SILABUS MATA KULIAH

1. PSL-501. PEMBANGUNAN & DAMPAK LINGKUNGAN

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep pembangunan ekonomi berkelanjutan; (2). Menjelaskan beberapa kaidah dan prinsip pendekatan ekonomi dan ekologi dalam permasalahan pembangunan dan LH; (3). Melakukan analisis kritis terhadap permasalahan dampak lingkungan

Pokok bahasan meliputi: Pendahuluan: Kecenderungan perhatian atas lingkungan hidup. Pembangunan dan Lingkungan Hidup: Sumberdaya; Produksi dan Konsumsi, Welfare economic, Willingness to pay dan consumer welfare. Problematik Ekologi: Kesinambungan pembangunan Pembangunan, Ketersediaan sumberdaya, Lingkungan sosial-budaya. Problematik Ekologi Pembangunan: Pengelolaan lingkungan yang adaptif, Pengelolaan proyek pembangunan. Problematik Ekologi Kependudukan: Daya dukung lingkungan dan kepadatan penduduk, Pemindahan penduduk, Kerusakan/gangguan lingkungan, Pencemaran dan penyusutan sumberdaya, pengendalian dan penanggulangan. Problematik Ekologi Kependudukan: Kemiskinan perkotaan, Kerawanan sosial. Problematik Ekologi Pangan: Sumber, Pola dan kerentanan pangan; Diversifikasi pangan; Pangan dan daya dukung lingkungan. Problematik Ekologi Pariwisata: Daya dukung lingkungan dan keaneka-ragaman, Keindahan alam dan amenitas, Vandalisme (pencemaran dan kerusakan), Dampak sosial-budaya, Zonasi/kawasan sentra pengembangan. Problematik Sumberdaya Energi dan Pembangunan: Peranan dan pemanfaatan energi, Permasalahan energi, Penganeka-ragaman sumber energi. Permasalahan kritis lingkungan hidup: Kasus Industri Petro-kimia. Permasalahan kritis lingkungan hidup: Kasus Agro-Industri

Kelompok Pakar:

Referensi

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Chafid Fandeli. 2011. Analisis Mengenai Dampak Lingkungan Pembangunan Pelabuhan. 979-420-760-8. Penerbit GMUP.

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Glasson, J; Therivel, R; Chadwick A. 2005. Introduction to Environmental Impact Assessment. Routledge, London

Hanna, K. 2009. Environmental Impact Assessment: Practice and Participation". Second edition, Oxford.

Otto Soemarwoto. 1988. Analisis mengenai dampak lingkungan. Gajah mada university press. 326 halaman

Petts, J. (ed), Handbook of Environmental Impact Assessment Vol 1 & 2, Blackwell, Oxford ISBN 0-632-04772-0

PT. DUTA TEHNIK UTAMA. 2009. Analisis Dampak Lingkungan Hidup (ANDAL) Pembangunan Long Storage Bulia Kabupaten Gorontalo. Penerbit: Ditjen SDA Balai Wilayah Sungai Sulawesi II.

2. PSL-502. SISTEM LINGKUNGAN & ANALISISNYA

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep ekologi dan ekosistem; (2). Menjelaskan kembali beberapa kaidah dan prinsip pendekatan sistem dalam fenomena ekologi; (3). Melakukan analisis ekologis dalam permasalahan LH; dan (4). Menjelaskan beberapa konsep dan instrumen analisis dalam kajian ekosistem.

Pokok bahasan meliputi: Pendahuluan: Filosofi dan konsep ekosistem dalam kajian SDA-LH; Sistem Ekologi ; Ekologi dan ekosistem, Materi, energi dan informasi. Sistem Ekologi: Interaksi populasi, Habitat dan tempat hidup, Adaptasi dan evolusi. Teknik dan metode analisis ekosistem: Ekologi kuantitatif, Kompetisi, eksploitasi. Sistem Lingkungan hidup: Arti dan makna lingkungan hidup sebagai suatu sistem, Kualitas lingkungan, Lingkungan hidup sebagai sumberdaya, Kebutuhan dasar manusia, Interaksi manusia-lingkungannya, Neraca materi dan energi, Manfaat dan risiko lingkungan. Penerapan Konsep Ekosistem dalam Pengelolaan Pertanian: Agro-ekosistem: Productivity, Stability, Sustainability, Equity; b. Farming Systems. Penerapan Konsep Ekosistem dalam Pengelolaan Perikanan: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Peternakan: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Hutan: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Pertambangan: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Permukiman (URBAN): Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Lingkungan Industri: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop

Kelompok Pakar:

Referensi

1. Arrow, K., G. Daily, P. Dasgupta, S. Levin, K. Maler, E. Maskin, D. Starrett, T. Sterner, and T.
2. Bingham, G., R. Bishop, M. Brody, D. Bromley, E. Clark, W. Cooper, R. Costanza, T. Hale, G. Hayden, S. Kellert, R. Norgard, B. Norton, J. Payne, C. Russell, and G. Suter. 1995. "Issues in Ecosystem Valuation: Improving Information for Decision Making." Ecological Economics 14:73-90.
3. Bockstael, N., M. Freeman, R. Kopp, P. Portney, and K. Smith. 2000. "On Measuring the Economic Values for Nature." Environmental Science and Technology 34:1384-1389.
4. Bockstael, N., R. Costanza, I. Strand, W. Boynton, K. Bell, and Wainger. 1995. "Ecological Economic Modeling and Valuation of Ecosystems." Ecological Economics 14:143-159.
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6. Daily, G.C., S. Alexander, P.R. Ehrlich, L. Goulder, J. Lubchenco, P.A. Matson, H.A. Mooney, S. Postel, S.H. Schneider, D. Tilman, and G.M. Woodwell. 1997. "Ecosystem Services: Benefits Supplied to Human Societies by Natural Ecosystems." Issues in Ecology 2:1-16.
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8. Loomis, J.B., and D.S. White. 1996. "Economic Benefits of Rare and Endangered Species: Summary and Meta-analysis." Ecological Economics 18(18):197-206.
9. Michael, H.J., K.J. Boyle, and R. Bouchard. 2000. "Does the Measurement of Environmental Quality Affect Implicit Prices Estimated from Hedonic Models?" Land Economics 76(2):283–298.
10. Moran, D., and D. Pearce. 1997. "The Economics of Biodiversity." In The International Yearbook of Environmental and Resource Economics 1997/1998—A Survey of Current Issues, Henk Folmer and Tom Tietenberg (eds.), pp. 82-113, Cheltenham, UK: Edward Elgar Publishing Company.
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14. Renner, R. 1998. "Calculating the Cost of Natural Resource Damage." Environmental Science and Technology (Feb 1):86-90.

15. Tietenberg. 2000. "Managing Ecosystem Resources." Environmental Science and Technology 34:1401-1406.

3. PSL-503 FILSAFAT ILMU DAN METODE PENELITIAN

Setelah mengikuti kuliah ini mahasiswa dapat membuat usulan penelitian disertasi dalam lingkup sumberdaya, lingkungan dan pembangunan, serta dapat membuat karya tulis ilmiah untuk mempublikasikan hasil penelitiannya.

Pokok bahasan meliputi: Filsafat ilmu dalam konteks sumberdaya dan lingkungan (ilmu, pengetahuan, logika, berfikir secara deduktif-induktif-verifikatif). Peran penelitian dan pengembangan dalam perkembangan IPTEK dan pembangunan. Pengertian penelitian: ciri-ciri, etika, kualitas, proses pelaksanaan penelitian, dan research setting. Problematik penelitian lingkungan: pengertian research problem; keterkaitannya dengan permasalahan aktual yang dihadapi oleh masyarakat dan pembangunan; identifikasi, deskripsi dan formulasinya. Konsep, teori, indikator, variabel, dan definisi operasionalnya. Hipotesis dan tujuan penelitian. Metode penelitian: eksperimental, survei, dan simulasi. Karya tulis ilmiah: ciri-ciri karangan ilmiah, penulisan ilmiah, penyajian dan komunikasi ilmiah. Pembuatan konsep usulan penelitian tesis dalam lingkup sumberdaya, lingkungan dan pembangunan.

Referensi:

1. James M. Beard, 1994. *Chemistry, Energy and the Environment*, Wuerz Publishing, Ltd, Winnipeg, Canada.
2. Nigel Bunce, 1994. *Environmental Chemistry, 2nd Edition,* Wuerz Publishing, Winnipeg, Canada.
3. Stewart E. Allen, Editor, 1989. *Chemical Analysis of Ecological Materials, Second Edition*, Blackwell Scientific Publications, Oxford.
4. D. T. E. Hunt and A. L. Wilson, 1990. *The Chemical Analysis of Water, General Principles and Techniques, Second Edition*, Royal Society of England, Cambridge.
5. Lawrence H. Keith, Editor, 1998, *Principles of Environmental Sampling*, American Chemical Society, Washington.
6. Environmental Impact Assessment Methodologies, by Y. Anjaneyulu, B.S. Publication, Sultan Bazar, Hyderabad.
7. Environmental Science and Engineering, by J. Glynn and Gary W. Hein Ke – Prentice Hall Publishers.
8. Environmental Pollution and Control, by Dr H.S. Bhatia – Galgotia Publication (P) Ltd, Delhi.
9. Booth, W. C., G. G. Colomb and J. M. Williams. 2008. The Craft of Research (Third Addition). Chicago: University of Chicago Press

Benchmarking: UNIVERSITY OF WATERLOO

Kelompok Pakar:

4. PSL-504. PEMB. BERKELANJUTAN-BERWAWASAN LINGKUNGAN

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep pembangunan ekonomi berkelanjutan; (2). Menjelaskan beberapa kaidah dan prinsip pendekatan ekonomi dan ekologi dalam permasalahan pembangunan dan LH; (3). Melakukan analisis kritis terhadap permasalahan dampak lingkungan.

Pokok bahasan meliputi: Pendahuluan: Kecenderungan perhatian atas lingkungan hidup. Pembangunan dan Lingkungan Hidup: a. Sumberdaya; Produksi dan Konsumsi, b. Welfare economic, c. Willingness to pay dan consumer welfare. Problematik Ekologi: a. Kesinambungan pembangunan Pembangunan, b. Ketersediaan sumberdaya, c. Lingkungan sosial-budaya.

Problematik Ekologi Pembangunan: a. Pengelolaan lingkungan yang adaptif, b. Pengelolaan proyek pembangunan. Problematik Ekologi Kependudukan a. Daya dukung lingkungan dan kepadatan penduduk, b. Pemindahan penduduk, c. Kerusakan/gangguan lingkungan, d. Pencemaran dan penyusutan sumberdaya, Pengendalian dan penanggulangan.

Problematik Ekologi Kependudukan: a. Kemiskinan perkotaan, b. Kerawanan sosial. Problematik Ekologi Pangan: a. Sumber; Pola dan kerentanan pangan, b. Diversifikasi pangan, c. Pangan dan daya dukung lingkungan.

Problematik Ekologi Pariwisata: a. Daya dukung lingkungan dan keaneka-ragaman, b. Keindahan alam dan amenitas, c. Vandalisme; pencemaran dan kerusakan, d. Dampak sosial-budaya, e. Zonasi/ kawasan sentra pengembangan. Problematik Sumberdaya Energi dan Pembangunan: a. Peranan dan pemanfaatan energi, b. Permasalahan energi, c. Penganeka-ragaman sumber energi. Permasalahan kritis lingkungan hidup , Kasus Industri Petro-kimia, Permasalahan kritis lingkungan hidup , Kasus Agro-Industri

KELOMPOK PAKAR:

Referensi:

1) Edwards, C. A. and D. Pimental. 2002. The future of human populations: Energy, food, and water availability in the twenty-first century. In: Just ecological integrity, pp. 119-39.
2) Ryszkowski, L. 2002. Integrity and sustainability of natural and man-made ecosystems. In: Just ecological integrity, pp. 155-66.
3) Miller, P. and L. Westra. 2002. Just ecological integrity: The ethics of maintaining planetary life. London: Rowman & Littlefield, pp. xi-52.
4) Wackernagel, M. and W. Rees. 1996. Our ecological footprint: Reducing human impact on the earth. Philadelphia: New Society Publishers, pp. 1-60.
5) Elliot, J. 2001. An introduction to sustainable development. London: Routledge.

6) Miller, P. and L. Westra. 2002. Just ecological integrity: The ethics of maintaining planetary life. London: Rowman and Littlefield.
7) Wackernagel, M. and W. Rees. 1996. Our ecological footprint: Reducing human impact on the Earth. Philadelphia: New Society.
8) Cech, T. 2002, Principles of water resources: History, development management and policy. Wiley, UK, (ISBN 0471438618), pp 445.
9) de Villiers, M., 1999, Water, the fate of our most precious resource, Houghton Mifflin Co., (ISBN 0618030093), pp 352.
10) Shiferaw, B., Freeman, H. A., and Swinton, S. M.,2004, Natural resource management in agriculture: Methods for assessing economic and environmental impacts, Eds. (ISBN 0851998283), pp 384.

Benchmarking: UNIVERSITY OF WASHINGTON

5. PSL-505 HUKUM LINGKUNGAN

Environmental Justice

The objective of this course is to motivate student to question history and authority, expand student view of race, gender, class and the environmental to a global scale and perspective. Since the linking of social and environmental justice movement is relatively young this course will be an exciting opportunity to work as a group to clarify and promote the issues surrounding the environmental justice movement.

Mata kuliah ini juga dirancang untuk memahami perkembangan kebijakan dan hukum penyelenggaraan pengelolaan SDA & lingkungan hidup dalam rangka pembangunan berkelanjutan yang berwawasan lingkungan pada norma hukum dengan memperhatikan tingkat kesadaran masyarakat dan perkembangan lingkungan global serta perangkat hukum internasional yang berkaitan dengan SDA & lingkungan hidup. Menelaah tentang peraturan perundangan yang bersangkutan, yang tumbuh dan berkembang sesuai dengan masalah-masalah lingkungan yang aktual untuk memperoleh cara pengaturan dan implementasinya yang tepat serta menjawab tantangan-tantangan pada era otonomi daerah dan era globalisasi.

Referensi:

1. Bowen, William. 2002. “An Analytical Review of Environmental Justice Research: What do we really know?” Environmental Management 29 (1): 3-15.
2. Brechen S., P. Wilshuen, C. Fortwangler, P. West. 2003. “The Road Less Traveled: Towards Nature Protection with Social Justice.” In Contested Nature: Promoting International Biodiversity with Social Justice in the Twenty-firth Century. S. Brechen, P. Wilshuen, C. Fortwangler, P. West, eds, pp 251-270. Albany: State University of New York Press.
3. Brechen, P. Wilshuen, C. Fortwangler, P. West, eds. 2003. Contested Nature: Promoting International Biodiversity with Social

Justice in the Twenty-first Century. Albany: State University of New York Press.
4. Fortwangler, C. 2003 “Incorporating Social Justice and Human Rights into Protected Area Policies”. In Contested Nature: Promoting International Biodiversity with Social Justice in the Twenty-firth Century. S. Brechen, P. Wilshuen, C. Fortwangler, P. West, eds, pp 25-40. Albany: State University of New York Press.
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7. Peluso, Nancy Lee, 2000. "Coercing Conservation?: The Politics of State Resource Control" Global Environmental Change 3:2 (June):199-218.
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10. Taylor, Dorceta. 2000. Advances in Environmental Justice: Research, Theory, and Methodology. American Behavioral Scientist 43(4): 602-632

Benchmarking: Tropical Resources Institute. Yale School of Forestry and Environmental Studies. YALE UNIVERSITY.

KELOMPOK PAKAR:

6. PSL-506 KEBIJAKAN LINGKUNGAN DAN IMPLEMENTASINYA

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep kebijakan pengelolaan LH ; (2). Menjelaskan kaidah, prinsip dan paradigma kebijakan pengelolaan LH; (3). Melakukan simulasi analisis kebijakan pengelolaan LH

Pokok bahasan meliputi: Kebijakan Pengelolaan LH di Indonesia: Perkembangan, Kebijakan Nasional, Kebijakan sektoral. Analisis Kebijakan lingkungan: Kriteria analisis evaluasi, Kebijakan desentralisasi lingkungan: Liability law; Property Rights. Analisis Kebijakan: Ekonomi baku mutu/standar kualitas lingkungan, Kebijakan berbasis insentif. Kebijakan Publik Pengendalian Pencemaran air: Benefit dan Cost perbaikan kualitas air, Baku mutu dengan biaya terendah, Subsidi; Regulasi/enforcement; Assessment Pencemaran air, Kecenderungan mutakhir. Kebijakan Publik pengendalian polusi udara: Benefit dan Cost perbaikan kualitas udara, Kebijakan formal dan kendala yang dihadapi, Automobil. Problem khusus pengendalian polusi udara: polutan apa yang terpenting; tanggung-jawab perawatan; mengeliminir Pb, Polutan taxes. Beberapa issu penting manajemen lingkungan: Biaya pengendalian pencemaran/polusi, Teknik dan metode valuasinya, Indikator dan parameter. Equity dan Pollution control: Benefit; Cost; Cost subsidies; Assistance. Issu-

issu penting manajemen lingkungan: Perkembangan teknologi dan polusi/Pencemaran, Identifikasi & deskripsi. Populasi; pertumbuhan ekonomi dan lingkungan, Perlindungan kelangkaan. Issue- issu penting manajemen lingkungan: Politik Polusi, Persepsi dan peranserta masyarakat, Dampak sosial. Kebijakan tingkat daerah: Baku mutu regional, BAPPEDALDA, Pemanfaatan SDA-LH daerah. Peraturan perundangan Lingkungan Hidup: UULH, Peraturan Pemerintah, Kebijakan departemen teknis

Kelompok Pakar:
Referensi:

1. Cohen, Steven (2006) Understanding Environmental Policy. New York: Columbia University Press.
2. Drysek, John S. (1997) The Politics of the Earth: Environmental Discourses. (New York: Oxford University Press).
3. Durant, Robert, Daniel Fiorino, and Rosemary O'Leary (eds) (2004) Environmental Governance Reconsidered: Challenges, Choices, and Opportunities. Cambridge, MA: The MIT Press.
4. Field, Barry C. (2007) Environmental Policy: an Introduction. Long Grove, IL: Waveland Press.
5. Lutter, Randall and Jason Shogren (eds) (2004) Painting the White House Green. Washington, DC: Resources for the Future Press.

Benchmarking: School of Planning, College of Design, Architecture, Art, and Planning; University of Cincinnati

7. PSL-507. EKONOMI–EKOLOGI LINGKUNGAN

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep ekologi-ekonomi dalam pemanfaatan & pengelolaan SDA, (2). Menjelaskan beberapa kaidah dan prinsip pendekatan ekonomi dan ekologi dalam pemanfaatan SDA, (3). Melakukan simulasi analisis eksternalitas pemanfataan SDA

Pokok bahasan meliputi: SDA-Pembangunan-LH. Sistem ekonomi Sumberdaya Alam: Produksi-Konsumsi-limbah: Pengertian; sifat dan dimensi, Potensi Sumberdaya Alam Indonesia, Masalah pengembangan sumberdaya alam, Perspektif ekonomi dan ekologi. Pendekatan-pendekatan dan teknik-teknik analisis: Pengambilan keputusan over time: interest rate; compounding; discounting; Property right dan penggunaan SDA, Ekonomi kesejahteraan dan peranan pemerintah, Private vs public goods, Kegagalan mekanisme pasar. Sumberdaya dapat-habis & Kelangkaan Sumberdaya: Optimal depletion, Measures of Scarcity. Sumberdaya Renewable: Model of optimal uses, Problematik common-properties. Penggunaan sumberdaya alam Non-renewable (SDA-NR): Barang tambang sebagai non-renewable resources, Teori ekstraksi barang tambang, Struktur pasar dan strategi penggunaan SDA-NR, Uncertainty, Pertumbuhan ekonomi dan SDA-NR. Eksternalitas dan Polusi/pencemaran

lingkungan. Taksonomi eksternalitas: Publik vs privat; eksternalitas dalam konsumsi; eksternalitas dalam produksi; internalisasi eksternalitas. Alternatif pengendalian eksternalitas: Pajak vs subsidi , Pajak vs baku mutu / standar Standar vs fees/penalties Fees for emissions. Marketable permits in externalities control: Tatanan kelembagaan, Karakteristik sistem permits, The ambient based systems, The emission based system, The offset system, Cost of alternative permit system.

