based Village Development

	<ol style="list-style-type: none"> 4. Smart Cities, Villages and Regions 5. ICT-Based Government and Public Services 6. Variety of ICT-Based Applications in Regional Development 7. Regional Branding and the Role of ICT 8. Globalization and ICT 9. ICT and Rural Urban Linkage 10. Utilization of ICT in Agriculture 11. Development of Transmigration Areas and Industry 4.0 12. Presentation of Web-Based Regional Data 13. Big Data in Regional Development 14. Introduction of Artificial Intelligence in Regional Development 									
Study and examination requirements and forms of examination	<p>Grades are determined based on:</p> <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 5%;">No</th> <th style="text-align: left; width: 70%;">Grading Methods</th> <th style="text-align: right; width: 25%;">Weight Percentage</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Examination</td> <td style="text-align: right;">90%</td> </tr> <tr> <td>2</td> <td>Assignments</td> <td style="text-align: right;">10%</td> </tr> </tbody> </table>	No	Grading Methods	Weight Percentage	1	Examination	90%	2	Assignments	10%
No	Grading Methods	Weight Percentage								
1	Examination	90%								
2	Assignments	10%								
Teaching Aid	Laptop, projector, white board, and e-learning via simaster									
Reading List	<p>Compulsory References</p> <p>Barlow, M. and Bencheton, C.L. 2019. "Smart Cities, Smart Future: Showcasing Tomorrow." New Jersey, John Willey and Sons.</p> <p>Bibri, S.E. 2019. "Sustainable, Smart, and Data-Driven Approaches to Urbanism and their Integrative Aspects: A Qualitative Analysis of Long-Lasting Trends. in: Big Data Science and Analytics for Smart Sustainable Urbanism". <i>Advances in Science, Technology & Innovation</i>. Springer, Cham. https://doi-org.ezproxy.ugm.ac.id/10.1007/978-3-030-17312-8_4</p> <p>Brunn, SD dan T.R. Leinbach. 1991. "Collapsing Space and Time: Geographic Aspects of Communication and Information, Harper Collins Academic." London.</p> <p>Canedo, E.D., Morais do Vale, A.P., Patrão, R.L., Camargo de Souza, L., Machado Gravina, R., Eloy dos Reis, V., Lúcio Lopes Mendonça, F. and de Sousa, R.T.Jr. 2020. "Information and Communication Technology (ICT) Governance Processes: A Case Study", <i>Information</i> 11(10): 462.</p> <p>Caragliu, A., Bo, D., and Chiara F. 2019. "Smart Innovative Cities: The Impact of Smart City Policies on Urban Innovation." <i>Technological Forecasting & Social Change</i> 05/2019 Vol. 142.</p> <p>Castells, M. 1996. "<i>The Information Age: Economy, Society and Culture. Volume I The Rise of the Network Society.</i>" Blackwell Publisher Massachusetts.</p> <p>Djunaedi, A., Permadi, D., Nugroho, L.E., Widyawan, Rachmawati, R., Hidayat, A., Achmad, K.A., Egaravanda, S. 2018 "Membangun Kota dan Kabupaten Cerdas: Sebuah Panduan bagi Pemerintah Daerah", Gadjah Mada University Press.</p> <p>Rachmawati, R. 2014. Pengembangan Perkotaan dalam Era Teknologi Informasi dan Komunikasi. Gama Press Yogyakarta.</p> <p>Kim, C. and Kim, K.A. 2021. "The Institutional Change from e-Government Toward Smarter City; Comparative Analysis Between Royal Borough of Electronically-based governance system for public services 85 Greenwich, UK, and Seongdong-gu, South Korea". <i>Journal of Open Innovation: Technology, Market, and Complexity</i> 7(1):1-33.</p>									

Stimmel, C.L. 2016. "Building Smart Cities: Analytics, ICT, and Design Thinking." CRC Press, Taylor & Francis Group.

Nurdin, M. dan Rachmawati, R. (editor). 2017. "Pembangunan Desa Berbasis ICT". Badan Penerbit Fakultas Geografi Universitas Gadjah Mada.

Additional References

Sensuse, D.I., Putro, P.A.W., Rachmawati, R., and Sunindyo, W.D. 2022. "Initial Cybersecurity Framework in the New Capital City of Indonesia: Factors, Objectives, and Technology." *Information* 13: 580. <https://doi.org/10.3390/info13120580>.

Rachmawati, R., Fitri Anjani, D.F., Ainur Rohmah, A.A., Nurwidiani, T., Almasari, H., 2022, "Electronically-based governance system for public services: implementation in the Special Region of Yogyakarta, Indonesia", *Human Geographies-Journal of Studies and Research in Human Geography*, 6 (1), pp. 71-86 (2022).