Kelompok Pakar:

Referensi:

1. Barbier, E. and G. Heal. 20006. "Valuing Ecosystem Services," Economists' Voice, Berkeley Electronic Press. http://www2.gsb.columbia.edu/faculty/gheal/Economists-Voice-published.pdf
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3. Czech, B. 2000. Shoveling fuel for a runaway train: errant economists, shameful spenders, and a plan to stop them all. University of California Press.
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5. Daly, H. E., and J. Farley. 2003. Ecological economics: principles and applications. Island Press, Washington, DC.
6. Daly, H. E., Farley, J. 2004. Chapter 2: The Fundamental Vision. In Ecological Economics: Principles and Applications. Island Press, Washington DC.
7. Gunderson, L.H. and C.S. Holling. 2002. Panarchy: Understanding Transformations in Human and Natural Systems. Washington, D.C.: Island Press.
8. Hall, C., Lindenberger, D., Kummel, R., Kroeger, T., Eichhorn, W. 2001. The need to reintegrate the natural sciences with economics. BioScience 51 (8): 663-673.
9. Harris, J. 2002. Environmental and Natural Resource Economics: A Contemporary Approach, Chapter 2 "Sustainable Development" (WebCT file)
10. Harris, J. M. 2006. Environmental and Natural Resource Economics: A Contemporary Approach. New York: Houghton Mifflin Company.
11. Sagoff, M. 2004. Carrying capacity and ecological economics. In Price, Principle, and the Environment. Cambridge University Press.
12. Soderbaum, P. 1999. Ecological Economics: Chapter 1: Environmental and Other Problems. Earthscan Publication Ltd, London.
13. Toman, Michael, 1994. "Economics and Sustainability: Balancing Tradeoffs and Imperatives" Land Economics 70: 399-413.

Benchmarking: UNIVERSITY OF NEBRASKA

8. PSL-508. PENGELOLAAN SUMBERDAYA ALAM & LINGKUNGAN

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep pemanfaatan & pengelolaan SDA-LH, (2). Menjelaskan kembali beberapa kaidah dan prinsip pendekatan ekonomi dan ekologi dalam pengelolaan SDA-LH, (3). Melakukan simulai analisis keterkaitan pembangunan - SDA dan LH.

Pendahuluan: Sumberdaya; Pembangunan dan Lingkungan; Ekosistem sumberdaya alam. Pengelolaan SAD-LH: Teori; Prinsip-prinsip; Teknik dan Metode Pengelolaan; Sumberdaya: Energi; Komoditas; Pangan; Hutan; Air. Pengelolaan Lingkungan: Alternatif Pemanfaatan Lingkungan Alam, Efek perubahan teknologi, Baku mutu/standar kualitas lingkungan. Indeks kualitas lingkungan: Struktur indeks lingkungan, Indeks polusi udara, Indeks pencemaran air. Indeks kualitas lingkungan: Indeks mutu hidup & indeks biologis, Indeks kualitas lahan, Indeks aestetika, Indeks lingkungan lainnya. Ekologi Pencemaran Lingkungan: Pencemaran air, Pencemaran udara/Polusi, Pencemaran lahan, Limbah dan polutan/pencemar. Fungsi kerusakan lingkungan: Fungsi kerusakan univariat, Fungsi kerusakan multi-variat. Proteksi/Perlindungan Lingkungan: Faktor kualitas dalam perlindungan lingkungan, Epidemiologi lingkungan, Limbah & gangguan lingkungan dan penanganan limbah, Vector Control, Foods Protection. Pengembangan Program Pengelolaan SDA & LH: Teknik dan Metode perencanaan, Dampak lingkungan, RPL dan RKL

Kelompok Pakar:

Referensi:

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Benchmarking: University of Minesota

9. PSL-509 REKAYASA LINGKUNGAN

Principles of Environmental Engineering

Course Objectives:

(1). Understand the basic concepts of environmental engineering; and (2). Solve environmental engineering problems.

Population, economic growth, industrialization, urbanization and energy-use, as causes of environmental pollution. Mass and energy balance for environmental engineering systems under steady state and unsteady state conditions. Physical and transport properties of homogeneous and heterogeneous mixtures. Contaminant partitioning and transport in air, water and solids. Characteristics of particles, chemistry of solutions and gases, material balances, reaction kinetics, microbiology and ecology, as related to the environment.

Application of environmental principles (technical and non-technical) to: water resource management, water and wastewater treatment, air pollution control, solid waste management, environmental impact assessment, and environmental ethics. Thermal pollution, noise pollution, greenhouse effect, acid precipitation, ozone depletion, air toxics, and ground-level ozone and fine particulates (photochemical smog).

Sustainable development, life cycle analysis, and principles of environmental quality objectives, standards and guidelines.

Kelompok Pakar:

Referensi:

1. Alley, E.R, Stevens, L.B., and Cleland, W. L., Air Quality Control Handbook. McGraw-Hill, 1998. ISBN: 0-07-001411-6.
2. Bagchi, A. 1994. Design, Construction, and Monitoring of Landfills, (2nd Ed). Wiley Interscience, 1994. ISBN: 0-471-30681-9.

3. Bellandi, R. (ed), Hazardous Waste Site Remediation: The Engineer's Perspective. Wiley Interscience, 1995. ISBN: 0471286931.
4. Buonicore, A.J. (ed) and W.T. Davis (ed). 1992. Air Pollution Engineering Manual. Air & Waste Management Association. Wiley-Interscience, 1992. ISBN: 0-471-28441-6.
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12. Veissman, W. and Hammer, M., Water Supply and Pollution Control (6th Ed.) Addison Wesley, 1998. ISBN: 032101460X

Benchmarking: The Association of Professional Engineers and Geoscientists of British Columbia

10. PSL-510. ANALISIS RISIKO BENCANA

Students will, through completion of a set of FEMA disaster Management courses, directed readings, guided discussions, assignments and exercises, gain the ability to understand the current disaster management doctrine and its inherent limitations. Students successfully completing the course will also be able to participate in the risk assessment process to enhance the health, safety and environmental security of their community, its critical infrastructures and commercial and residential buildings.

Pokok bahasan meliputi: Pengertian dan ruang lingkup risiko Bencana. Jenis-jenis risiko Bencana. Proses terjadinya risiko Bencana. Identifikasi risiko Bencana: fungsi identifikasi Bencana, proses identifikasi Bencana, pengukuran potensi risiko Bencana. Metode dan aplikasi analisis risiko Bencana, karakteristik Bencana, komponen-komponen lingkungan yang terkena risiko Bencana. Teknis identifikasi Bencana, prakiraan Bencana dan evaluasi risiko Bencana.

Manajemen risiko: proses-prosesnya. Model-model matematik dan statistik untuk pendugaan risiko. Perencanaan pengelolaan risiko dan respon tanggap darurat serta hubungannya dengan studi analisis sistem Bencana. Prinsip dasar metode dan aplikasi analisis risiko lingkungan dan risiko bencana, serta memahami karakteristik , komponen-komponen lingkungan yang terkena risiko Bencana. Teknis identifikasi, prakiraan dan evaluasi risiko lingkungan. Perencanaan pengelolaan risiko lingkungan dan respon tanggap darurat Bencana.

Referensi:

1) FAO. 2003. Local institutions and livelihoods: Guidelines for Analysis by N. Messer and P. Townsley. Rome.
2) FAO. 2004. The role of local institutions in reducing vulnerability to recurrent natural disasters and in sustainable livelihoods development. Consolidated report on case studies and workshop findings and recommendations. Rural Institutions and Participation Service (SDAR). Rome.
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6) UN/ISDR. 2004. Living with Risk: A global review of disaster reduction initiatives. 2004 Version, Volume 1. Geneva.
7) UN/ISDR. 2004. Living with Risk: A global review of disaster reduction initiatives. 2004 Version, Volume II Annexes. Geneva.

8) UN/ISDR. 2005. Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disaster (available at www.unisdr.org/eng/hfa/hfa.htm).
9) UN/ISDR. 2007. Words into Action: a guide for implementing the Hyogo Framework. Geneva.

Kelompok Pakar:

Benchmarking:

11. PSL-511 METODE PENGELOLAAN BENCANA

Concepts of disaster; Types of disaster? Natural and manmade : Cyclone, flood, land slide, land subsidence, fire and earthquake. Issues and concern for various causes of disasters. Disaster management, mitigation, and preparedness; Techniques of monitoring and design against the disasters. Management issues related to disaster; Mitigation through capacity building, legislative responsibilities of disaster management; disaster mapping, assessment, pre-disaster risk & vulnerability reduction, post disaster recovery & rehabilitation; disaster related infrastructure development. Remote-sensing and GIS applications in real time disaster monitoring, prevention and rehabilitation. Risk and Vulnerability Analysis; Evacuation Analysis and Studies.

Natural disaster: Introduction to Natural Disasters; Earthquake Disasters: Hazards; Tsunami Disasters: Science Monitoring & Mitigation ; Volcanoes: Introduction ; Lava Properties & Eruption Types; Monitoring & Mitigation; Landslides & Collapse : Landslide Types ; Assessment, Mitigation and Case Studies; Severe Weather: Thunderstorms and Lightning ; Tornadoes ; Extreme Heat & Desertification; Hurricanes Mitigation; Flooding Disasters: Science Flooding: Monitoring & Mitigation; Wild Fires : Monitoring & Mitigation.

Operations Management (OM), Risk Assessment and Disaster Response, Quantification Techniques, NGO Management, SWOT Analysis based on Design & Formulation Strategies, Insurance & Risk Management, Role of Financial Institutions in Mitigation Effort, Group Dynamics, Concept of Team Building, Motivation Theories and Applications, School Awareness and Safety Programmes, Psychological and Social Dimensions in Disasters, Trauma and Stress, Emotional Intelligence, Electronic Warning Systems, Recent Trends in Disaster Information Provider, Geo Informatics in Disaster Studies, Cyber Terrorism, Remote Sensing & GIS Technology, Laser Scanning Applications in Disaster Management, Statistical Seismology, Quick Reconstruction Technologies, Role of Media in Disasters, Management of Epidemics, Bio-Terrorism, Forecasting / Management of Casualties.

Referensi:

1) Schlossberg, M. (2003). GIS, the US Census and Neighborhood Scale Analysis. Planning, Practice, and Research. Vol. 18, No. 2-3, pp. 213-217.

2) Masozera, M., Bailey, M., and Kerchner, C. (In Press) Distribution of Impacts of Natural Disasters Across Income Groups: Case Study of New Orleans. Ecological Economics.
3) Haque, C.E. (2003). Perspectives of Natural Disasters in East and South Asia, and the Pacific Island States: Socio-economic Correlates and Needs Assessment. Natural Hazards. Vol. 29. No. 3, pp. 465-483.
4) Besio, et. al. (1998). Risk maps: theoretical concepts and techniques. Journal of Hazardous Materials. Vol. 61, pp. 299-304.
5) Chen, K., Blong, R., and Jacobson, C. (2003). Towards an Integrated Approach to Natural Hazards Risk Assessment Using GIS: With Reference to Bushfires. Environmental Management. Vol. 31, No. 4, pp. 546-560.
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Kelompok Pakar:

Benchmarking:

12. PSL-512. EARLY WARNING SYSTEM

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa juga mampu untuk: (1). Memahami konsep-konsep AMDAL, (2). Menjelaskan kembali beberapa kaidah dan prinsip dan prosedur AMDAL, (3). Melakukan simulasi Penyusunan AMDAL.

Setelah mengikuti mata kuliah ini(pada Akhir Semester) diharapkan mahasiswa juga mampu untuk: (1) memahami konsep dasar Early Warning Systems dan sumberbencana.; (2) Meningkatkannya *knowledge*, *attitude* dan *practice t*erhadap fenomena bencana, gejala-gejala awal dan mitigasinya (3) dapat mengambil keputusan terhadap suatu kawasan dengan mempertimbangkan potensi bencana.

Pokok Bahasan Meliputi sains dasar (matematika, fisika, kimia, biologi, geologi) (K1), geofisika secara umum dan keterkaitannya dengan ilmu-ilmu lainnya seperti geologi, geodesi, geokimia, geografi, komputasi, teknologi-informasi (K2), memahami keberadaan bumi sebagai salah satu planet dalam sistem tatasurya (solar system) di dalam sebuah mahasistem alamraya (universe) (K3), fisika, bentuk, dan struktur internal bumi (K4), konsep semua metode geofisika (antara lain seismik, gravitasi, magnetik, elektrik, elektromagnetik, termik, radioaktivitas) (K5), langkah-langkah ilmiah akusisi data, pengolahan data, dan interpretasi (K6), konsep eksplorasi sumberdaya alam untuk energi (mis. minyak dan gas bumi, batubara, panas bumi) dan bahan tambang (mis, besi, tembaga, emas, perak, timah) serta air tanah dengan metode geofisika (K7),gejala-gejala alamiah seperti gempabumi, tsunami, letusan gunungapi (K8), gejala-gejala global dan perubahannya (global change) serta implikasinya, seperti rotasi dan nutasi bumi, gerakan-gerakan kerak/lempeng benua, serta gerakan-gerakan bagian dalam bumi, pemanasan global, meluasnya lubang lapisan ozon dan sebagainya (K9), operasional sains dasar (matematika, fisika, kimia, biologi, geologi) (K13), Menguasai secara operasional dalam berinteraksi dengan para ahli ilmu-ilmu lain yang terkait dengan EWS (K14), operasional perhitungan pengaruh keberadaan benda-benda langit seperti bulan dan matahari terhadap bumi seperti adanya gejala pasang-surut, variasi harian dan semiharian, badai magnetik akibat sun spots (noda-noda matahari) dan sebagainya (K15), penjelasan bentuk dan struktur internal bumi dan bagaimanakah caranya menentukannya (K16)

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2) IFRC 2005. World disasters report 2005. (Disasters data prepared by the Centre for Research on the Epidemiology of Disasters from the EM-DAT database.) International Federation of RedCross and Red Crescent Societies, Geneva.
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Kelompok Pakar:

Benchmarking:

13. PSL-513 WAWASAN NUSANTARA DAN KETAHANAN NASIONAL

TUJUAN:

Mahasiswa dapat mengerti, memahami, mendalami, menghayati Wawasan Nasional Bangsa Indonesia dalam mencapai cita-cita Nasional. Secara khusus mahasiswa dapat memahami dan menjelaskan landasan wawasan nusantara; dapat memahami dan menjelaskan unsur dasar wawasan nusantara ; dan dapat memahami dan menjelaskan hakekat wawasan nusantara. Mahasiswa dapat memahami konsepsi dan peran ketahanan nasional dalam Bermasyarakat, berbangsa dan bernegara. Secara khusus mahasiswa dapat memahami dan menjelaskan asas-asas ketahanan nasional dan sifat ketahanan nasional.

NATIONAL SECURITY. The term —security has many shifting meanings, nuances, and interpretations. This course will begin by exploring alternative and mainstream definitions of security.

Foundational Concepts and Principles:

This section introduces (or reviews) the concepts and principles of international relations theory and then challenges those principles with the effects of globalization. It then goes from the general to the specific by examining American traditions and predilections. The war powers of the executive and legislative branches are presented including historical examples

National Security Strategy. The meaning of grand strategy is provided before presenting the 8 variations of the Cold War containment strategy, the post-Cold War strategic alternatives, and the strategies of the post-Cold War administrations. A number of strategic concepts are introduced.

Instruments and Actors. This block first presents the departments and agencies of the executive branch that house the capacities to act. The relevant congressional committees are identified and covered briefly.

Orchestrating the Instruments of National Power. We now turn to the problem of orchestrating all the instruments of power. The National Security Council is the highest level organization charged with integrating responsibilities. Each administration's NSC is reviewed to identify what works and what doesn't.

Referensi

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2. Cohen, William S., "The Defense Strategy," Annual Report of the Secretary of Defense to the President and the Congress, 2000, Chapter 1, pp. 1-16.
   Hoffman, Bruce. 1999. *Inside Terrorism*. New York: Columbia University Press.
3. Douglas P. Lackey, *The Ethics of War and Peace* (Englewood Cliffs, NJ: Prentice Hall, 1989), Chapter 3, pp. 28-57.

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7. Robert Kagan, "Power and Weakness," *Policy Review* (June 2002), pp. 1-21
8. Robert Powell, *In The Shadow of Power: States and Strategies in International Politics* (Princeton, NJ: Princeton University Press, 1999), pp. 3-39.
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12. Walter Laqueur, "The Changing Face of Terror," reprinted from James F. Hoge and Gideon Rose, *How Did This Happen?: Terrorism and the New War* (New York, NY: Perseus Books, 2001), pp. 450-457.

Benchmarking: The *Johns Hopkins University*

Kelompok Pakar:

14. PSL-514 ETIKA LINGKUNGAN

TUJUAN

The major objectives are to (1) gain an understanding of the field of moral philosophy as it appertains to environmental ethics; (2) gain an understanding of the context of environmental, personal and professional ethics ; (3) become familiar with the use of ethical theory in environmental analysis; (4) To understand the major applications of ethics to environmental ; (5) be introduced to some of the major alternatives in ethical theory in environmental policy; (6) be able to incorporate environmental ethics into professional judgments in environmental decision.

BAHAN KAJIAN

Introduction to ethical theory: A general discussion of the major fields of moral theory. The distinction between personal, professional and public ethics will be discussed. The modern and post-modern paradigm of scientific reductionism will be examined.

A review of general philosophical ethics: A discussion of how ethics in general relates to environmental policy analysis. A discussion of homocentric, biocentric and ecocentric theory to environmental policy.

Applications of ethics to environmental policy: Discussion of how to apply ethical theory to environmental issues. An historical review of ethics in environmental policy. Animal rights, ecofeminism, deep ecology, and social ecology. The application of moral theory to ecology and ecology to moral theory. Ecology and ethics in environmental policy. Can there be a monist theory of environmental ethics?

A discussion of the land ethic: A general discussion of the application of ethical theory to environmental policy. Environmental activism and the role of personal ethics in environmental policy.

Referensi:

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2. Donald VanDeVeer and Christine Pierce (editors) 1994. The Environmental ethics and Policy Book: Philosophy, Ecology, Economics. Wadsworth Publishing.
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Benchmarking: University of Colorado

Kelompok Pakar:

15. PSL-515. KETAHANAN LINGKUNGAN

Environmental Security

This course explores the link between the environment and national security. It specifically focuses on four key drivers: food, water, infectious disease and energy. If a state cannot secure enough food and water for its citizens, effectively respond to infectious disease outbreaks and/or provide energy to drive its economy, it runs the risk of disintegrating socially and politically, becoming a breeding ground for terrorism and violence, and threatening the stability of all other states in our globalized society.

At the conclusion of this course, a student will be able to:

1. Explain the concept of environmental security.
2. Describe the relevance of environmental security to national security.
3. Evaluate the available future energy options for the Indonesian given projected technical, economic, and socio-political constraints.
4. Evaluate environmental, technological, economic, and socio-political considerations and propose a sustainable energy plan for a developing region of the world.

This course starts by defining environmental security and examining how consideration of this field has broadened the duties of the Indonesian Army. It then looks at the key triggers of an unhealthy environment: food, water, infectious disease and energy. Particular attention is focused on the issue of energy: electricity generation, nuclear power, and the hydrogen economy are studied in some detail. To ground the course in real world applicability, students are required to make two oral presentations throughout the semester where they highlight a recent news item that relates to course content. At mid-semester, they form teams, choose a developing country, and ultimately devise a strategy to further energy security in this country given its unique mix of environmental, technological, economic and socio-political constraints.

KELOMPOK PAKAR:

Referensi

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2. Gunther Baechler, "Why Environmental Transformation Causes Violence: A Synthesis," *Environmental Change and Security Project Report* Issue 4, The Woodrow Wilson Center, Spring 1998, 24-44. (Available online at http://ecsp.si.edu/Ecsp_pdf.htm)

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8. Susan C. Stonich, "Development, Rural Impoverishment, and Environmental Destruction in Honduras," Chapter 2 in Michael Painter and William Durham, eds., *The Social Causes of Environmental Destruction in Latin America* (Ann Arbor, MI: The University of Michigan Press, 1995), 63-99.
9. Thomas Homer-Dixon, "Overview," in *Environment, Scarcity, and Violence*, Princeton University Press, 1999, 12-27. (On reserve).
10. Thomas Homer-Dixon, “Environmental Scarcities and Violent Conflict: Evidence from Cases,” *International Security*, 19, No.1, 1994, 5-40. (Library has online)
11. United Nations Development Programme, “New Dimensions of Human Security,” in *Green Planet Blues: Environmental Politics from Stockholm to Kyoto*, Ken Conca and Geoffrey D. Dabelko, eds., Westview Press, 1998, 298-303. (On reserve)
12. World Development Report 2008 “Agriculture for development”, World Bank. (http://siteresources.worldbank.org/INTWDR2008/Resources/WDR_00_book.pdf).

Benchmarking: UCSB: University of California Santa Barbara

20. PSL-520 ADMINISTRASI & AUDIT LINGKUNGAN

Setelah mengikuti matakuliah ini mahasiswa dapat memahami pengertian, tujuan, manfaat audit lingkungan, serta ruang lingkup dan peraturan-peraturan tentang audit lingkungan.

Pokok bahasan meliputi: Pengertian dan ruang-lingkup audit lingkungan. Proses audit lingkungan: Fllow-up action plan, Audit reporting, Exit review, Audit review, Open interview, pre-Audit planning. Jenis-jenis audit lingkungan: management audits dan Transaction audit. Management audit: Waste audit, Compliance audit, Liability audit, Management systems audit, Occupational health & safety audit, Operational audit. Transaction audit: Risk & liability. Pengkajian administrasi, pengkajian teknik lingkungan. Protokol audit, proses pelaksanaan dan teknik pengambilan/pengumpulan data serta pemeriksaan lapangan. Teknik penyusunan laporan dan rekomendasi audit lingkungan. Unsur-unsur audit lingkungan: Kebijaksanaan, peraturan, disain operasi, perawatan & house keeping, sumber pencemar, lingkungan fisik, contingency plan, laporan kecelakaan, kesadaran lingkungan. Metode pendekatan praktis: pengkajian organisasi. Pengkajian aspek teknk lingkungan: lingkup pengkajian, pendekatan sistem, sumber generik pengaruh lingkungan, proses pengkajian. Sertifikasi ISO 14001 : Sistem Pengelolaan Lingkungan. Environmental Auditing Systems.

Audit lingkungan juga dirancang untuk memahami pengertian, tujuan, manfaat audit lingkungan, serta ruang lingkup dan peraturan-peraturan tentang audit lingkungan. Mengenal berbagai jenis audit lingkungan. Memahami protokol audit, proses pelaksanaan dan teknik pengambilan/pengumpulan data serta pemeriksaan lapangan. Memahami teknik penyusunan laporan dan rekomendasi audit lingkungan.

KELOMPOK PAKAR:

Referensi:

1) Hunt D.,Jonson C. (1995) Environmental Management System-principles and Practice, Mc Graw-Hill Book Company Europe, Brekshire, England.
2) Canter, L., Environmental Impact Assessment. McGraw Hill, 1996. ISBN: 0070097674
3) Bartell, S., Kolluru, R., Pitblado, R., and Stricoff, S., Risk Assessment and Management Hanbook: For Environmental, Health and Safety Professionals. McGraw Hill, 1996. ISBN: 0070359873
4) Lerch, I. And Paleologos, E., Environmental Risk Analysis. McGraw Hill, 2001. ISBN:0071372660
5) McGraw, D., Environmental Auditing and Compliance Manual. Wiley Interscience, 1993. ISBN: 0471285854
6) Woodside, G. Yturri, J. and Aurricho, P., ISO 14001 Implementation Manual. McGraw Hill, 1998. ISBN: 0070718520
7) Curran, M., Environmental Life-Cycle Assessment. McGraw Hill, 1996. ISBN: 007015063X

8) Dorf, R.C., Technology, Humans and Society: Toward a Sustainable World. AcademicPress, 2001. ISBN: 0122210905
9) Pearce, D. and Barbier, E., Blueprint for a Sustainable Economy. Earthscan Publications, 2000. ISBN: 1853835153

Benchmarking: INSTITUTE OF ENVIRONMENTAL MANA-GEMENT & ASSESSMENT

21. PSL-521 ANALISIS RISIKO LINGKUNGAN

Analisis risiko dalam pengelolaan lingkungan : dirancang untuk memahami pengertian, fungsi, manfaat serta peraturan-peraturan tentang analisis risiko lingkungan. Setelah mengikuti kuliah ini mahasiswa memahami pengertian, fungsi, manfaat serta peraturan-peraturan tentang analisis risiko lingkungan.

Pokok bahasan meliputi: Pengertian dan ruang lingkup risiko lingkungan agribisnis. Jenis-jenis risiko. Risk & uncertainty; Risk & opportunity; Risk, hazard, peril & losses. Proses terjadinya risiko lingkungan. Identifikasi risiko: fungsi identifikasi, proses identifikasi, pengukuran potensi risiko. Metode dan aplikasi analisis risiko, karakteristik, komponen-komponen lingkungan yang terkena risiko. Teknis identifikasi, prakiraan dan evaluasi risiko. Manajemen risiko: proses-prosesnya. Model-model matematik dan statistik untuk pendugaan risiko. Perencanaan pengelolaan risiko dan respon tanggap darurat serta hubungannya dengan studi analisis sistem agribisnis.

Prinsip dasar metode dan aplikasi analisis risiko lingkungan, serta memahami karakteristik , komponen-komponen lingkungan yang terkena risiko. Teknis identifikasi, prakiraan dan evaluasi risiko lingkungan. Perencanaan pengelolaan risiko lingkungan dan respon tanggap darurat serta hubungannya dengan studi AMDAL, UKL dan RPL dll.

KELOMPOK PAKAR:

Referensi:

1. E. V. Ohanian, J. A. Moore, J. R. Fowle III, G. S. Omenn, S. C. Lewis, G. M. Gray and D. Warner North, Workshop Overview Risk Characterization: a bridge to informed decision making, *Fundamental and Applied Toxicology*, 39: 81 – 88 (1997).
2. M. J. Scott, G. Bilyard, S. O. Link, C. A. Ulibarri, H. E. Westerdhal, P. F. Ricci and H. E Seely, Valuation of ecological resources and functions, *Env. Management*, 22: 49 – 68 (1998).
3. M. Power (Ed.) Special Section, Perspectives of the Scientific Community on the status of Ecological Risk Assessment, *Env. Management*, 21: 803 – 830 (1997).

4. P. Calow, Ecological risk assessment: risk for what? How do we decide?, *Ecotox. & Env. Safety*, 40: 15 – 18 (1998).
5. P. F. Ricci, Health risk assessment: science, economics and law, *Ann. Rev. Energy*, 11: 77 – 94 (1986).
6. P. F. Ricci, Regulating cancer risks, *Env. Sci. & Tech*., 19: 473 – 479 (1985).
7. R. Bonnie, Endangered species mitigation banking : promoting recovery through habitat conservation planning through the Endangered Species Act, *Sci. Tot. Env*., 240: 11 – 19 (1999).

Benchmarking: Mahidol University International College, Faculty of Science, Faculty of Environment and Resource Studies, Mahidol University

22. PSL-522. ARSITEKTUR LANDSKAP & LINGKUNGAN

TUJUAN

To develop a deeper understanding of the relationship between architectural design and the environmental forces of sun, wind, and light. This design-centered course is intended to help you develop the ability to quickly test your architectural designs against fundamental ECS criteria informed by an understanding of effective and efficient ways to use energy and other environmental resources.

Bahan Kajian

ENERGY, HUMAN COMFORT AND HVAC SYSTEMS: Energy, 1st & 2nd Laws of Thermodynamics; Fuels, combustion, efficiency and power; Heat flow and the building envelope; Human Comfort: Metabolism, homeostasis, equilibrium and human comfort; Atmospheric and thermal comfort criteria; Psychometrics, sensible and latent heat; Enthalpy. Heat Flow: Convection, conduction, radiation and evaporation: magnitude and direction; Heat gain & loss, steady state conditions; Heat flow computations; R factor, U factors and infiltration; Thermal gradients, dew points and vapor barriers; Transfer through opaque construction, changes in air (CFM) and changes in moisture content.

HVAC Systems: Heat loss, gain, and system "load" demands; Degree of control, spatial, economic implications; Zoning concepts, building occupancy, design and orientations; All-air systems; Air-water systems; All-water, hydronic systems; Direct refrigerant, heat pump systems. FLUID SYSTEMS, HEALTH: SANITATION AND FIRE PROTECTION SYSTEMS.

Resources: Surface, ground water supplies, aquifers, wells, springs and hydrology; Hydrologic cycle; Pumping, treatment and storage; Wells, municipal sources and distribution systems.

Distribution: Pressure, pneumatics, hydraulics, theoretical and actual P.S.I. pressure; Pumping and storage systems, components; Sizing of plumbing networks; demand P.M.D. fixture units (F.U.) and codes; Systems distribution networks, components and flow control.

Collection/Disposal. Fire Protection Systems. LIGHT, VISION AND LIGHTING DESIGN: Light; Vision; Light Sources; Lighting Design. SOUND, HEARING AND ACOUSTICAL DESIGN : Sound; Hearing; Room Acoustics; Sound/Isolation; Mechanical Sound Amplification.

Referensi:

1. Brown, Z.G., and DeKay, Mark. 2001. Sun, Wind & Light, 2nd Edition . New York: John Wiley + Sons.
2. Allen, Ed, and Iano, Joseph. 2001. The Architects Studio Companion, 3rd Edition. New York: John Wiley + Sons.
3. Stein, Reynolds, Grondzik, Kwok. 2006. Mechanical and Electrical Equipment for Buildings, 10th edition. New York: Wiley + Sons.

Benchmarking: Washington State University.

KELOMPOK PAKAR:

23.PSL-523.BIODIVERSITAS & BIOLOGI LINGKUNGAN

Pokok bahasan meliputi: Introduction – Definition: genetic, species and ecosystem diversity; Biogeographical classification; Value of **biodiversity**: consumptive use, productive use, social, ethical aesthetic and option values; **Biodiversity** at global, national and local levels; Indonesia as a mega-diversity nation; Hot-spots of **biodiversity;** Threats to **biodiversity**: habitat loss, poaching of wildlife, man wildlife conflicts; Endangered and endemic species of Indonesia; Conservation of **biodiversity**: In-situ and Ex-situ conservation of **biodiversity.**

Biodiversity and Its Value. **Biodiversity**: Issues, Concerns, Management.

Biodiversity: Creation and Destruction, Geologic and Biogeographic Forces, Ecological Processes, Threats, Current Status.

Conservation Strategies, Past, Present, and Future: Attitudes about Conservation, Emerging Conservation Movements, Forging a National Strategy.

Managing Forests: Ecological History and Principles, From Natural Forests to Plantations, Consequences of Forest Conversion for **Biodiversity**, Recommendations for Forest Reserve Management, Recommendations for Multiple Use Management.

Managing Aquatic Ecosystems: Ecological Principles, Threats to Aquatic **Biodiversity**, Conserving **Biodiversity** in Aquatic Systems.

Monitoring: The Monitoring/Adaptive Management Cycle, Monitoring Programs, Guidelines for Successful Monitoring. Conserving **Biodiversity**: Barriers and Priorities.

KELOMPOK PAKAR:

Referensi:
1) Lambertini, M. 2000. A Naturalists Guide to the Tropics. University of Chicago Press, Chicago, IL. 312 pp.
2) Primack, R. and R. Corlett. 2005. Tropical Rain Forests. An Ecological and Biogeographical Comparison. Blackwell Publishing, Malden, MA. 319 pp.
3) Riordan, Timothy and Susanne Stoll-Kleemann. 2002. Biodiversity, Sustainability and Human Communities: Protectiong beyond the Protected. Cambridge University Press.
4) Richard B. Primack. 2002. Essentials of Conservation Biology. Sinauer Associates, Inc. Publishers. 698 pp. ISBN 0-87893-719-6.

Benchmarking: UNIVERSITY OF MARYLAND

24. PSL-524. DAMPAK LINGKUNGAN & ANALISISNYA

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep, indikator dan variabel dampak lingkungan, (2). Menjelaskan kembali beberapa kaidah dan prinsip pendekatan ekonomi dan ekologi dalam pendugaan dampak lingkungan, (3). Melakukan simulai analisis mengenai dampak lingkungan

Pokok bahasan meliputi: Pendahuluan: Terminologi; Peraturan perundangan terkait; AMDAL dan kegunaannya. Dampak Lingkungan dan Risiko Lingkungan: Dampak Fisik dan kimia, Dampak Biologis, Dampak sosial-ekonomi, Dampak sosial-budaya, Risiko lingkungan dan pengelolaannya. Metode pendugaan & penyajian DAL: Teknik dan metode pendugaan, Model kuantitatif dalam pendugaan, Sistem informasi DAL. Variabel dampak lingkungan dan Baku Mutu Lingkungan: Variabel Terrestrial, Variabel Akuatik, Variabel udara, Variabel Human- interface. Pendugaan dampak lingkungan (DAL): Dasar penetapan dampak, Prinsip pendugaan dampak, Lingkup pendugaan, Prosedur pendugaan, Teknik Penyajian. Pendugaan DAL: Metode kuantitatif dan kualitatif pendugaan dampak lingkungan, Langkah-langkah dalam pendugaan dampak, Hal-hal khusus dalam pendugaan, Pendekatan ekonomi-ekologi, Penyajian dampak lingkungan. Analisis ekonomi dalam pendugaan DAL: a. Pembangunan; dampak lingkungan dan peran analisis ekonomi, Aspek ekonomi dampak lingkungan, Teknik-teknik yang dapat digunakan, Metode valuasi yang dapat digunakan, Keterbatasan instrumen-instrumen analisis. Analisis ekologi dalam pendugaan DAL: Pembangunan ,dampak lingkungan dan peran analisis ekologi, Aspek ekologi dampak lingkungan, Teknik-teknik yang dapat digunakan, Metode valuasi yang dapat digunakan, Keterbatasan instrumen-instrumen analisis. Analisis sosial dalam pendugaan DAL: Pembangunan ,dampak lingkungan dan peran analisis sosial, Aspek sosial dampak lingkungan, Teknik-teknik yang dapat digunakan, Metode valuasi yang dapat digunakan, Keterbatasan instrumen-instrumen analisis. Alternatif dan rencana pengelolaan: Pengertian dan kedudukan Rencana

Pengelolaan Lingkungan (RKL), Sistem pengelolaan. RKL: Pengertian dan batasan, Regulasi RKL, Implementasi pengelolaan. Pemantauan dampak lingkungan: Pengertian dan batasan, Kegunaan pemantauan, Tipe-tipe pemantauan. RPL: Prosedur pemantauan, Lingkup dan pelaksanaan pemantauan.

Referensi:

1) Asian Development Bank. 1997. Environmental Impact Assessments for Developing Countries in Asia, Vol 1: Overview. Online at www.adb.org/Documents/Books/ Environment_Impact/default.asp.
2) Burdge, Rabel J. 1999. A Community Guide to Social Impact Assessment, Revised Edition. Middleton, WI: Social Ecology Press.
3) Canter, L.W. and S.F. Atkinson, F.L. Leistritz. 1985. Impact of Growth: A Guide for Socio-Economic Impact Assessment and Planning. Chelsea, MI: Lewis Publishers.
4) Carpenter, Richard A. and James E. Maragos (eds). 1989. How to Assess Environmental Impacts on Tropical Islands and Coastal Areas. Honolulu, HI: Environment and Policy Institute, East-West Center.
5) Gibson, R. B. 2006. Sustainability Assessment. Impact Assessment and Project Appraisal. Vol. 24, No. 3, 170-182. (Use the UW Library's E-Journals Site to find this: http://sfx.scholarsportal.info/waterloo/az)
6) Hufschmidt, M.M. and David James, A.D. Meister, B.T. Bower, J.A. Dixon.1983. Environment, Natural Systems, and Development: An Economic Valuation Guide. Baltimore: Johns Hopkins University Press.
7) Jain, R. and L.V. Urban, G.S. Stacey, H. Balbach. 2002. Environmental Assessment, 2nd edition. New York: McGraw-Hill.
8) Juvik, Sonia P. and James O. Juvik, Thomas H. Paradise Juvik. 1999. Atlas of Hawaii, 3rd Edition. Honolulu: University of Hawaii Press.
9) Kates, R., M. Mayfield, R. Torrie, and B. Witcher, 1998: Methods for estimating greenhouse gases from local places. Local Environment, 3, 279-297.
10) Knuth, S. E., 2006: Partnerships for local climate change mitigation: Connecting county governments and stakeholders in Montgomery County, Pennsylvania. M.S. thesis, Department of Geography, The Pennsylvania State University, 198 pp.
11) Marriott, Betty B.1997. Environmental Impact Assessment: A Practical Guide. New York: McGraw-Hill.
12) Morgan, Richard K. 1999. Environmental Impact Assessment: A Methodological Perspective. Boston, MA: Kluwer Academic Publishers.
13) Morris, Peter and Riki Therivel (eds). 2000. Methods of Environmental Impact Assessment: London: Spon Press.
14) Noble, Bram F. 2006. Introduction to Environmental Impact Assessment. Don Mills: Oxford University Press.

15) Porter, Alan L. and John J. Fittipaldi (eds). 1998. Environmental Methods Review: Retooling Impact Assessment for the New Century. Fargo, ND: Press Club.
16) Smith, L. Graham. 1993. Impact Assessment and Sustainable Resource Management. Burnt Mill Harlow, Essex, England: Longman Scientific & Technical (copublished with John Wiley & Sons, Inc., New York).
17) Stewart J. M. P. and Sinclair, A.J. 2007. Meaningful Public Participation in Environmental Assessment: Perspectives from Canadian participants, proponents, and government. Journal of Environmental Assessment Policy and Management. Vol. 9, no. 2, pp. 161-183. (Use the UW Library's E-Journals Site to find this: http://sfx.scholarsportal.info/waterloo/az)
18) Vanclay, F. 2006. Principles for Social Impact Assessment: A critical comparison between the international and US documents Environmental Impact Assessment Review, Vol. 26, No. 1, 3-14. (Use the UW Library's E-Journals Site to find this: http://sfx.scholarsportal.info/waterloo/az)

Benchmarking: UNIVERSITY OF WATERLOO

KELOMPOK PAKAR:

25. PSL-525 DAMPAK EKONOMI & ANALISISNYA

This is an applied analysis course that will be heavy on practice and procedure, medium to heavy on the normative foundations for measuring economic and fiscal activity within a public policy context, medium to light on overall economic theory, and light to only occasionally noticeable on those wondrous and elegant mathematical foundations to much of what we do that delights economists to no end, but me not at all. How to do economic impact analysis (input-output), why to do them, when to do them, and when not to do them.

1. Regional economic analysis and modeling: data, resources, & structures :

a. Basic economic concepts as they apply to regional analysis
b. Broad types of economic analysis of industries and communities
c. Sources of data – scope, detail, and quality
d. Usefulness of different kinds of economic data

2. Economic base theory

a. In the beginning
b. Then there was Keynes
c. Total multipliers; sectoral multipliers; multipliers considering marginal change
d. Pros and cons of base assumptions

e. Economic base simplified

3. The structure of regional industrial accounts
a. Industries, commodities, and institutions
b. Social accounts matrices
c. Simple I X I transactions

4. The practice of economic impact assessment
a. What it is, what it isn't
b. The terms, their meanings, and their limits
c. Understanding inter-industrial linkages
d. Discerning impacts, causality, etc
e. Looking at the big picture
f. Distinguishing between a good one and a bad one – some cases

5. Introduce students to an actual, home-built, spreadsheet-based, (and highly-hyphenated), input-output model.
a. This is a practical bridge between the matrix math that is usually taught in these courses and interpreting a set of current I x I accounts.
b. Learning to use the **Use** and the **Make** tables for actual analysis and community economic assessment.
c. Step-by-step impact assessment through the spreadsheet
d. Discussion of the results and the limitations of the analysis
e. **Assignment:** Students will take a SAM that I provide and replicate the steps.
6. Building a larger impact model to include job impacts
a. Getting started
b. Choosing a study area
c. Specifying an impact scenario
7. Special topics:
a. Fiscal impact assessment
b. Conjoined modeling: Fiscal, labor, and economic impacts – the dynamics of space
c. An introduction to benefit – cost considerations and a distinguishing of B/C from economic impact assessment. Economic impacts are not, I repeat not, benefits!
d. Other policy considerations: the appropriateness of public spending for private projects

Referensi:

1. Broomhall, David. 1993. The Use of Multipliers in Economic Impact Estimates. [www.agcom.purdue.edu/AgCom/Pubs/EC/EC-686.html]. November 1993.
2. Carvalho, Emanuel and Charles Scott. 1996. Local Economic Impact Analysis. Economic Development Bulletin, *New Series* Number Five. Economic Development Program, University of Waterloo.
3. Hemson Consulting, for Ontario Ministry of Agriculture Food and Rural Affairs. "Economic Impact Analysis Software Evaluation" Toronto: Queen's Printer for Ontario, June 2001.

4. Horton, Gary. *Economic Impact Analysis: Glossary of Selected Terminology Relating to Input-Output (I-O) Models and Economic Impact Analysis*. Nevada Division of Water Planning. 2002.
5. Michigan State University. "MITEIM Model, Michigan Tourism Economic Impact Model" [www.msu.edu/course/prr/840/econimpact/michigan/MITEIM.htm]. 2001.
6. Schaffer, William. Regional Impact Models. 1999 Regional Research Institute, WVU
7. Stynes, Daniel, J. "Economic Impacts of Tourism". http://www.msu.edu/course/prr/840/econimpact/pdf/ecimpvol1.pdf. 1999.