Rachmawati, R., Mei, E.T.W., Nurani, I., W., Ghiffari, R.A., Rohmah, A.A., Sejati, M.A., 2021, "Innovation in Coping with the COVID-19 Pandemic: The Best Practices from Five Smart Cities in Indonesia", *Sustainability*, 13 (21), pp. 12072 (2021).

Rachmawati, R., Choirunnisa, U., Pambagyo, Z.A., Syarafina, Y.A., Rizki Adriadi Ghiffari, 2021, "Work from Home and the Use of ICT during the COVID-19 Pandemic in Indonesia and Its Impact on Cities in the Future", *Sustainability*, 13 (12), pp. 6760 (2021).

Rachmawati, R., Sari, A.D., Sukawan, H.A.R., Widhyastana, I.M.A., Ghiffari, R.A., 2021, "The Use of ICT-Based Applications to Support the Implementation of Smart Cities during the COVID-19 Pandemic in Indonesia", *Infrastructures*, 6 (9), pp.119 (2021).

Rachmawati, R., Haryono, E., Rohmah, A.A., Permatasari, F.D., Fathurrahman, R., 2021, "Smart Strategies of the Regional Preparation for the Plan of Moving the New Capital in the Regency of Kutai Kartanegara." The 8th International Conference on ICT for Smart Society (ICISS) 2021 Proceeding 2021 International Conference on ICT for Smart Society (ICISS), DOI: 10.1109/ICISS53185.2021.9533249 <https://ieeexplore.ieee.org/document/9533249>

Rachmawati, R., Haryono, E., Rohmah, A.A., 2021, "Developing Smart City in the New Capital of Indonesia." IEEE International Smart Cities Conference (ISC2) 2021 Proceeding 2021 IEEE International Smart Cities Conference (ISC2), DOI: 10.1109/ISC253183.2021.9562891 dan dapat diakses melalui <https://ieeexplore.ieee.org/abstract/document/9562891>

Galuh, A.N.P. & Rachmawati, R., 2021, "Study of Mobile City Application in Indonesia", *Jurnal TATALOKA*, 23 (2), pp. 159-170 (2021).

Sukawan, H.A.R. & Rachmawati, R., 2021, "MyTransport. SG as a new communication platform in implementing smart mobility in Singapore", *Journal of Physics: Conference Series*, 1834 (1) (2021), pp. 012006

Rachmawati, R., Farda, N.M., Setiyono, B., 2020, "Model of Agents-Based Branchless Banking Services Development in Urban and Rural Area" *Indonesian Journal of Geograpy (IJG)*, 52(1) (2020), page 69-79.

	<p>Choirunnisa, U. & Rachmawati, R., 2020, "ICT Usages in Yogyakarta's Tourist Villages Development", <i>Journal of Indonesian Tourism and Development Studies</i>, 8(2) (2020), pp. 12-118</p> <p>Rachmawati, R., 2019, "Toward better City Management through Smart City implementation," <i>Human Geographies – Journal of Studies and Research in Human Geography</i>, 13(2).</p> <p>Rachmawati, R., Farda, N.M., Rijanta, R., Setiyono, B., 2019, "The Advantages And Analysis of The Location of Branchless Banking In Urban And Rural Areas in Yogyakarta Special Region, Indonesia," <i>Journal of Urban and Regional Analysis</i>, 11(1), 2019, p. 53 – 68</p> <p>Rohmah, A.A. & Rachmawati, R., 2019, Utilization and Quality of Information System for Administration Services Based on ICT In Patehan, Kraton, Yogyakarta, <i>Indonesian Journal of Science & Technology</i> 4 (1) (2019) 55-63</p> <p>Rachmawati, R., 2018, "Pengembangan Smart Village untuk Penguatan Smart City dan Smart Regency," <i>Jurnal Sistem Cerdas, Asosisasi Prakarsa Indonesia Cerdas</i>, eISSN:2622-8254, 1(2) (2018).</p> <p>Rachmawati, R., Hapsari, S.A., Cita, A.M., 2018, Virtual space utilization in the Digital SMEs Kampongs: Implementation of Smart City and Region, <i>Human Geographies – Journal of Studies and Research in Human Geography</i>, 12 (1)(2018).</p> <p>Rachmawati, R., Ramadhan, E., Rohmah, A.A., 2018, "Aplikasi Smart Province Jogja Istimewa: Penyediaan Informasi Terintegrasi dan Pemanfaatannya," <i>Majalah Geografi Indonesia</i>, 32 (1)(2018), pp.14 – 23.</p>
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PLO and CLO Mapping

	PLO – A1	PLO- A2	PLO – B1	PLO – C1	PLO – D1	PLO – D2
CLO-1	√					
CLO-2		√				
CLO-3			√			