Benchmarking: IOWA STATE UNIVERSITY

KELOMPOK PAKAR:

PROF.DR. MARYUNANI, S.E., M.S.
PROF DR.IR. BUDI SETIAWAN, M.S.
Dr.Ir. Nuddin Harahap, MS
Dr.Ir Rini D. Astuti, MS.

26. PSL-526. DAMPAK SOSIAL BUDAYA DAN ANALISISNYA

What is Social Impact Assessment? . The History and Concepts behind the SIA Process. The social impact assessment model and the planning process. Steps in the preliminary social assessment (scoping). Obtaining information to measure SIA variables and delineating project settings. Understanding and measuring social impact variables - PART I: population impacts. Understanding and Measuring Social Impact Variables - PART II: COMMUNITY and institutional arrangements. Part III: communities in transition. Understanding and measuring social impact variables - Part IV: INDIVIDUAL and FAMILY LEVEL IMPACTS . UNDERSTANDING and measuring social impact variables - PART V: community infrastructure needs. Putting it Todether: Selecting, TESTING and understanding significant social impacts. MITIGATION and ENHANCEMENT in Social Assessment.

Referensi:

1. Rabel Burdge, "The Social Impact Assessment Model and the Planning Process," pp. 31-52, in Rabel Burdge, A Conceptual Approach to SocialImpact Assessment, 1998
2. Naila Kabeer, Chapter 10, "Triple Roles, Gender Roles, Social Relations: The Political Subtext of Gender Training Frameworks," pp. 264- 305 in Reversed Realities Hierarchies in Development Thought,
3. Alan Porter, Frederick Rossini and Stanley Carpernter, "Analysis of Social and Psychological Impacts," pp. 294- 328, in A Guidebook for Technology Assessment and Impact Analysis, 1980
4. Edwards, Allan D. and Dorothy G. Jones. 1976. Community and Community Development. Chapter 3: "Community: Demographic and Ecological Perspectives," pp. 97-136. The Hague, Netherlands: Mouton & Company.
5. Renkow, Mitch. 2004. "Population, Employment and Mobility in the Rural South," SRDC Policy Series. Mississippi State, MS: Southern Rural Development Center. http://srdc.msstate.edu/publications/srdcpolicy/renkow.pdf
6. Hyman, Drew, Larry Gamm, and John Shingler. 1995. "Paradigm Gridlock and the Two Faces of Technology," pp. 85-107 in Lionel J. Beaulieu and David Mulkey (eds.) Investing in People: The Human Capital Needs of Rural America. Boulder, CO: Westview Press, Inc.
7. Rzayeva, Sara, David L. Brown, and Laszlo Kulcsar. 2005. "An Overview of Social Impact Assessment." Unpublished. Ithaca, NY: Cornell University, Department of Development Sociology; and Freudenberg, W. (1986) "Social Impact Assessment." Annual Review of Sociology 12:451-478
8. Hunter, Lori M., Richard S. Krannich and Michael D. Smith. 2002. "Rural Migration, Rapid Growth, and Fear of Crime," Rural Sociology 67 (1):71-89.
9. Youngkin, Dale, Laura Dawood, Lori Kennedy, and Bryan Davis. 2003. "The place of social impacts in the iterative assessment process: a case study of a highway project in the US State of

Georgia," Impact Assessment and Project Appraisal, Vol. 21, No. 3, pp. 173-177. Surrey, UK; Beech Tree Publishing.

10 Becker, D.R., C.C. Harris, W.J. McLaughlin and E.A. Nielsen. 2003. A Participatory Approach to Social Impact Assessment: The Interactive Community Forum. Environmental Impact Assessment Review, 23 (4):367-382.

11 Buchan, Dianne. 2003. "Buy-in and social capital: by-products of social impact assessment." Impact Assessment and Project Appraisal, Vol. 21, No. 3, pp. 168-172. Surrey, UK: Beech Tree Publishing.

Benchmarking: Clemson University

KELOMPOK PAKAR:

27. PSL-527 DEGRADASI SULBERDAYA ALAM DAN PENCEMARAN LINGKUNGAN

Pokok bahasan meliputi: Fundamental Concepts and Principles and a review of how the environment works; the flow of energy through food webs and the movement of materials in the ecosystem, law of tolerance, law of the minimum, and other related concepts and principles.

Water resources: The role of water in the environment, human uses of water, water supply and availability and importance of and threats to ground water reserves.

Lakes, Coastal and Marine Waters. The lecture focuses on surface water pollution, their causes and consequences, management strategies with special focus on selected lakes, coastal areas and the Indonesia Ocean.

Solid and Hazardous Wastes. This lecture is a presentation of the nature, properties and sources of solid wastes and toxic chemicals, the requirements of their safe disposal and the factors that cause disposal problems to remain unresolved.

Air Pollution: air pollution sources, effects on human health and other species, and possible long-term impact on climate. Indoor air pollution will be an interesting sub-topic.

Deforestation: the causes and consequences of large-scale removal of forest cover in the region. Mitigating measures as applied by different countries will be presented.

Biodiversity Loss: the richness of the flora and fauna in Asia and the Pacific and the imperatives for their conservation-especially the important genetic resources, i.e. wildlife.

Food Resources and Hunger: the efforts, the resources and the constraints in feeding the growing human populations.

Land Degradation: The soil and how it is being ruined by erosion, water logging, salinization and application of farm chemicals. Special attention is given to soil that is acknowledged to be of poor quality than elsewhere in the world.

Causes of Environmental Degradation: The various factors said to be the causes for environmental degradation in the region: rapid population growth, poverty, economic growth, and institutional and policy failures. The validity of each argument will be examined during the discussions.

Costs of Environmental Degradation: the economic and the non-economic costs of environmental degradation in Indonesia region.

KELOMPOK PAKAR:

Referensi:

1. Bailey, R.G. 1998. Ecoregions: the Ecosystem Geography of the Oceans and Continents. Spring, NY. 176 pp.
2. Barrow, C.J. 1991. Land Degradation: Development and Breakdown of Terrestrial Environments. Cambridge Univ. Press. 295 pp.
3. Chapin, F.S. III, P.A. Matson, and H.A. Mooney. 2002. Principles of Terrestrial Ecosystem Ecology. Springer, N.Y. 436 pp.

5. FAO, 1996. Assessment of status of human-induced soil degradation in southeast Asia (Assod):Process report in proceeding of the expert consultation of the Asian network on problem soils. Manila Philipines,23-27 October,1975 : 39p
6. FAO, 1994 . Land degradation in South Asia :Its severity, Causes and effect upon the people world soil resources reports No.78.ISSN 0532-0488:102p
7. FAO, 1994. The collection any Analysis of land degradation data , Report of the expert consultation of the Asian network on problem soils. Bangkok, Thailand ,25-29 October 1993:261p
8. Nyle C. Brady, 2001. Natural and properties of soils. 10th edition. Prentice – hall of India, Private Limited, New Delhi - 11001: 621p.
9. Schlesinger, W.H. 1997. Biogeochemistry: an Analysis of Global Change (2nd ed.). Academic Press, NY. 588 pp.

Benchmarking: Mahidol University International College, Faculty of Science, Faculty of Environment and Resource Studies, Mahidol University

28. PSL-528 EKOWISATA

Course will introduce students to the history, concepts, principles, marketing, planning and management of ecotourism activities and development which promote cultural and environmental awareness and local economic benefits with an emphasis on non-western cultures.

Knowledge of current trends in ecotourism; the importance of the local ecology, culture, history and economic development balanced with a social responsibility; identification of ecotourism markets. Awareness of conserving natural resources and maintaining the integrity of the indigenous culture. Development of a feasibility study for potential ecotourism projects; Knowledge of tour planning and site development.

Ecotourism: A Short Descriptive Exploration; Tourism, Parks, and Recreation: The New Alliance; Is Ecotourism Eco-friendly?; Ecotourism and Minimum Impact Policy; A Framework for Ecotourism" "Ecotourism in the Third World: Problems for sustainable development; Ecotourism A Sustainable Option?; Ecotourism and Natural Resource Protection: Implications of an Alternative Form of Tourism for Host Nations; Nature tourism: impacts and management; Paying the Price of Ecotourism; Ecotourism: A status report and conceptual framework; Towards a more desirable form of ecotourism; Ecotourism: Reworking the Concepts of Supply and Demand ; Marketing Protected Areas for Ecotourism: An Oxymoron?; Community Ecotourism.

KELOMPOK PAKAR:

Referensi:

1. Andersen, D.L. (1994). "Developing Ecotourism Destinations: Conservation From the Beginning" in Trends (31:2).
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5. Blane, J M. and R. Jaakson. (1994). "The Impact of Ecotourism Boats on the St. Lawrence Beluga Whales" in Environmental Conservation (21:3).
6. Blangy, S. & Nielsen, T. (1994). "Ecotourism and Minimum Impact Policy" in Annals of Tourism Research (20:2): 357-360.
7. Boo, Elizabeth. Ecotourism: The Potentials and Pitfalls, Vol 1.World Wildlife Fund. 1990.
8. Boyd, S.W., R.W. Butler and A. Perera. (1994). "Identifying Areas for Ecotourism in Northern Ontario: Application of a Geographical Information System Methodology in Journal of Applied Recreation Research (19:1).
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11. Cater, E. (1994). "Ecotourism in the Third World: Problems for sustainable development" in Tourism Management, April (14:2).
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15. Norris, R. (1994). "Ecotourism in the National Parks of Latin America" in National Parks, January (68: 1 / 2)
16. Orams, M.B. (1995). "Towards a more desirable form of ecotourism" in Tourism Management, February (6:1)
17. Seidl, A. (1994). "Ecotourism: Reworking the Concepts of Supply and Demand" in Trends (31:2).
18. Weaver, D. (2008). *Ecotourism (2nd ed)*. Milton, Queensland, Australia: John Wiley & Sons Australia, Ltd. ISBN: 978-0-470-81304-1

Benchmarking: Northern Arizona University

29. PSL-529. EKOLOGI INDUSTRI

The focus of industrial ecology is on the material and energy cycles that sustain our living “industrial ecosystems.” These material and energy flows are primarily studied using the methods of life-cycle analysis. We will complete group projects in this class using the ideas of industrial ecology to study the overall environmental effects of emerging technologies and concepts that promise to change the industrial ecosystem to one that is more sustainable. The flows of materials and energy in industrial and consumer activities, of the effects of these flows on the environment, and of the influences of economic, political, regulatory, and social factors on the flow, use and transformation of resources. The objective of industrial ecology is to understand better how we can integrate environmental concerns into our economic activities.”

The life-cycle benefits of the wide scale adoption of a new technology or industrial ecology concept, ideas are not limited to the ideas below. This life-cycle analysis will include three stages of the technology’s life cycle: manufacturing from raw materials, use of the product, and disposal of the product. If it is a concept, then the analysis will have to include every part of the cycle, and how it is or can be a “closed loop”. By attempting to quantify the inputs, outputs and efficiencies in all three stages of the product’s life, we gain a “systems” or “ecology” perspective of the product. The framework for this study will be a scenario of adoption, to be chosen by the students, which will allow us to

compare the new technology to a currently used technology in order to determine the net environmental benefits.

Biodiesel: Biodiesel is refined vegetable oil that can be used in place of normal diesel for heavy trucks, automobiles, and busses. The oils can be recycled frying oils from restaurants, oils from plants grown expressly for the purpose of biodiesel, or even possibly from algae grown on human wastewater. This technology has the possibility of reducing petroleum use and reducing the production of cancer causing pollutants.

Fuel Cells: Fuel cells produce electricity by combining fuel with oxygen through chemical conversion rather than combustion. This allows fuel cells to be very efficient. Fuel cells are envisioned as the future of energy producing technology and are expected to form the backbone of the coming "hydrogen economy." Fuel cells are being developed for applications ranging from mobile phones to automobiles to power plants.

The Lifecycle of Recycled Materials: What happens to the waste that we recycle? How far does it travel, how much energy does it take to recycle it, and ship it? How does sending recyclables to other countries effect those economies? What are the alternatives? For example, the US is shipping mass amounts of scrap steel to China, we could examine this situation by answering this question. It would be interesting to complete a lifecycle analysis for these materials and propose alternatives.

Industrial Ecology in the Market: How could the idea of a "closed loop" system be applied to different industries? Some ideas: **Apparel.** Patagonia is a company working towards sustainability, Nike uses a some organic cotton. How could clothing and fabric manufacturers create a closed loop? What would the lifecycle analysis look like?

KELOMPOK PAKAR:

Referensi:

1. Benyus, J. M. Biomimicry: Innovation Inspired by Nature Quill: New York, 1998.
2. Cincinnati J. 1993. Life Cycle Assessment: Inventory Guidelines and Principles (EPA 600/R-92/245). : U.S.EPA, Office of Research and Development, Risk Reduction Engineering Laboratory, February 1993.
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4. Hawken, P., Lovins, A. and Lovins, L.H. Natural Capitalism: Creating the Next Industrial Revolution, Little, Brown and Company: Boston, 1999.
5. Keoleian, G., Koch, J., Menerey, D. and Bulkley, J. Cincinnati. 1995. Life Cycle Design Framework and Demonstration Projects: Profiles of AT&T and Allied Signal (EPA/600/R-95/107). U.S.EPA, Office of Research and Development, National Risk Management Research Laboratory, July 1995.
6. Mary Ann Curran . 1996. Environmental Life-Cycle Assessment Ed., McGraw-Hill, New York

7. Socolow, R. C. Andrews, F. Berkhout, and V. Thomas. 1994. Industrial Ecology and Global Change. Ed. Cambridge University Press, 1994.
8. The Journal of Industrial Ecology (http://mitpress.mit.edu/JIE or http://www.yale.edu/jie)
9. U.S. Congress . 1992. Green Products by Design: Choices for a Cleaner Environment (OTA-E-541) U.S. Congress, Office of Technology Assessment, 1992.

Benchmarking: YALE UNIVERSITY

30. PSL-530 EKOLOGI MANUSIA

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep dan teori Ekologi Manusia; (2). Menjelaskan kembali beberapa kaidah dan prinsip pendekatan ekologi manusia dalam pengelolaan SDA-LH; (3). Melakukan simulasi analisis pembangunan dengan menerapkan paradigma ekologi manusia.

Pokok bahasan meliputi: Pendekatan ekologi manusia dalam perencanaan dan pengelolaan lingkungan. Perspektif ekologi- ekonomi: Paradigma ko-evolusioner, Daya dukung lingkungan hidup, Substitusi vs Komplementer, Optimisme teknologi vs Skeptisisme, Kaidah kekekalan energi, Entalpi dan Entropi, Entropi dan ekonomi, Apa itu Produktivitas?, Apa itu Stabilitas, Apa itu sustainabilitas?. Interaksi Manusia – Lingkungan: Teori ekosistem, Teori-ekologi manusia, Teori sosio-teknologi, Teori ekologi budaya. Interaksi sosial dan dinamikanya: a. Stratifikasi, b. Teori interaksi sosial, a. Altruisme; Egoisme dan Genetic fitness. Ekonomi dan Sosio-biologi : a. Dinamika sosial, b. Perubahan sosial. Strategi Investasi: Green taxes, Gradual eco-zoning, Natural capital depletion taxes, Link between Human and natural capital, Polluter-pays principles, Ecological tariffs, Property right regime, Resources utility.

KELOMPOK PAKAR:

Referensi:

1. Diesendorf, M. and Hamilton, C. (eds.), Human Ecology, Human Economy. (Part 1). St Leonards, Allen and Unwin, 1997
2. Eckersley, R., (ed.), Measuring Progress: Is life getting better? Melbourne, CSIRO Publishing, 1998
3. Girardet, H., The Gaia Atlas of Cities: New directions for sustainable urban living, London, Gaia Books (revised edition), 1996
4. Gliessman, S.R., Agroecology: Ecological Processes in Sustainable Agriculture, Ann Arbour Press, 1997
5. Jordan, C.F., Working with Nature, Harwood Academic Publishers, 1998.
6. McMichael, A. J., Planetary Overload, Cambridge 1993

7. Moran, E. F. (2006). People and nature: An introduction to human ecological relations. Oxford: Blackwell Publishing.
8. White, R. (1991). Land use, environment, and social change: The shaping of Island County, Washington. Seattle: Univ. of Washington Press.
9. White, R., Urban Environmental Management: Environmental change and urban design, Brisbane, John Wiley and sons, 1994

Benchmarking: WESTERN WASHINGTON UNIVERSITY: HUXLEY COLLEGE OF THE ENVIRONMENT

31. PSL-531 EKOLOGI PANGAN DAN GIZI

Course content: Food, Ecology and Nutrition: Balanced diets, reliable food sources, clean drinking water, stable agricultural systems fed by predictable water flow, and plant pollinators all contribute to the stability and well-being of a populace's nutritional health. Caloric intake alone is not a sufficient indicator of an individual's or a society's nutritional status. Healthy populations require healthy environments and sufficient nutrients to meet basic dietary needs. Ecosystems Health and Monitoring : Healthy ecosystems are important to life on Earth. They provide priceless services such as air purification, water filtration and food production, and they support a tremendous diversity of plant and animal species.

Referensi:

1. Watts, Michael .J. 1987. Conjunctures and Crisis: Food, Ecology and Population, and the Internationalization of Capital. Journal of Geography, v86 n6 p292-99 Nov-Dec 1987.
2. ECOLOGY OF FOOD AND NUTRITION JOURNAL. ISSN: 1543-5237 (electronic) 0367-0244 (paper) . Publication Frequency: 6 issues per year . Subjects: Anthropology - Soc Sci; Food Chemistry; Publisher: Routledge.

Benchmarking: The Earth Institute, Columbia University.

Kelompok Pakar

32. PSL-532. EKONOMI SUMBERDAYA ALAM

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep ekologi-ekonomi dalam pemanfaatan & pengelolaan SDA, (2). Menjelaskan beberapa kaidah dan prinsip pendekatan ekonomi dan ekologi dalam pemanfaatan SDA, (3). Melakukan simulasi analisis eksternalitas pemanfataan SDA

Pokok bahasan meliputi: SDA-Pembangunan-LH. Sistem ekonomi Sumberdaya Alam: Produksi-Konsumsi-limbah: Pengertian; sifat dan dimensi, Potensi Sumberdaya Alam Indonesia, Masalah pengembangan sumberdaya alam, Perspektif ekonomi dan ekologi. Pendekatan-pendekatan dan teknik-teknik analisis: Pengambilan keputusan over time: interest rate; compounding; discounting; Property right dan penggunaan SDA, Ekonomi kesejahteraan dan peranan pemerintah, Private vs public goods, Kegagalan mekanisme pasar. Sumberdaya dapat-habis & Kelangkaan Sumberdaya: Optimal depletion, Measures of Scarcity. Sumberdaya Renewable: Model of optimal uses, Problematik common-properties. Penggunaan sumberdaya alam Non-renewable (SDA-NR): Barang tambang sebagai non-renewable resources, Teori ekstraksi barang tambang, Struktur pasar dan strategi penggunaan SDA-NR, Uncertainty, Pertumbuhan ekonomi dan SDA-NR. Eksternalitas dan Polusi/pencemaran lingkungan. Taksonomi eksternalitas: Publik vs privat; eksternalitas dalam konsumsi; eksternalitas dalam produksi; internalisasi eksternalitas. Alternatif pengendalian eksternalitas: Pajak vs subsidi , Pajak vs baku mutu / standar Standar vs fees/penalties Fees for emissions. Marketable permits in externalities control: Tatanan kelembagaan, Karakteristik sistem permits, The ambient based systems, The emission based system, The offset system, Cost of alternative permit system.

Kelompok Pakar:

Prof Dr Maryunani SE MS
Dr.Ir. Nuddin Harahap, MS
Dr. Ir Rini Dwi Astuti MS
Dr.Ir Rispiningtati, M.S.
Prof.Dr.Ir. M. Muslich Mustajab, M.Sc.

Referensi:

1) Boggess, W., R. Lacewell, and D. Zilberman. Economics of Water Use in Agriculture. 1993." In *Agricultural and Environmental Resource Economics,* G.A. Carlson, D. Zilberman, and J.A. Miranowski (Eds.), New York: Oxford University Press.
2) Hanley, N. J.F. Shogren, and B. White. 2007. *Environmental Economics: In Theory and Practice.*Second edition. New York: Oxford University Press.
3) Hanley, N., J.F. Shogren, and B. White. 1997. *Environmental Economics: In Theory and Practice.* New York: Oxford University Press.
4) Hartwick, J.M., and N.D. Olewiler. 1998. *The Economics of Natural Resource Use.* 2nd Edition, Massachusetts: Addison-Wesley.

5) Howitt, Richard. 1994. “Water Markets, Individual Incentives and Environmental Goals.” *Choice* (First Quarter 1994):5-9.
6) McInerney, J. 1981. Natural Resource Economics: the Basic Analytical Principle.” In John A. Butlin (ed.), *The Economics of Environmental and Natural Resource Policy*.
7) Perman, R., Y. Ma, and J. McGilvray. 1996. *Natural Resource and Environmental Economics.* London: Longman.
8) Rosegrant, M.W. 1997. Water Resources in the Twenty-First Century: Challenges and Implications for Actions.” Food, Agriculture, and the Environment Discussion Paper 20, IFPRI, March 1997.
9) Solow, Robert M. 2000. “Sustainability: An Economist’s Perspective.” In *Economics of theEnvironment: Selected Readings*. 4th Edition. Ed. R. N. Stavins. NewYork:Norton & Company.
10) Sterner. 2002. Policy Instruments for Environmental and Natural Resource Management. RFF and World Bank.

Benchmarking: OREGON STATE UNIVERSITY

33. PSL-533. EKOSISTEM: VALUASI BARANG DAN JASA

The goals of this course are to provide an overview of the concepts and methods related to the analysis of ecosystem function and structure. The emphasis of this course will be on key ecological concepts relating to communities and ecosystems and the application of scientific methods to field research and whole ecosystem analysis.

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1) memahami konsep-konsep ekologi dan ekosistem; (2) menjelaskan kembali beberapa kaidah dan prinsip pendekatan sistem dalam fenomena ekologi; (3) melakukan analisis ekologis dalam permasalahan LH; dan (4). Menjelaskan beberapa konsep dan instrumen analisis dalam kajian ekosistem.

Pokok bahasan meliputi: Pendahuluan: Filosofi dan konsep ekosistem dalam kajian SDA-LH; Sistem Ekologi ; Ekologi dan ekosistem, Materi, energi dan informasi. Sistem Ekologi: Interaksi populasi, Habitat dan tempat hidup, Adaptasi dan evolusi. Teknik dan metode analisis ekosistem: Ekologi kuantitatif, Kompetisi, eksploitasi. Sistem Lingkungan hidup: Arti dan makna lingkungan hidup sebagai suatu sistem, Kualitas lingkungan, Lingkungan hidup sebagai sumberdaya, Kebutuhan dasar manusia, Interaksi manusia-lingkungannya, Neraca materi dan energi, Manfaat dan risiko lingkungan. Penerapan Konsep Ekosistem dalam Pengelolaan Pertanian: Agro-ekosistem: Productivity, Stability, Sustainability, Equity; b. Farming Systems. Penerapan Konsep Ekosistem dalam Pengelolaan Perikanan: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Peternakan: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Hutan: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Pertambangan: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Permukiman (URBAN): Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop. Penerapan Konsep Ekosistem dalam Pengelolaan Lingkungan Industri: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O, Feed-back loop

Referensi:

1. Deaton, M.L. and Winebrake, J. 1999. Dynamic modeling of environmental systems. Springer, New York. 194 pp.
2. Halfon, E. 1979. Theoretical systems ecology: advances and case studies. Academic Press, New York. 516 pp.
3. Hansen, P.E. and Jorgensen, S.E. 1991. Introduction to environmental management. Elsevier, Amsterdam. 403 pp.
4. Holling, C.S. 2001. Understanding the complexity of economic, ecological, and social systems. **Ecosystem**, 4, pp. 390- 405.

5. Jorgensen, S.E. and Muller, F. 2001. Handbook of **ecosystem** theories and management. Lewis Publishers, London. 584 pp.
6. McGlade, J. 1999. Advanced ecological theory: principles and applications. Blackwell Science Ltd., London. 354 pp.
7. Odum, H. T. 1983. Systems ecology. John Wiley & Sons, New York.
8. Muller, F. 1997. State of the art in **ecosystem** theory. Ecological modelling, 100, p 135-161.
9. Odum, H.T. and Odum E.C. 2000. Modeling for all scales: an introduction to system simulation. Academic Press, London. 458 pp.
10. White, I. D., Mottershead, D. N., Harrison, S. J. 1984. Environmental systems: an introductory text. Allen & Unwin, London. 495 pp.

Benchmarking: THE UNIVERSITY OF VERMONT.

Kelompok Pakar:

34. PSL-534. EMERGENCY SYSTEM

Course Objectives: Accidents and emergency situations have plagued man since the beginning of history and will undoubtedly occur during our conceivable future. Armed with knowledge and skills for managing such occurrences can lessen their impacts on society. This course presents the theories, principles, and approaches to emergency management. The philosophy of Comprehensive Emergency Management will be discussed with the four attendant steps which include mitigation, preparedness, response, and recovery. An analysis of past disasters will be presented along with their impacts on policy formation leading up to the current FEMA all-hazards approach. The role, duties, and importance of the Emergency Manager will be discussed throughout the semester. Finally, legal issues involving emergency management will be presented.

COURSE CONTENT: Introduction to Emergency Management; The Function and Evolution of Emergency Management; Organizing and Planning in Emergency Management; Governmental Roles in Emergency Management; Earthquakes and Volcanoes; Hurricanes and Floods; Tornadoes & Wildfires; Hazardous Materials Incidents; Disaster Mitigation and Hazard Management; Air Disasters; Oral Presentations; Planning, Training, and Exercising; Structural Failures; Oral Presentations; Managing Disaster Response Operations; Public Health Emergencies; Oral Presentations; All-Hazards Programs; Recovery from Disaster; Legal Aspects of Emergency Management.

Referensi:

1. Platt, R. H. (1999). Disasters and Democracy. Washington, D.C.: Island Press.

2. FEMA (1998). The Emergency Program Manager. Washington, D.C.: Government Publishing.
3. Waugh, William & Hy, Ronald. (1990). Handbook of Emer gency Management. Westport, CT: The Greenwood Press.
4. Kaplan, Laura G. (1996). Emergency and Disaster Planning Manual. New York: McGraw-Hill.
5. Henry W. Fischer, III-2 nd ed. (1998). Response to disaster; Fact versus Fiction and its perpetuation, The Sociology of Disaster.

Benchmarking: Arizona State University.

Kelompok Pakar:

35. PSL-535 ENVIRONMENTAL MANAGEMENT SYSTEM (EMS).

The objective of the course is for you to be able to design environmental management strategies that reduce environmental impacts, optimize resource use, promote waste reduction and recycling, prevent pollution, and involve public stakeholders, leading to superior environmental and bottom-line performance. The course includes guest speakers, class exercises, role playing, and a student group project—EMS planning for our case study firm.
Pokok bahasan meliputi: Introduction and course overview. Policy background of EMS: UULH dan peraturan perundangan yang berlaku di Indonesia. Environmental management systems overview: ISO 14000 and other EMS frameworks; EMS elements. Management Practice & the Environment; Toward a Sustainable Society. Introduction to ISO 14001 & Other Environmental Management Systems. ISO 14001: Implementation and Operation. ISO 14000 Guidelines. EMS auditing, and certification. Environmental Aspects I: air pollution. Environmental Aspects II: surface water pollution. Environmental Aspects III: land use, groundwater and solid waste. Regulatory processes: Clean Air Act, Clean Water Act, and EPA (AMDAL). Green Engineering I: life cycle issues. Management I: EMS impact on operations – quality, capacity, and supply-chain management. Management II: EMS impact on marketing and finance. Implementing EMS in practice. EMS and Occupational and Public Health & Safety. Putting the Pieces Together: EMS, strategic planning, management integration, and planned organization change.

Referensi:

1. Principles of Environmental Management; The Greening of Business; by Rogene A. Buchholz; Second Edition, Prentice Hall, 1998 (Required).
2. ISO 14001 Implementation Manual; by Gayle Woodside, Patrick Aurrichio, and Jeanne Yturri; McGraw Hill, 1998.

3. Ibbotson, Brett, and John-David Phyper, eds. 1996. *Environmental Management in Canada*. Toronto: McGraw-Hill Ryerson Limited.
4. Welford, Richard. 1996. *Environmental Strategy and Sustainable Development: The Corporate Challenge for the Twenty-First Century*. New York: Routledge.
5. Juran, J.M, "Quality Control Handbook", McGraw Hill, 1988
6. Menon, H.G., " TQM in New Product Manufacturing", McGraw Hills, 1992
7. Soin, S.S., "Total Quality Control Essentials", McGraw Hill, 1992
8. King, B., "Better Designs in Half the Time", GOAL/QPC, 1989
9. Phadke, M.S., "Quality Engineering Using Robust Design", Prentice Hall, 19892.
10. ISO 9001 Quality System Standards
11. ISO 14001 Environmental Management System.

Benchmarking: University of New Orleans; Environmental Management.

KELOMPOK PAKAR:

36. PSL-536. ENVIRONMENTAL LABELING

This course is aimed to provide students with the recent global trends and significance of environmental design and green manufacture in industry; ensure that students are aware of the regulatory requirements of European Union (EU), China, USA, Japan, and other regions on Green design and manufacture; provide students with a holistic approach to green design and manufacture, and to address issues such as: environmental impact; product design, use, and life; technology capabilities; and business benefits; enable students to contribute to society by reducing environmental impact throughout the complete product life cycle by better product design and use.

Course content: Environmental labeling programs and environmental certification schemes are two tools that have been used to promote environmental responsibility within industry. They are largely voluntary programs that provide consumers with environmental information. By enabling environmental criteria to be considered during purchasing decisions, labeling and certification programs help consumers to "vote through the marketplace" for more environmentally responsible products. Some proponents suggest that these voluntary systems may obviate the need for some environmental regulations. Indeed, many governments are considering restructuring their environmental regulation regimes around these voluntary programs. Environmental labeling: The ISO (International Organization for Standardization) has developed standards for the following three types of environmental labeling programs.

Referensi:

1. Davis M.L. and Masten S.J., Principles of Environmental Engineering and Science, McGraw-Hill, 2004.
2. Ulrich K.T. and Eppinger S.D., Product Design and Development, McGraw-Hill, 2003.
3. J. Rodrigo, Electrical and Electronic: Practical Design Guide, F. Castells University Rovira I Virgili, Tarragona, Spain, 2002.
4. H. Lewis and J. Gertsakis, Design + Environment: A Global Guide to Design Greener Goods, Greenleaf Publishing Ltd, 2001.

Benchmarking:

WORLD WIDE WEB HOME PAGE ADRESS:
http//**www.gen.gr.jp**

Kelompok Pakar:

37. PSL-537. ANALISIS KETAHANAN LINGKUNGAN

What is an environmental security issue? How does the environment constitute a security threat? After providing a historically grounded introduction to the concept of environmental security, this research seminar will explore the ways in which environmental degradation and natural resource competition can lead to different forms of international contention, including intergroup conflict, civil wars, and interstate violence. It will also assess critiques of the environmental security approach. Theories of environmental conflict will be applied to various contemporary environmental security concerns, including climate change, water politics, "resource wars" and environmental refugees.

Introduction

- Robert Kaplan (1994) "The Coming Anarchy," Foreign Affairs.
- Michael Klare (2001) "The New Geography of Conflict," Foreign Affairs 80(3).

A New Security Threat?

- Barry Buzan (1991) People, States and Fear, second edition. New York: Harvester.
- Richard H. Ullman (1983) "Redefining Security," International Security, 8(1).
- Jessica Tuchman Mathews (1989) "Redefining Security," Foreign Affairs 68(2).
- Peter Gleick (1991) "Environment and Security: the Clear Connections," Bulletin of the Atomic Scientists, pp. 17-21
- Lothar Brock (1991) "Peace through Parks: the Environment on the Peace Research Agenda," Journal of Peace Research, 28(4): 407-423.

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Resistance

- Daniel Deudney (1990) "The Case Against Linking Environmental Degradation and National Security," Millenium 19(3): 461-476.
- Marc Levy (1995) "Is the Environment a National Security Issue?" International Security, 20(2): 35-62.
- Simon Dalby (1999) "Threats from the South? Geopolitics, Equity, and Environmental Security," in Deudney and Matthew, eds., Contested Grounds. pp. 155-186 [in polycopié]
- Jon Barnett (2001) "Environmental Insecurity" and "Environmental Security for People," Zed Books: London, pp. 12-22, 122-138.]
- Ole Waever (1995) "Securitization and Desecuritization," in Ronnie Lipshutz, ed. On Security. New York: Columbia University Press, pp.1-14, 21-28.

Environmental Conflict

- Thomas Homer-Dixon (1991) "On the Threshold: Environmental Changes as Causes of Acute Conflict," International Security 16: 76–116.
- Thomas Homer-Dixon (1994) "Environmental Scarcities and Violent Conflict: Evidence from Cases," International Security 19(1): 5-40.
- Stephan Libiszewski (1992) "What is an Environmental Conflict?" Environment and Conflicts Project: ENCOP Occasional Papers. Centre for Security Studies, ETH Zurich/Swiss Peace Foundation, Zurich/Berne. pp. 1-7.
- Gunther Bächler (1998) "Why Environmental Conflict Causes Violence: a Synthesis," Environmental Change and Security Project Report, Issue 4, pp. 24-44.
- Kurt M. Lietzmann and Gary D. Vest (1999) "Environment and Security in an International Context: Executive Summary Report," Environmental Change and Security Project Report, Issue 5, pp. 34-48.
- Daniel Esty, et. al. (1999) "State Failure Task Force Report: Phase II Findings," Environmental Change and Security Project Report, Issue 5, pp. 49-68.

Critics

- Nils Petter Gleditsch (1998) "Armed Conflict and the Environment: a Critique of the Literature," Journal of Peace Research 35(3).
- Christopher T. Timura (2001) "'Environmental Conflict' and the Social Life of Environmental Security Discourse," Anthropological Quarterly 74(3): 104-113.
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Water Cooperation

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Benchmarking:
GRADUATE INSTITUTE OF INTERNATIONAL AND DEVELOPMENT STUDIES SWITZERLAND - TEL +41 (0)22 908 57 00 - http://graduateinstitute.ch

38. PSL-538 EPIDEMIOLOGI LINGKUNGAN

Tujuan Mata kuliah ini: to give students an understanding of the main themes in environmental epidemiology, with particular emphasis on methods of investigation, including those of time-series and spatial analysis. It covers pollution of the air, water and land, of ionizing and non-ionizing radiation, and the investigation of disease clusters. Emphasis is given to critical interpretation of scientific evidence relating to potential environmental hazards to health.

Pokok bahasan: the uses of epidemiology and appreciate the issues to be considered before undertaking an epidemiological study; the use of measures of disease frequency (prevalence and incidence), measures of effect (e.g. rate/risk ratios and rate/risk differences) and measures of public health impact (e.g. population attributable risk fraction); The principles and relative merits of different study designs and be aware of the main analytic methods available; The uses, strengths and limitations of routine data sources in both developed and developing countries; The concepts and implications of sampling error, bias and confounding in epidemiological studies and be aware of the strategies available to deal with them; The concepts of misclassification and validity of disease and exposure measurements, and appreciate the principles and practice of disease screening; The issues that need to be considered when judging whether there is a causal link between exposure and disease; The critical evaluation of the results and interpretations of published epidemiological studies; choice of study design appropriate to address particular epidemiological questions.

Referensi:

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Benchmarking: WASHINGTON STATE UNIVERSITY
Department of Environmental Health

39. PSL-539 EVALUASI KEBIJAKAN LINGKUNGAN

Upon completion of this course, you will be able to: Articulate the role and responsibilities of the policy scientist/ analyst in advancing knowledge and practice in environmental and natural resource decision-making. Differentiate among methods used to synthesize knowledge, forecast results, analyze programs, and evaluate outcomes of environmental and natural resource policies. Critically analyze various natural resource and environmental policy analyses. Identify and carry out key aspects of a policy analysis study including preparation and presentation of an analysis of a natural resource or environmental policy or program.

Course content: Introduction to Policy Analysis: Process & Participants ; Political Environment for Policy Analysis ; Role of the Policy Analyst; Analysis Overview ; Define the Problem Construct Policy Alternatives; Data Collection Overview ; Focus Groups and Nominal Group Design; Interviews, Observations and Other Methods ; Mail Surveys and the Delphi technique; Benefit Transfer ; Ecosystem Valuation ; Evaluation Criteria; Sampling and Data Quality ; Data Analysis; Comparing alternatives ; Presenting Analysis Results; Policy Analysis Presentations; Policy Analysis Presentations.

Referensi:

1. Cohen, Steven (2006) Understanding Environmental Policy. New York: Columbia University Press.
2. Drysek, John S. (1997) The Politics of the Earth: Environmental Discourses. (New York: Oxford University Press).
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4. Field, Barry C. (2007) Environmental Policy: an Introduction. Long Grove, IL: Waveland Press.
5. Lutter, Randall and Jason Shogren (eds) (2004) Painting the White House Green. Washington, DC: Resources for the Future Press.

Benchmarking: School of Planning, College of Design, Architecture, Art, and Planning; University of Cincinnati

40. PSL-540 KESEHATAN LINGKUNGAN & MASYARAKAT

Upon completion of this course, you will be able to: Define the major sources and types of environmental agents; Discuss the transport and fate of these agents in the environment; Identify the carriers or vectors that promote the transfer of these agents from the environment to the human; Describe how these agents interact with biological systems, and the mechanisms by which they exert adverse health effects; Explain and use models for prediction of the magnitude of adverse effects in biological systems; Identify and define the steps in the risk-assessment and risk-management processes; Identify significant gaps in the current knowledge base concerning the health effects of environmental agents and identify areas of uncertainty in the risk-assessment process.

Bahan Kajian :

Human impact on the environment ; Environment-human interaction ; Environmental impact on humans ; Exposure, dose, response ; Environmental toxicology ; Environmental carcinogenesis ; Risk assessment and management ; Indoor and outdoor air pollution ; Environmental health economics and policy ; Occupational health ; Food- and water-borne disease ; Municipal, industrial, and hazardous waste ; Environmental justice and policy ; Risk communication.

Sanitation: Dwellers sanitation; Code of practice for adequate environmental facilities in a infrastructure- Building: Space, lighting, air movement and circulation, temperature control, plumbing facilities, ventilation and air conditioning Principles of excreta disposal, water borne and water sanitation related diseases; Different sanitation options; Sanitation practices in Bangladesh

Solid Waste Management: Sources and characteristics of Solid waste; Solid waste generation; Collection and transportation (Community and Municipality); Volume reduction; sorting; Stabilization; Incineration; Resource recovery and recycling; Land filling; Composting; General aspects of solid waste management; Community mobilization in solid waste management; Milk and food sanitation; Hospital sanitation.

Environmental Health: Disease description, mode of transmission of diseases, clean water, sanitation, health, nutrition, application of engineering principles to the control of communicable diseases; Vectors control; Insecticides and bactericides, occupational health;

***Hygiene Education and Community Participation*:** Scope and methodology for hygiene education; Development of hygiene education program; Social mobilization in hygiene education; Participatory management and planning in WSS, Gender aspects in WSS, Cost recovery and sustainability of water supply and sanitation services.

Referensi:

1. Blumenthal, D. S., and Ruttenber, A. J. (1995). *Introduction to environmental health.* Second Edition. New York: Springer.
2. Lippmann, M. (Ed.). (1992). *Environmental toxicants: Human exposures and their health effects.* New York: Van Nostrand Reinhold.
3. Moeller, D. W. (1997). *Environmental health* (Revised ed.). Cambridge: Harvard University Press.
4. Moore, G. S. (1999). *Living with the earth: Concepts in environmental health science.* Boca Raton: Lewis Publishers.
5. Nadakavukaren, A. (2000). *Our global environment: A health perspective* (5th ed.) Prospect Heights: Waveland Press, Inc.
6. Philp, R. B. (1995). *Environmental hazards and human health.* Boca Raton: Lewis Publishers.
7. Yassi, A., Kjellstrom, T., de Kok, T., Guidotti, T. L. (2001). *Basic environmental health.* New York: Oxford University Press.

Benchmarking: Johns Hopkins University

KELOMPOK PAKAR:

41. PSL-541. KONSERVASI DAN KETAHANAN LINGKUNGAN

Course content: Natural Resource Conservation and Management: Past, Present and Future; Economics, Ethics, and Critical Thinking: Tools for Creating a Sustainable Future; Lessons from Ecology; The Human Population Challenge; World Hunger: Solving the Problem Sustainably; The Nature of Soils; Soil Conservation and Sustainable Agriculture; Integrated Pest Management; Aquatic Environments; Managing Water Resources Sustainability; Water Pollution; Fisheries Conservation; Land Management; Forest Management; Plant and Animal Extinction; Wildlife Management; Sustainable Waste Management; Air Pollution; Pollution: Global Problems; Minerals, Mining, and a Sustainable Societ; Nonrenewable Energy Resources: Issues and Options.

Referensi:

1. Daniel D. Chiras, John P. Reganold, & Oliver S. Owen. 9th Edition *Natural Resource Conservation: Management for a Sustainable Future* . Prentice Hall Publisher . ISBN: 0-13-145832-9
2. Cutter, S. and W. Renwick. 2004. Exploitation, **Conservation**, Preservation: A Geographic Perspective on **Natural** Resource Use. Wiley & Sons. 4th Edition

3. Sterner. 2002. Policy Instruments for Environmental and Natural Resource Management. RFF and World Bank.
4. Rasband and Garrett, 2007. A New Era in Public Land Policy: The Shift Toward Reacquisition of Land and Natural Resources, Rocky Mountain Mineral Law Institute, Vol. 53 (2007) (PP.1-35); Matter of Smith v. Town of Mendon, 4 N.Y. 3d 1
5. Soulé M. E. and B. A. Wilcox. 1980. Conservation Biology: An Evolutionary-Ecological Perspective. Sinauer Associatess. Sunderland, Massachusetts.
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7. Hunter, M. L. (1996). Fundamentals of Conservation Biology. Blackwell Science Inc., Cambridge, Massachusetts., ISBN 0-86542-371-7.
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9. van Dyke, Fred (2008). *Conservation Biology: Foundations, Concepts, Applications, 2nd ed.*. Springer Verlag. pp. 478. ISBN 978-1-4020-6890-4 (hc).

Benchmarking: University of Texas at Brownsville (UTB)

Kelompok Pakar:

42. PSL-542. KUALITAS & KENYAMANAN LINGKUNGAN

Kriteria penilaian kualitas lingkungan : dirancang untuk memahami tentang teknis-teknis analisis kimia, fisik dan biologis, termasuk pemanfaatan berbagai macam indikator biologis. Memahami data/informasi standar serta analisis statistika yang lazim. Memahami tentang teknis-teknis analisis untuk aspek sosial ekonomis, sosial budaya dan kesehatan sesuai dengan kelaziman pada aspek tersebut. Memahami interpretasi data dan teknik pelaporan dalam suatu studi kasus tertentu.

Air Quality: Characteristics & Sources of Air Pollutant, Air Quality Standard, Air Quality monitoring: Sampling of ambient air, air quality monitoring system, stack sampling, continuous emission monitoring, remote sensing for air monitoring and analysis;

Soil Quality: Introduction; Physical properties of soil: Soil texture, Physical nature of soil separates, mineralogical and chemical composition of soil, Soil textural class, structure of mineral soils: Sources of soil organic matters, Influence of soil organic matter on soil properties; Effects of fertilizers, pesticides etc. on soil; Origin, nature and classification of soil parent material; Soil micro animals; Characteristics of saline and sodic soil; Peat soils.

Water and Wastewater Quality: (a) Physical characteristics and quality of water and wastewater; (b) Chemical quality and characteristics of water and

water; (c) Microbiology of Water and wastewater: Introduction, Microbes, virus, Bacteria, Fungi, Protozoa, Algae and Cyanobacteria and Other Microorganisms (rotifers, helminthes, crustaceans, worms etc), (d) Microbial characteristics and quality of water and wastewater, (e) BOD (definition, equation and sag curve), COD, DO, ThOD, TKN, PKN etc, (f) Water Quality Standard: Bases, WHO Guidelines, Bangladesh water quality standard, (g) Test and Analysis for Water Quality, (h) Water Quality Monitoring: Bio monitoring, Chemical versus biological pollution monitoring, plant bioassay, fish bioassay, algal bioassay.

KELOMPOK PAKAR:

Referensi:

1. The Journal of Environmental Quality (JEQ) published by ASA, CSSA, and SSSA.
2. The Journal of Environmental Quality Management. Wiley Periodicals, Inc., A Wiley Company.
3. AN INTERNATIONAL JOURNAL: **MANAGEMENT OF ENVIRONMENTAL QUALITY. ISSN: 1477-7835.**
4. FEIGENBAUM, A. V. 2008. *Total Quality Control, vol. 1.* USA: McGraw-Hill Companies. 863 s. ISBN 0-071-62628-X.
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Benchmarking: UNIVERSITY OF WYOMING

43. PSL-543. LIFE CYCLE ANALYSIS

This course introduces students to the theory and applications of environmental life cycle assessment (LCA) in engineering, corporate and government decision situations. Students will review cases, do problem sets, learn how to use LCA software, and conduct a project in LCA software package.

Life Cycle Assessment is a systematic set of procedures for compiling and examining the inputs and outputs of materials and energy and the associated environmental impacts directly attributable to the functioning of a product or service system throughout its life cycle. Life-cycle assessments involve cradle-to-grave analyses of production systems and provide comprehensive evaluations of all upstream and downstream energy inputs and multimedia environmental emissions. This course will offer students an examination of the theory, methodology and applications of life cycle analysis..

Course content: Introduction – What is Life Cycle Management?; Life Cycle Management History, Assessment Methodologes, Examples of its Applications; Application of Life Cycle Analysis to Recycling and Waste

Management, Manufacturing, Formulation and Processing; Application of Life Cycle Analysis to EIS and Land Use Decisions; the intersection of the precautionary principle and life cycle analysis.

Referensi:

1. Allenby BR, Industrial Ecology: Policy Framework and Implementation, Prentice Hall, 1999.
2. Baumann H and Tillman A-M, The Hitch Hiker's Guide to LCA: An Orientation in Life Cycle Assessment Methodology and Application, Studentlitteratur, 2004.
3. David F. Ciambrone, Environmental Life Cycle Analysis, Lewis Publishers. Draft Report of the LCM Definition Study, UNEP/SETAC Life Cycle Initiative.
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5. Graedel TE, Streamlined Life-Cycle Assessment, Prentice Hall, 1998.
6. Guinée JB et al., Handbook on Life Cycle Assessment: Operational Guide to the ISO Standards, Kluwer Academic Publications, 2002.
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11. Sheehan, et al. (1998) Life Cycle Inventory of Biodiesel and Petroleum Diesel for Use in an Urban Bus. Prepared for the National Renewable Energy Laboratory, NREL/SR-580-24089. Available at www.nrel.gov/docs/ legosti/fy98/24089.pdf
12. Standards: ISO 14040:2006 and ISO 14044:2006
13. Wenzel H, Hauschild M & Alting L, Environmental Assessment of Products Vol 1 Methodology, tools and case studies in product development, Kluwer Academic Publications, 1997.

Benchmarking: THE UNIVERSITY OF MAINE

Kelompok Pakar:

Dr Ir Imam Santoso MS
Dr Ir H. Prasetyo MS

44. PSL-544. MANAJEMEN KONFLIK LINGKUNGAN

Setelah mengikuti kuliah ini mahasiswa dapat menyusun konsep manajemen konflik di bidang lingkungan hidup .

Course Objectives: (1) To analyze conflicts in terms of: Structure and dynamics of conflict episodes, Underlying motivational elements, Escalation /de-escalation behaviors, Integrative and distributive choices and behaviors, Interventionist strategies and techniques, Underlying conflict party characteristics and organizational structures relevant for increasing the potential for integrative solutions. (2) To apply conflict management concepts, principles, strategies and techniques to one's own workplace conflict. (3). To identify possible integrative 'solution spaces' for collaborative resolution of conflict. (4). To map and apply collaborative strategies and techniques to get to those integrative spaces.

Pokok bahasan meliputi: PENDAHULUAN. PENGERTIAN DAN PANDANGAN ATAS KONFLIK: Sasaran (goals), Nilai (Values), Pikiran (cognition), Perasaan (affect), Perilaku (behavior). DINAMIKA KONFLIK: “Conflict Episode” : Latent Conflict , Percieved Conflict , Felt Conflict , Manifest Conflict , Conflict Aftermath . PEMECAHAN KONFLIK: Bentuk/cara dalam pemecahan konflik, yaitu : Kolaborasi, Kompetisi, Akomodasi, Kompromi, Hindari . MODEL PEMECAHAN KONFLIK: Kompetisi, Kolaborasi, Kompromi, Hindari , Akomodasi . Teknik memecahkan konflik : (1). Kendalikan emosi: Anggap sederajat, Dengarkan dengan baik, Kemukakan pendapat, Ungkapkan perasaan; (2). Pemecahan kolaboratif: Definisikan masalah, Curah pendapat, Pemilihan alternatif terbaik bagi kedua pihak, Rencanakan tindakan, Evaluasi. Keterlibatan pihak ke tiga dalam beberapa bentuk : Arbitrasi, Mediasi, dan Konsultasi antar pihak.

Referensi:

Becker, Penny Edgell. 1999. Congregations in Conflict; Cultural Models of Local Religious Life. New York, NY: Cambridge University Press,

Bush, Robert A. and Joseph Folger, 1994. The Promise of Mediation: Responding to Conflict Through Empowerment and Recognition. San Francisco, CA: Jossey-Bass.

Day, Katie. Difficult Conversations: Taking Risks, Acting with Integrity. Bethesda, MD: The Alban Institute, 2001.

Dobson, Edward, Speed B. Leas, and Marshall Shelley. Mastering Conflict and Controversy. Portland, Oregon: Multnomah Press, 1992.

Elmer, Duane. Cross-Cultural Conflict: Building Relationships for Effective Ministry. Downers Grove, Ill: InterVarsity Press, 1993.

Gangel, Kenneth O. and Samuel L. Canine. Communication and Conflict Mangement. Nashville, Tennessee: Broadman Press, 1992.

Goodman, Denis W. Congregational Fitness: Healthy Practices for Layfolk. Bethesda, MD: The Alban Institute, 2000.

Kottler, Jeffrey. Beyond Blame: A New Way of Resolving Conflicts in Relationships. San Francisco, CA: Jossey-Bass, 1994.

Rosenberg, M. B. (2003). Nonviolent communication: A language of life (2nd ed.). Encinitas, CA: Puddle Dancer Press.

Rothman, Jay. Resolving Identity-Based Conflict in Nations, Organizations, and Communities. San Francisco, CA: Jossey-Bass, 1997.

Slaikeu, Karl A. When Push Comes to Shove: A Practical Guide to Mediating Disputes. San Francisco, CA: Jossey-Bass, 1995.

Ury, William L 1993. Getting Past No: Negotiating Your Way from Confrontation to Cooperation. New York, NY: Bantam Doubleday,.

Benchmarking: OHIO STATE UNIVERSITY

KELOMPOK PAKAR:

Dr. Drs. Suryadi M.S.
Mangku Purnomo SP, MAgr, PhD.

45. PSL-545. METODE & TEKNIK PERENCANAAN WILAYAH

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep dan pendekatan ekonomi-ekologi dalam pengembangan wilayah pedesaan, (2). Menjelaskan kembali beberapa kaidah dan prinsip dalam pengembangan wilayah pedesaan, (3). Melakukan /menerapkan analisis & simulasi sistem dalam perencanaan pengembangan wilayah pedesaan.

Pokok Bahasan Meliputi: PENDAHULUAN: Regional sciences vs Regional Economics. Regional Planning vs Landuse Planning. Regional Development vs Economic Development. Azas dan Prinsip Pengembangan Wilayah: Ekonomi vs ekologi, Temporer vs Spasial, Statik vs dinamik, Input-Proses-Output, Alokasi vs Efisiensi. People center development: Paradigma Pembangunan Daerah, Kaidah-kaidah pemberdayaan masyarakat. Konsep Sumberdaya: Pengertian sumberdaya: EKONOMI vs EKOLOGI, Quality and characteristics, Utility & externality, Scarcity, Value and price, Market mechanism. Konsep SDA: SDA-Lahan, SDA-Hutan, SDA-Air, SDA-Tambang bahan mineral, Availability vs Renewability, Productivity vs sustainability. Konsep Dampak Lingkungan: Proses produksi/pemanfaatan sumberdaya, Produk dan limbah, Externality effects, Perubahan lingkungan, Dampak lingkungan. METODE Perencanaan: Metode analisis kependudukan, Input-Output, Metode Gravitasi, Hubungan antar daerah. Metode Operation Research: Metode Alokasi/Optimasi, Pemrograman. Teknik Perencanaan: Survei sosial, Economic base, Analisis antar industri, Indikator sosial, Distribusi pendapatan. Penginderaan jauh, Landuse analysis, Analisis potensi, PERT/CPM, Flowcharting. Konsep Sistem: Pengertian sistem, Wilayah sebagai suatu Sistem, Sibernetik-Holistik-Sistematik, Analisis Sistem, Simulasi Sistem, Aplikasi Komputer. Model EE dalam Perencanaan pengembangan wilayah pedesaan : Pendekatan sistem & problem solving; Goals of RP: Economic goals, Ecological goals; Planning and development models; Cost-Benefit & Optimization. System Simulation instrument in RP: Pendekatan sistem dalam RP: Multi-objective problems, Objective function, Constraint equation, Mathematical modelling.

Economic resource allocation: Cost of production, Pricing strategies, Allocation principles, Programming. Decision analysis: Analysis of public project: Uncertainty, Consideration in project planning, Experimentation. Resources use efficiency (RUE) dalam pengembangan wilayah: Prinsip-prinsip RUE, Landasan ekologis, Landasan ekonomis, Landasan teknis , Model-model simulasi RUE. Model Perencanaan Kawasan pembangunan: Kawasan Potensial, Kawasan Strategis, Kawasan Andalan, KIMBUN: Kawasan Industri Masyarakat Perkebunan, KIMAS: Kawasan Industri Milik Masyarakat, KAPET: Kawasan Pengembangan Ekonomi Terpadu, AGROPOLITAN.

Referensi:

1. Bendavid-Val, Avrom (1991), Regional and Local Economic Analysis for Practitioners, 4th Edition, Westport, CT: Praeger Publishers.
2. Isserman A. M. (1984) Projection, Forecast and Plan: On the Future of Population Forecasting" Journal of American Planning Association 50:208-221
3. Kaufman, S., and Simons, R.A., (1995) Quantitative Research Methods in Planning: Are Schools Teaching what Practitioners Practice? Journal of Planning Education and Research 15: 17 – 35
4. Klosterman, R. E. (1990). Community Analysis and Planning Techniques. Savage, MD: Rowman and Littlefield.
6. Kruekeberg, D. A., and Silvers, A.L, (1974) Urban Planning Analysis: Methods and Models. New York: Wiley.
7. Loretta E. Bass and Rebecca Nees, Demography (4th Edition)
8. Nelson A., W. Drummond, and D. Sawicki (1995) Exurban Industrialization: Implications for Economic Development Policy Economic Development Quarterly Vol. 9 (2): 119 – 133
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11. Stokey, E, and Zeckhauser, R., (1978) A Primer for Policy Analysis. New York: W.W. Norton & Company, Inc.

Benchmarking: Inter-University Europe Center

Kelompok Pakar:

Ir Yeny Ernawati MSc. PhD
Dr Ir Wachid Hasym MSP
Prof Dr Maryunani SE MS
Prof Dr Ir Soemarno MS
Prof Dr Ir B. Setiawan MS

46. PSL-546 PENATAAN RUANG BERWAWASAN LINGKUNGAN

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep penataan-ruang; (2). Menjelaskan beberapa kaidah dan prinsip pendekatan ekonomi dan ekologi dalam tata-ruang; (3). Melakukan simulai penataan ruang wilayah kecamatan.

Pokok bahasan meliputi: Pendahuluan: Penataan ruang , alokasi SDA dan kelestarian Lingkungan. Ruang dan Tata Ruang: a. Ruang: Makna geografis dan makna sosial-ekonomis, b. Ruang sebagai Lingkungan Hidup, c. Ruang sebagai sumberdaya ekonomi. Metode; Teknik dan Prosedur Penata-gunaan Ruang : Prinsip dasar dan kaidah-kaidah Penataan-Ruang: Peraturan perundangan , Persyaratan legal, Persyaratan teknis, Persyaratan sosial-ekonomi, Teknik perencanaan, Metode perencanaan, Prosedur penataan, Penyajian hasil. Model dan Metode Lokasional: Model-model Struktur Lokasional, Metode-metode Analisis Lokasional, Penerapan Secara Regional: a. Sentra pengembangan, b. Kawasan pengembangan, c. Wilayah pengembangan. Kebijakan Tata Ruang di Indonesia : a. UU, b. PP, c. Departemen/Sektor. Analisis Tataruang Regional Propinsi Jawa Timur, Analisis tataruang Daerah Dati II Kab Malang, Analisis tata ruang Wilayah Kecamatan Tumpang, Analisis tata ruang kota Studi Kasus: Kota Batu. Penerapan Konsep Ekosistem dalam Pengelolaan Lingkungan Industri: Usaha perikanan sebagai suatu SISTEM, Identifikasi & deskripsi sistem, Flow-charting sistem, Pemodelan sistem: I-P-O. Feed-back loop.

"Sustainable regional development" we mean economic development that can be sustained over time because it is aimed not only at building wealth but also at creating wider opportunity to contribute to and participate in the benefits of economic growth. Sustainable development focuses on both the pace and the quality of job creation. It plans thoughtfully for regional approaches to housing, transportation, skill development, technological innovation, capitol formation, and land use policies that promote good jobs and strong neighborhoods. It does not compartmentalize development issues away from these other issues into narrow job creation incentive programs. Sustainable regional development requires the active engagement of the business community and it demands strong partnerships among community-based organizations, local governments and regional development agencies.

Referensi:

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2) Jared Diamond, GUNS GERMS AND STEEL: A SHORT HISTORY OF EVRYBODY FOR THE LAST 13,000 YEARS, Prologue, Yali's Question, 13-26 (1998) [13pp]
3) Vitousek et al. (1997), Human domination of earth's ecosystems, Science 277 (25 July): 494-499 [6pp]

4) Eakins (1991) The Sustainable Consumer Society: A Contradiction in International Environmental Law and Policy, Chapter 2, Section II.A, p. 47-54 [8pp]
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6) Anne-Marie Slaughter, 2004. A NEW WORLD ORDER, Introduction (2004)
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9) Bossel, H. "Understanding dynamics." (Chapter 3). In *20/20 Vision: Explorations of sustainable futures*. Kassel: Center for Environmental Systems Research, University of Kassel, Germany, 1996, pp. 3.1-3.16.

Benchmarking: **SAN JOSE STATE UNIVERSITY, DEPARTMENT OF URBAN AND REGIONAL PLANNING**

KELOMPOK PAKAR:

IR. SURYONO, M.ENG., PHD.
PROF. DR. IR. M. BISRI, MT
Ir. Agus Suharyanto M.Eng, PhD.
Dr.Ir. Wachid Hasyim MSP.
Dr.Ir. Ruslin Anwar, M.S

47. PSL-547. PENDIDIKAN LINGKUNGAN

Environmental Education Objectives:

1. To understand the importance of environmental.
2. To understand Environmental pollution & its control.
3. To acquaint the knowledge about Health & Safety.
4. To understand General concept of Disaster Management.
5. To know Acts & legal aspects about Disaster Management.
6. To understand Disaster Preparedness.
7. To acquaint with manifesting the mitigation.
8. To understand Rescue from Disaster.
9. To Understand Relief for Disaster.

Course content

1. Introduction: Concept of Environmental Education; Nature & Scope of Environmental Education; Importance of Environmental Education; Balance of Environment.
2. Environmental Pollution: Introduction of environmental Pollution; Types of Pollution – Radio active pollution. Solid waste Pollution, Air pollution, water pollution; Causes of Pollution; Advances in Pollution control Technology.
3. Environmental Health and Safety: Concept of safety, health and environment; Diseases through pollution; Management to control diseases; Environmental Health & Human Society.
4. Disaster – General: Definition & Types of disaster; Causes of different disasters & their effects; Disaster Management cycle; Acts & legal aspects about Disaster.
5. Disaster Preparedness & Manifesting the Mitigation: Disaster Preparedness at community level: (a) Individual, (b) Society or a group of independent houses, (c) A place of work. (Industry, offices, educational Institutes, Hospitals, Hotels, Places of Entertainment, Religious Places & Celebrations, Transport Modes, Government organizations, Major infrastructures – dams, power plants, Mines etc.).
   Manifesting the Mitigation; Matching the resource availabity working out requirement of Medical Teams Establishing a control centre. Forming & Deploying of Rescue Teams, Organizing Activities at Ground zero Security. Disposal of Dead & Records Casualty Evacuation Records.

I. Knowing the Environment

- The environment social and natural.
- Human dependence on the environment.
- Interdependence of plants and animals.

II. Natural Resources and their Utilization

- Natural resources air, water, land (soil and minerals) and sunlight (energy); significance for growth, development and survival of all organisms.

- Utilization of resources for developmental and social activities production of food, electricity and fuels, construction and other infrastructure.
- Overutilisation of resources.

III. Waste Generation

- Generation of waste and its sources.
- Types of waste solid, liquid and gaseous.
- Hazards of waste accumulation.
- Waste, community health and sanitation.

IV. Management of Waste

- Waste and its disposal solid waste (physical removal and dumping), liquid waste (drainage and sewer system) and gaseous waste (discharged directly into air).
- Conditions for proper waste management co-operation of individuals and community; proper functioning of governmental and local bodies.

V. Environment and Natural Resources

Water a precious resource; essential for life and life activities, a habitat of plants and animals (fresh and marine), sources of water (fresh and marine) rain, snow, ponds, wells, lakes, rivers and seas.

Air atmosphere as reservoir of air; role of atmosphere a blanket for the earth, for maintaining humidity and temperature, a source of gases and medium for dispersal of gaseous wastes.

Soil a medium for growth of plants, types of soil, habitat for organisms, facilitator for percolation and retention of water. Forests a habitat for plants and animals, an agent for percolation and retention of water; maintaining ground water level; prevention of soil erosion; maintaining air humidity; a source of firewood, timber, fruits, lace, resins and medicinal plants.

VI. Man and Environment

- Response of living beings to changes in environment adaptation in plants and animals.
- Modification of environment by human beings to protect themselves against changes and to meet their needs.
- Effect of human activities and population go oath on agriculture, harnessing of energy, housing, industrial development and other areas of consumption and social activities (an elementary idea).
- Consequences of human activities stress on land use, water sources, energy and mineral resources; forests, ocean life; environmental degradation.
- Role of individuals in maintaining peace, harmony and equity in nature; good neighborly behavior; use and misuse of common n property resources.

REFERENSI

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2. David E. Busch, Joel C. Trexler. 2003. Monitoring Ecosystems: Interdisciplinary Approaches for Evaluating Ecoregional Initiatives. Washington, DC: Island Press.

3. Disinger, J. 1983. Environmental education's definitional problem. ERIC/CSMEE, Columbus, OH, (here: pp. 17-29).
4. Hines, J. M., Hungerford, H. R. and A. N. Tomera. 1987. Analysis and Synthesis of Research on Responsible Environmental Behavior: A Meta-Analysis. Journal of Environmental Education 18(2): 1-8.
5. Hungerford, H. R. and T. L. Volk. 1990. Changing learner behavior through environmental education. Journal of Environmental Education 21(3): 8-21.
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8. Reed F. Noss and Allen Y. Cooperrider. 1994. Saving Nature's Legacy: Protecting and Restoring Biodiversity, Washington, D.C: Island Pres.
9. Stapp, W. B. 1969. The concept of environmental education. Journal of Environmental Education 1(1): 30-31 (here: 33-35).
10. William P. Cunningham, Mary Ann Cunningham, Barbara Woodworth Saigo. 2007. Environmental Science: a Global Concern9th ed. Boston: McGraw-Hill.
11. William P. Cunningham, Mary Ann Cunningham. 2006. Principles of Environmental Science: Inquiry and Applications, 3rd ed. Dubuque, IA: McGraw-Hill.

BENCHMARKING: **UNIVERSITY OF PUNE**

KELOMPOK PAKAR

48. PSL-548. PENGELOLAAN LIMBAH DAN SAMPAH

Upon completion of this course, the student will be able to: Identify and discuss the public health, regulatory, planning, technical, and economic principles that influence the solid waste management system; Describe appropriate methods to minimize the impact to the public's health from solid waste related activities; Analyze the importance of an integrated solid waste handling system – including source reduction, recycling and reuse, composting, landfilling and combustion; Develop a more informed opinion on a variety of solid waste related issues.

Course content: Introduction; EH/Public Importance; Integrated SW Management concepts; and SW Management Team ; Laws and Regulations; SW Planning & Characterization; Source Reduction & Reuse; Collection and Transfer; and Recycling and resource recovery. Solid **Waste** Regulations ; **Waste** Generation ; **Waste** Characterization; The Physical Properties of **Waste** ; **Waste** Separation and Processing ; Recycling ; Composting Landfills ; Incineration

Suggested Paper Topics: Construction Recycling "Green Building Programs"/Sustainable building; Composting; 'Take it back' electronic recycling programs; E-waste – non-recycling impacts; Gas to Energy projects; Recycled tire products; Community Litter Clean-up Programs; Bio-solids application; Biodiesel production/use; Recycled Earth Products; Disaster-related SW Disposal Issues; War time SW disposal issues; Food waste recycling; Incandescent vs. compact florescent light bulbs

Referensi:

1. Aarne Vesilind P., William Worrell, and Debra Reinhart, Solid Waste Engineering, Brooks/Cole, 2002
2. George Tchobanoglous, Hilary Theisen, and Samuel Vigil, Integrated Solid Waste Management - Engineering Principles and Management Issues, McGraw-Hill Book Co., 1992
3. Hickman, Lanier H. Principles of Integrated Solid Waste Management, ISBN 1-883767-26-1, 1999.

Benchmarking: Washington State University

KELOMPOK PAKAR

Prof. Dr Ir Sudiarso MS
Dr. Ir Wignyanto MS
Dr. Ir Hendro Prasetyo MS
Dr. Abu Tolchah, M.P.
Dr.Ir. Budi Prasetya M.S.

49. PSL-549. PENGEMBANGAN PERKOTAAN
(Urban Development)

The purpose of the course is that course participants should learn, on the basis of a number of concrete examples, to analyse and critically reflect on what sustainable urban development means in theory and practise. Participants in the course deepen their knowledge of sustainable urban development while broadening their knowledge of the encounter with other perspectives.

The course will mix practical examples of sustainable urban development with theoretical parts. In the theoretical parts the practical examples are analyzed and discussed based on the course participants' own experiences but also based on more complex theories on sustainable urban development. The course is covering:

- current theories and concepts relating to sustainable urban development
- aspects on sustainability from history of ideas´ point of view
- methods to analyze and evaluate specific projects from sustainability point of view
- examples of systematic sustainability analyses

Issues of gender, diversity and environment are fundamental for the discussion of sustainable urban development.

Referensi

1. Bell, S & Morse, S (2008) Sustainability Indicators. Measuring the Immeasurable? Earthscan, London
2. Hall, P & Landry, C (1997) Innovative and Sustainable Cities, European Foundation for the Improvement of Living and Working Conditions
3. Wheeler S. M., Beatley T. (Eds.) (2004) The sustainable urban development reader. London; New York: Routledge.

Benchmarking: Malmö University

KELOMPOK PAKAR

50. PSL-550. PENGEMBANGAN WILAYAH PEDESAAN

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep dan pendekatan ekonomi-ekologi dalam pengembangan wilayah pedesaan, (2). Menjelaskan kembali beberapa kaidah dan prinsip dalam pengembangan wilayah pedesaan , (3). Melakukan /menerapkan analisis & simulasi sistem dalam perencanaan pengembangan wilayah pedesaan.

Pokok Bahasan Meliputi: PENDAHULUAN: Regional sciences vs Regional Economics. Regional Planning vs Landuse Planning. Regional Development vs Economic Development. Azas dan Prinsip Pengembangan Wilayah: Ekonomi vs ekologi, Temporer vs Spasial, Statik vs dinamik, Input-Proses-Output, Alokasi vs Efisiensi. People center development: Paradigma Pembangunan Daerah, Kaidah-kaidah pemberdayaan masyarakat. Konsep Sumberdaya: Pengertian sumberdaya: EKONOMI vs EKOLOGI, Quality and characteristics, Utility & externality, Scarcity, Value and price, Market mechanism. Konsep SDA: SDA-Lahan, SDA-Hutan, SDA-Air, SDA-Tambang bahan mineral, Availability vs Renewability, Productivity vs sustainability. Konsep Dampak Lingkungan: Proses produksi / pemanfaatan sumberdaya, Produk dan limbah, Externality effects, Perubahan lingkungan, Dampak lingkungan. METODE Perencanaan: Metode analisis kependudukan, Input-Output, Metode Gravitasi, Hubungan antar daerah. Metode Operation Research: Metode Alokasi / Optimasi, Pemrograman . Teknik Perencanaan: Survei sosial, Economic base, Analisis antar industri, Indikator sosial, Distribusi pendapatan. Penginderaan jauh, Landuse analysis, Analisis potensi, PERT/CPM, Flowcharting. Konsep Sistem: Pengertian sistem, Wilayah sebagai suatu Sistem, Sibernetik-Holistik-Sistematik, Analisis Sistem, Simulasi Sistem, Aplikasi Komputer. Model EE dalam Perencanaan pengembangan wilayah pedesaan : Pendekatan sistem & problem solving; Goals of RP: Economic goals, Ecological goals; Planning and development models; Cost-Benefit & Optimization. System Simulation instrument in RP: Pendekatan sistem dalam RP: Multi-objective problems, Objective function, Constraint equation, Mathematical modelling. Economic resource allocation: Cost of production, Pricing strategies, Allocation principles, Programming. Decision analysis: Analysis of public project: Uncertainty, Consideration in project planning, Experimentation. Resources use efficiency (RUE) dalam pengembangan wilayah: Prinsip-prinsip RUE, Landasan ekologis, Landasan ekonomis, Landasan teknis , Model-model simulasi RUE. Model Perencanaan Kawasan pembangunan: Kawasan Potensial, Kawasan Strategis, Kawasan Andalan, KIMBUN: Kawasan Industri Masyarakat Perkebunan, KIMAS: Kawasan Industri Milik Masyarakat, KAPET: Kawasan Pengembangan Ekonomi Terpadu, AGROPOLITAN.

Referensi:

1) Kilkenny, Maureen. "Transport Costs and Rural Development." Working Paper 95-WP 133, Center for Agricultural and Rural Development, Iowa State University, 1995.

2) Greenwood, Michael J. and Gary L Hunt. "Migration and Employment Change: Empirical Evidence on the Spatial and Temporal Dimensions of the Linkage." Journal of Regional Science 26(1986): 223-234.
3) Garofalo, Gasper A. and Devinder M. Malhotra. "Effect of Environmental Regulations on State-Level Manufacturing Capital Formation." Journal of Regional Science, Vol. 35, No. 2, 1995, pp. 201-216.
4) Richardson, Harry W. "Competitive Versus Generative Growth." Regional Growth Theory, London, MacMillan, 1973, pp. 86-88.
5) Boadway, Robin W. and David E. Wildasin. "Market Failure and the Rationale for Government Intervention," in Public Sector Economics. Boston: Little, Brown, and Company, 1984, pp. 55-73.
6) Bartik, T.J. "The Market Failure Approach to Regional Economic Development." Economic Development Quarterly, Vol. 4, No. 4, 1990, pp. 361-370.
7) Stiglitz, Joseph E. "Markets, Market Failures, and Development." American Economic Review, Vol. 79, No. 2, 1989, pp. 197-203.
8) Kraybill, David S. and Bruce A. Weber. "Institutional Change and Economic Development in Rural America." American Journal of Agricultural Economics, Vol. 77, No. 4, 1995.
9) North, Douglas C. "Location Theory and Regional Economic Growth." Journal of Political Economy, Vol. 63, No. 3, 1955, pp. 243-258.

Benchmarking: OHIO STATE UNIVERSITY

KELOMPOK PAKAR

51. PSL-551. PENGEMBANGAN WILAYAH PESISIR

Pengelolaan pembangunan wilayah pesisir : dirancang untuk memahami konsep, definisi, pengelolaan sumberdadya wilayah pesisir, serta memahami karakteristik, struktur dan dinamika ekosistem pesisir. Memahami tentang potensi dan permasalahan : degradasi SD, lingkungan, elemen dan proses pengelolaan wilayah pesisir. Memahami teknik perancangan pembangunan yang berdimensi ekologis, sosial ekonomi, sosial politis, hukum dan etika. Memahami tentang pengembangan kelembagaan dalam perencanaan dan pengelolaan serta pengembangan sistem informasi IPTEK dan SDM untuk menunjang pengelolaan pesisir secara terpadu. Penggalangan dukungan , partisipasi dan kemitraan semaua stakeholders pembangunan di kawasan pesisir untuk keberhasilan pembangunan dan konservasi lingkungannya.

Referensi:

1. Coastal Management Journal. Published by Taylor & Francis Inc ISSN Print 0892-0753 ISSN Online 1521-0421
2. The Journal of Environment & Development. Bren School of Environmental Science and Management, University of California, Santa Barbara.

Benchmarking: Center for Coastal Resources Management Virginia Institute of Marine Science

KELOMPOK PAKAR:

Prof. Dr Ir. S. Muhammad, MS
Dr.Ir. Nuddin harahap, M.S.
Dr.Ir Edi Susilo, M.P.
Dr.Ir. Pudji Purwanti MS
Ir. Suryono M.Eng, PhD.

52. PSL-552. PENULISAN ILMIAH 3 SKS

Course Overview

Science and technology profoundly shape our lives, changing the way we communicate with others, the kinds of careers we will have, and the quality of our natural environment.

Understanding the writing process is even more important today because new forms of writing--web-pages, instant messages, databases, interactive billboards--have different audience expectations, different presentation styles and different persuasive strategies. In every assignment this semester, we will pay attention to the tight connections among writing, reading, and research. Students will have numerous opportunities to conceive, draft, revise, and complete writing projects tailored to various audiences. Writing will also be an important tool and vehicle for thinking about the readings, preparing for class discussion, and developing your own ideas. In addition to receiving instruction and practice in conceiving, drafting, revising, and completing writing projects of various lengths for various students.

Course Objectives

As a writing course, the course is also designed to teach you some specific writing strategies and to help you see “learning to write” as an engaged, lifelong learning process. By successfully completing this course, you will progress further in that lifelong process. More specifically, you will begin to:

- Use writing for the purposes of reflection, action, and participation in academic inquiry;
- Work within a repertoire of genres and modes—including digital media—to meet appropriate rhetorical purposes;
- Exercise a flexible repertoire of invention, arrangement, and revision strategies;
- Engage in reading for the purposes of reflection, critical analysis, decision-making, and inquiry;
- Demonstrate he ability to locate, critically evaluate, and employ a variety of sources for all range of purposes;
- Synthesize external data and documentary sources into your own writing with greater awareness of proper citation;
- Demonstrate more fluency in standard, edited English and distinguish the contexts in which formal, informal, and colloquial writing may be appropriate;
- Cultivate a playful attitude toward language;
- Develop lifelong habits of utilizing peer review to develop ideas and revise texts.

Referensi:

Alley, M. 1996. The craft of scientific writing, 3rd. edition. Prentice Hall, NJ. [and accompanying web site: http://filebox.vt.edu/eng/mech/writing/]

Björk, B-C. 2007. "A model of scientific communication as a global distributed information system" Information Research, 12(2) paper 307. (Available at

http://InformationR.net/ir/12-2/paper307.html or http://www.sciencemodel.net/)

Carol Tenopir and Donald King. 2000. "Towards Electronic Journals: Realities for Librarians and Publishers. SLA, 2000. ISBN 0-87111-507-7.

Day, R. 1995. Scientific English: A guide for scientists and other professionals, 2nd edition. Orynx Press.

Day, R. 1998. How to write and publish a scientific paper, 5th. edition. Orynx Press.

Furman, R. 2007. Practical tips for publishing scholarly articles: Writing and publishing in the helping professions. Chicago: Lyceum Books.

Goben, G., and J. Swan. 1990. The science of scientific writing. Am. Scientist 78: 550-558.

Murray, Rowena. 2009. *Writing for Academic Journals*. 288 pages: Open University Press. ISBN 978-0-335-23458-5.

Strunk, W., and E. B. White. 1979. The elements of style, 3rd. edition. MacMillian Publishing Co.

Will G. Hopkins. 1999. GUIDELINES ON STYLE FOR SCIENTIFIC WRITING. Department of Physiology and School of Physical Education, University of Otago, Dunedin, New Zealand 9001. Sportscience 3(1), sportsci.org/jour/9901/wghstyle.html.

KELOMPOK PAKAR

53. PSL-553. PENYULUHAN DAN KOMUNIKASI LINGKUNGAN

At the conclusion of this course the student will have acquired the following knowledge and skills: (1) an understanding of environmental and other science issues that need media attention because of their impact on humans today, including indicators of living systems decline as well as social indicators, and the root causes of unsustainability; (2) an understanding of system sustainability principles, including ecological integrity, economic security, democracy and community, and an introduction to The Natural Step; (3) ability to survey sources available for acquiring information on environmental and other science issues; (4) an understanding of the various media channels available for dissemination of information to the general public; (5) effective writing and/or communication skills for each of the media channels; (6) effective and persuasive speaking skills for a variety of communication situations; (7) a sense of responsible media ethics and environmental ethics and learn techniques for influencing others to adopt an environmental ethic of sustainability.

Course content:

Environmental Issues including Indicators of Living Systems Decline and Social Indicators: Human Population Growth and resulting Social and Economic Impacts, Resource Depletion, Pollution, and other Unsustainable Trends. Sustainability Principles including Ecological Integrity, Economic Security, Democracy and Community, and an introduction to The Natural Step. Sources of Information and Research Techniques. Risk Perception and Risk Realities. Mass Media Channels available for communicating environmental issues including newspaper reporting and writing and magazine feature writing as well as visual and electronic reporting. Environmental Public Relations and Advertising Cam-paigns. Organizations and Environmental Sustainability. Speaking for the Envi-ronment. Environmental Persuading and Negotiating, including lobbying and letter-writing campaigns. Environmental Ethics for a Sustainable Future,including Environmental Justice issues. Special Topics

Referensi:

1. The handbook "ENVIRONMENTAL COMMUNICATION: Messages, Media & Methods" , 1997 Edition, by Lea J. Parker
2. Environmental Economics, by Ian Hodge, St. Martin's Press, New York 1995
3. Beyond Limits, Confronting Global Collapse, Envisioning a Sustainable Future, by D.H. and D.L. Meadows and J. Randers, Chelsea Green Publishing Co., Post Mills, Vermont
4. "Educating a Nation: The Natural Step," by Karl-Henrik Robert, from In Context, No. 28, p. 10-15, Spring 1991
5. The Ecology of Commerce, by Paul Hawkin, Harper Business, 1993
6. "The Economics of Sustainability: Challenges," by Stephen Viederman, Jessie Smith Noyes Foundation, 16 East 34th St., New York, N.Y. 10017, 1994
7. "Eco-Societal Restoration: Re-examining Human Society's Relationship with Natural Systems," distinguished lecture by Dr. John

Cairns, Jr., Center for Environmental and Hazardous Studies, Virginia Polytechnic Institute and State University, 1994

8. "Harvesting One Hundredfold: Key Concepts and Case Studies in Environmental Education," by Donella H. Meadows, United States Environment Program, 1989

Benchmarking: Northern Arizona University

KELOMPOK PAKAR

Prof Dr Ir Soegijanto MS
Dr Ir. Y. Yuliati, MS
Mangku Purnomo S.P., MAgr, PhD.

54. PSL-554. RELIGI DAN LINGKUNGAN

GENERAL COURSE OBJECTIVES

- To explore the interelationship between religion and ecology
- To examine the role of cosmology in underscoring human-earth relations.
- To discover the various assumptions of particular cosmologies.
- To explore the implications of a functional cosmology.

DESCRIPTION OF SUBJECT MATTER

The destruction of natural resources at an alarming rate has raised the question of how this has happened and what is the potential role of religion in halting this process. This course will explore various perspectives on nature and the growing need for new human-earth relations. It will take as its premise that human-earth relations are based on particular cosmologies, namely the understanding of the origin and development of the universe and our place in it. We will examine how cosmologies are assumed by naturalists, articulated by religious writers, systematized by philosophers, and discovered by scientists. What these various cosmological perspectives contribute to our present environmental crisis will be debated.

Introduction to the Course

Identifying cosmology and worldview:

- What is it? Why is it important?
- How can it orient us to a universe of meaning?
- What is a functional cosmology?
- How does it impact environmental ethics?

The Naturalists: Nature Philosophers - The Transcendentalists ; Wilderness and Conservation

World Religions and Ethics: Indigenous Religions and Cosmology; Western Religious Views of Nature; Eastern Religious Views of Nature

Is A Global Ethics Possible?. Science, Religion, and Modernity

Biology, Cosmology, and Ecology: Dream of the Earth, Worldviews and Ecology, Religion and Intellectual Life, Hidden Heart of the Cosmos.

Referensi

1. **Richard C. Foltz (Editor). 2002. Worldviews, Religion, and the Environment: A Global Anthology. Wadsworth, 2002.**
2. David Kinsley, *Ecology and Religion*.
3. Mary Evelyn Tucker and John Grim, eds. *Worldviews and Ecology*.
4. Hans Kung ed., *Yes to a Global Ethic.*
5. Edward Wilson, *Biophilia*.
6. Thomas Berry. *Dream of the Earth*.
7. Brian Swimme, *Hidden Heart of the Cosmos*.

Benchmarking: BUCKNELL UNIVERSITY, Department of Religion

KELOMPOK PAKAR

55. PSL-555. SISTEM INFORMASI LINGKUNGAN

Setelah mengikuti matakuliah ini mahasiswa dapat menyusun konsep manajemen sistem informasi untuk meningkatkan kinerja dan daya saing perusahaan/ organisasi.

Pokok bahasan meliputi: Prinsip-prinsip manajemen fungsi sistem dalam perusahaan, teknik-teknik analisa kebutuhan organisasi akan informasi (Organizational Information Reqruitment Analysis), perencanaan sistem informasi manajemen, pengorganisasian fungsi sistem informasi manajemen, personalia sistem informasi manajemen, pengendalian atas fungsi sistem informasi manajemen.

Arti penting sistem informasi manajemen dalam organisasi, sistem pemrosesan data, teknologi informasi dan dampaknya atas pengembangan sistem informasi manajemen dalam organisasi, konsep file dan database, relevansi sistem informasi manajemen dalam organisasi ataspengambilan keputusan, kerangka manajemen sistem informasi serta gambaran sistem informasi fungsional yang ada dalam suatu organisasi.

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Benchmarking: GHENT UNIVERSITY
Master of Environmental Sanitation and Management

KELOMPOK PAKAR:
Prof. Eko Ganis S, SE. M.com (Hons), Ph.D.
Ir Agus Suharyanto M.Eng, Ph.D.
Dr Ir Sudarto SU
Prof Dr Ir H. Pramoedya M.St.

56. PSL-556. SISTEM INFORMASI KEBENCANAAN

Deskripsi Matakuliah

This course is composed of three themes: Hazard Mapping, Risk and Vulnerability Analysis, and Evacuation Analysis. To understand these areas: we will review a range of spatial analytical techniques and their implementation in state of the art GIS software. An important aspect of the course is to gain hands-on experience in applying these techniques using GIS and spatial analytical software to address some research question.

The main goal of the class is for you to become familiar with the essential methodological and practical issues that are involved in carrying out sophisticated spatial analyses using GIS and other spatial type software to help you make policy decisions.

This course will be a combination of a lecture and lab course. The course consists of two parts: lecture/discussion and a lab. The lecture/discussion period will cover methodology, theory, concepts, and application of statistical and spatial analysis and GIS, as well as periodic articles to be discussed. The lab period of the course will introduce students to a variety of tools to analyze data spatially, including GIS or Geographic Information Systems, Spatial Statistics, Exploratory Spatial Data Analysis (ESDA).

Referensi

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5. Jarmin, R. and Miranda, J. (2006). The Impact of Hurricane Katrina, Rita, and Wilma on Business Establishments: A GIS Approach. U.S. Bureau of Census. Report CES 06-23.
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7. Bouchardy, J. (?).Radar Images and Geographic Information Helping Identify Water Resources During Humanitarian Crisis: The Case of the Chad/Sudan (Darfur) Emergency. Pp. 1- 4.
8. Tralli, D.M., et. al. (2005). Satellite remote sensing of earthquake, volcano, flood, landslide and coastal inundation hazards. ISPRS Journal of Photogrammetry and Remote Sensing. No. 59, pp. 185-198.
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Benchmarking: University of Hawaii

KELOMPOK PAKAR

57. PSL-557 SOSIOLOGI LINGKUNGAN DAN PEMBANGUNAN

Kuliah ini membahas topic-topik: How ecology, technology, politics, economics, and culture intersect. By analyzing key contemporary environmental debates, students develop skills necessary for investigating any sophisticated social issue. Topics we cover: the environmental movement (is it effective?); the sustainable development debate (the tension between environmental protection and the plight of developing nations); capitalism and technology (friends or foes of the environment?); global warming (where science, economics, and politics collide).

The Environmental Movement and Democracy: Mobilization; The Environmental Movement in the United States. Movement Frames and Transformations: "Manifest Destiny and the Development of North America"; "The Early Development of the Environmental Movement"; "Reform Environmentalism: Public Health and Ecology"; "Alternative Voices". "Twenty Years of Change in the Environmental Movement.

Analysis & Prospects: "The Dynamics of the Environmental Movement". "Looming Tragedy: Survivalism"; "Leave it to the Experts: Administrative Rationalism"; "Leave it to the People: Democratic Pragmatism". "The Death of Environmentalism: Global Warming Politics in a Post-Environmental World".

Capitalism & Technology, Friend or Foe?: Green Technology, Green Entrepreneurs? Innovation & the Triple Bottom Line. *Let My People Go Surfing*: "Production Design Philosophy", "Image Philosophy", "Human Resource Philosophy", "Environmental Philosophy".

Green Accounting and Green Markets?: "Ecological Modernization: Industrial Transformations and Environmental Reform"; *Natural Capitalism*: "Making Markets Work". *Beyond Growth*: Introduction - "The Shape of Current Thought on Sustainable Development"; "Moving to a Steady-State Economy"; "Elements of Environmental Macroeconomics"; "Operationalizing Sustainable Development by Investing in Natural Capital". "The Case for Free Trade" . "Environment and the Trading System: Picking up the Post-Seattle Pieces" ; "World Bank's Environmental Reform Agenda".

From environmentalism versus development to sustainable development: "Globalizing Environmentalism: Threshold of a New Phase in International Relations"; United Nations Development Programme: *A Guide to World Resources, 2000 - 2001: People and Ecosystems: The Fraying Web of Life*. *Red Sky at Morning*: "Pollution and climate change in a full world"; "First attempt at global environmental governance". World Commission on Environment and Development: "Towards Sustainable Development"; "'Sustainable Development'". United Nations Environmental Programme (UNEP): *Global Environmental Outlook 3*: "Integrating Environment & Development, 1972-2002".

Social Analysis: "Climate: Making Sense and Making Money"; "Exploring Greenhouse Gas Technologies"; "Biofuels for Transport, Development and Climate Change: Lessons from Brazil" ; "Biofuels, Food, or Wildlife? The Massive Land Costs of U.S. Ethanol" ; "Richer Is More Resilient: Dealing with Climate Change and More Urgent Environmental Problems".

Referensi:

1. Allan Schnaiberg (1994) "The Political Economy of Environmental Problems and Policies: Consciousness, Conflict and Control Capacity." Advances in Human Ecology 3: 23-64.
2. Busch, Lawrence and Arunas Juska. 1997. "Beyond Political Economy: Actor Networks and the Globalization of Agriculture." Review of International Political Economy, 4(4), pp. 688-708.
3. Buttel, Frederic. "Environmental and Resource Sociology: Theoretical issues and Opportunities for Synthesis." In Rural Sociology, 1996, vol 61(1), pp. 56-75.
4. Diamond, Jared M. 1997. Guns, Germs, and Steel: The Fates of Human Societies. New York: W.W. Norton.
6. Frederick H. Buttel (1978) "Environmental Sociology: A New Paradigm?" American Sociologist 13(4): 252-256.
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8. Michael Goldman and Rachel A. Schurman (2000) "Closing the 'Great Divide': New Social Theory on Society and Nature." Annual Review of Sociology 26: 563-584.
9. Robert Gramling and William R. Freudenburg (1996) "Environmental Sociology: Toward a Paradigm for the 21st Century." Sociological Spectrum 16(4): 347-370.
10. William R. Catton, Jr. and Riley E. Dunlap (1978) "Environmental Sociology: A New Paradigm." American Sociologist 13(1): 41-49.
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12. Murray Bookchin (1986) "What is Social Ecology?" Pp. 49-76 in The Modern Crisis. New Society.
13. Douglas H. Boucher, Sam Jones, and Kathleen H. Keeler (1982) "The Ecology of Mutualism." Annual Review of Ecology and Systematics 13: 315-347.
14. Andrew Light and Alan Rudy (1996) "Social Ecology and Social Labor: A Consideration and Critique of Murray Bookchin." Pp. 318-342 in D. Macauley (ed.) Minding Nature: The Philosophers of Ecology. Guilford Press.

Benchmarking: MICHIGAN STATE UNIVERSITY

Kelompok Pakar:

58.PSL-558 PENGENDALIAN PENCEMARAN/POLUSI

Setelah selesai mengikuti mata kuliah ini (pada akhir semester) diharapkan mahasiswa mampu untuk: (1). Memahami konsep-konsep dan teknologi pengendalian pencemaran/Polusi LH; (2). Menjelaskan kembali beberapa kaidah dan prinsip pendekatan ekonomi dan ekologi dalam pengendalian limbah dan pencemaran LH; (3). Melakukan simulasi analisis pengendalian pencemaran ekosistem.

Pokok bahasan meliputi: Pendahuluan : Pembangunan dan DAL, Limbah dan pembuangan limbah, Gangguan lingkungan. Pencemaran lingkungan: Apa itu pencemar dan kerusakan akibat pencemar, Proses dan fenomena pencemaran: Bio-fisik, Geo-kimia, Sosial-ekonomi, Sosial budaya, Dampak akibat pencemaran.

Definition PL: Causes, effects and control measures of : a. Air pollution; b. Water pollution; c. Soil pollution; d. Marine pollution; e. Noise pollution; f. Thermal pollution; g. Nuclear pollution; Solid waste management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies: Disaster management: floods, earthquake, cyclone and landslides.

Daya dukung lingkungan: Karakteristik dan perilaku ekosistem lingkungan hidup, Konsep daya dukung dan pengukurannya, Reversibilitas daya dukung. Lingkungan dan Ekonomi: Model neraca bahan / material, Aliran material dalam ekonomi, Lingkungan sebagai sumberdaya, Pilihan pengendalian pencemaran/polusi. Estimasi kerusakan akibat polusi/ pencemaran: Tujuan dan metode, Respon terhadap polusi, Strategi dan analisis , Beberapa instrumen pendugaan gangguan /kerusakan lingkungan, Problematik pengukuran biaya kerusakan, Problematik kelangkaan informasi. Pendekatan sosio-teknologi atas gangguan/ kerusakan lingkungan: Social discount rate dan biaya lingkungan, Risk dan uncertainty. Market Systems dan Polusi: Market system, Market failure, Property rights, Public goods. Prinsip-prinsip ekonomi dalam pengendalian pencemaran: Optimum level pengendalian polusi/pencemaran. Model pengendalian: a. Ekonomi baku mutu lingkungan, b. Teknologi baku mutu , c. Regulasi baku mutu, d. Strategi pengendalian, e. Enforcement pengendalian. Strategi minimisasi Limbah berbahaya : Biaya privat dan biaya sosial, Eksternalitas : teknis dan ekonomis, Problematik pengendalian biaya sosial, Instrumen pengendalian, Karakteristik limbah berbahaya, Perilaku di alam, Irreversibilitas dan optimal uses barang/jasa lingkungan

Referensi:

1. Alley, E.R, Stevens, L.B., and Cleland, W. L., Air Quality Control Handbook. McGraw-Hill, 1998. ISBN: 0-07-001411-6.
2. Bagchi, A., Design, Construction, and Monitoring of Landfills, (2nd Ed). Wiley Interscience, 1994. ISBN: 0-471-30681-9.
3. Bellandi, R. (ed), Hazardous Waste Site Remediation: The Engineer's Perspective. Wiley Interscience, 1995. ISBN: 0471286931.
4. Bishop, P., Pollution Prevention: Fundamentals and Practice. McGraw Hill, 2000. ISBN: 0073661473

5. Buonicore, A.J. (ed) and W.T. Davis (ed). 1992. Air Pollution Engineering Manual. Air & Waste Management Association. Wiley-Interscience, 1992. ISBN: 0-471-28441-6.
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Benchmarking: The Association of Professional Engineers and Geoscientists of British Columbia (APEGBC)

KELOMPOK PAKAR:

Prof Dr Ir C. Cahyani M.S.
Dr.Ir. Rini D. Astuti MS
Dr. Drs. Suharjono, M.S.
Ir. Arief Rachmansyah PhD.

59. PSL-559. TOKSIKOLOGI LINGKUNGAN

Introduction to Environmental Toxicology: Definition, classification, origin and general nature of toxicants in environment, factors affecting toxicity, nutritional and non nutritional food supplements and their effects, mutagenesis, teratogenesis, carcinogens, hellucinogens, phytotoxins and animal toxins. Systematic and Eco-toxicology : Toxic response of different body systems likes respiratory, gastro-intestinal tract, Liver, kidney, immune system, reproductive system. Problems and approach, Environmental distribution of chemicals in air, water, sediments,soil and biota; Effects of toxicants on ecosystem, Detoxification of toxicants in resistant biota. Experimental methods for measuring toxicity; Types of bioassays (Ames test, bioluminescence, algal toxicity, gene induction etc.), the interaction of chemicals with ecosystems; Methods for assessing the impacts of chemicals on ecosystems (toxicity tests, field assessment, special analyses such as biomarkers, bioaccumulation, mesocosm and microcosm studies). Biotransformation, bioaccumulation and bio-magnification of toxicants ,Toxicants absorption and distribution of toxicants in animal body, Bio-transformation of toxicants,antidotes treatment and their detoxification of toxicants, Bio-accumulation, Biomagnification.

Environment and health and environmental stress : Basic principles of environmental health, community health, impact of changing environment on biota, effect of stress on environment, adaptations and tolerance level of various organisms and stress factors, micro-organisms of extreme environment. Occupational health hazards : Stress, man, machine and environment, ergonomics and occupational physiology and Hazards of working environment safety management of occupational hazards. Ecological risk assessment process and evaluation of human exposure; Case studies related to accidental discharge of pollutants and their impacts on the ecology and inhabitants of the surrounding areas.

Referensi:

1. Toxicology on the Web. A variety of course materials, such as this syllabus, old examinations, reading assignments, case-studies, and examination schedule, is at http://toxicology.usu.edu/540/540.htm.
2. *Cassarett and Doull's Toxicology: The Basic Science of Poisons*, C.D. Klaassen (ed.), 7th Edition, 2008, McGraw-Hill, New York (ISBN 978-0-07-147051-3).
3. INTRODUCTION TO ENVIRONMENTAL TOXICOLOGY. By Wayne G. Landis, Ming-Ho Yu
4. Basic Environmental Toxicology - by LG Cockerham, Barbara S Shane - 646 pages.

Benchmarking: Utah State University, Interdepartmental Graduate Toxicology Program.

KELOMPOK PAKAR

60. PSL-560. TQM PENGELOLAAN LINGKUNGAN

Environmental Quality Management

The objectives of the course are to: (1) introduce students to the major environmental concepts and issues confronting managers working in corporations, businesses, government, industries, and non-profit groups; (2) provide students with strategic and operational approaches to environmental management that can be taken by business and society; and (3) introduce students to the concept of environmental management systems and to ISO 14001, the international environmental management system standard.

Course content: Development of Environmental Concerns; Concepts & Principles of Ecology. Examination of the impact of environmental issues on organizational structure and operations froma management perspective with a focus on how environmental concerns create threats opportunities and affect organizational strategic management. Discussion of current environmental issues involving research and development legislation regulatory policies and technological advances in environmental management and examination of the new "corporate culture" that integrates environmental considerations into organizational design. A special emphasis will be placed on public perceptions of environmental issues and how they affect business strategy. Management Practice & the Environment; Toward a Sustainable Society. Introduction to ISO 14001 & Other Environmental Management Systems. ISO 14001 Standard Document, Sections 4.1 and 4.2; Environmental Management Executive Order. ISO 14001: Planning. ISO 14001 Standard Document. ISO 14001: Implementation and Operation. ISO 14001: Checking and Corrective Action.

Referensi:

1. James R. Evans and William B. Lindsay, The Management and Control of Quality, 5th ed. (Minneapolis: West Publishing Company, 2002).
2. *Principles of Environmental Management; The Greening of Business*; by Rogene A. Buchholz; Second Edition, Prentice Hall, 1998 (Required).
3. *ISO 14001 Implementation Manual*; by Gayle Woodside, Patrick Aurrichio, and Jeanne Yturri; McGraw Hill, 1998 (Optional)

Benchmarking: University of New Orleans.

KELOMPOK PAKAR

61. PSL-561. PEMBERDAYAAN MASYARAKAT PASCA BENCANA

Course Description:

Investigates the impact and consequences of posttraumatic stress on victims, families, emergency workers, and community members resulting from natural disasters, human-made emergencies, or societal violence. Readings and discussion will center on psychological, physiological, biological, social and behavioral reactions to emergencies with an emphasis on risk factors, social support systems, crisis intervention and treatment. This course will examine the effectiveness of programs designed to prevent or mitigate mental health problems.

Learning Objectives:

1. To understand the nature and impact of traumatic stress and psychotraumatology
2. To understand risk factors related to post traumatic stress
3. To understand the "ripple effect" of traumatic stress on victims, families, emergency workers and community members
4. To explore and understand psychological reactions to different types of disasters
5. To understand the importance of accurately assessing post traumatic reactions in those impacted by disasters, along with appropriate corresponding treatment options
6. To develop a knowledge of programs and resources designed to mitigate the impacts of traumatic incidents on primary and secondary victims
7. To develop a basic understanding (or advanced understanding depending on the student's current skill level), of the options available for assisting those impacted by disaster
8. To understand principles related to Critical Incident Stress Management

Pokok Bahasan:

1. Define disaster and discuss the different types of disasters
2. Explore evolution of psychotraumatology and the field of disaster response
3. Evaluate traumatic stress as a consequence of emergency and disaster response
4. Examine Posttraumatic Stress Disorder (PTSD)
5. Identify psychological risks related to disaster
6. Discuss the "Ripple Effect" and its effects on different types of disasters.
7. Examine impact differences and similarities associated with each type of disaster, and the different types of psychological responses to each.
8. The role of mental health following a disaster.
9. Stress reactions and trauma related to disaster survivors.

10. Discuss locations where mental health providers may be called upon to offer services following a disaster, and in the evolving stages of the disaster
11. The impact of disasters on rescue workers and their common stress reactions
12. The Critical Incident Stress Management (CISM) strategies
13. The agency collaboration and disaster coordination strategies.

Referensi:

1. Anna K. Schwab, Katherine Eschelbach, *David J. Brower* . 2007. Hazard Mitigation and Preparedness . ISBN: 0-471-79019-2. 384 pages, John Wiley and Sons.
2. Auf der Heide, E. 1987. Disaster response: Principles of preparation and coordination. http://coe.dmha.org/dr/flash/htm.
3. Bates, F. L., and W. G. Peacock. 1992. Measuring disaster impact on household living conditions: The domestic assets approach. International Journal of Mass Emergencies and Disasters 10 (1): 133–160.
4. Bolin, R. C. 1989. Long-term family recovery from disaster. Monograph 36, Institute of Behavioral Science, University of Colorado at Boulder.
5. Everly and Mitchell. 1999. Critical Incident Stress Management: A New Era in Standard of Care in Crisis Intervention, 2nd Edition, The ISBN number is 1-883581-16-8.
6. Jervis, Davis, and Davis. 2005. Psychological Support in Disasters: Facilitating Psychological Support for Catastrophic Events, The ISBN number is 1-889315-87-7.
7. Passerini, E. 2000. Disasters as agents of social change in recovery and reconstruction. Natural Hazards Review 1 (2): 67–72.
8. Perry, R. W. 1995. The structure and function of community operations centers. Disaster Prevention and Management 4 (5): 37–41.
9. Schiraldi, 2000. The Post-Traumatic Stress Disorder Sourcebook: A Guide to Healing, Recovery, and Growth, The ISBN number is 0-7373-0265-8.
10. Schwab, J., K. C. Topping, C. C. Eadie, R. E. Deyle, and R. A. Smith. 1998. Planning for post-disaster recovery and reconstruction. Washington D.C: Federal Emergency Management Agency.

Benchmarking: Western Washington University

KELOMPOK PAKAR

62. PSL-562. PEMBERDAYAAN MASYARAKAT DALAM PENGELOLAAN LINGKUNGAN

Pemberdayaan Masyarakat : dirancang untuk memahami arti penting konsep pemberdaya an (emplowerment) sebagai kecenderungan dalam konsep pembangunan berkelanjutan berwawasan lingkungan. Secara kritis akan dibahas pokok-pokok pikiran (teoritik dan ideologis) yang mendasari timbulnya konsep pemberdayaan masyarakat dalam studi ling kungan hidup, hubungan kemitraan & partisipasi antara pemerintah dan masyarakat sipil, makna dan peran strategis pemberdayaan masyarakat dalam proses transformasi sosial (lokal, regional, global). Strategi pengembangan pemberdayaan masyarakat kawasan lindung, hutan, pesisir, pertanian, DAS, kota.

The purpose of this course is to explore the notion of community development in general, and the notion of sustainable community development more specifically. The course is not designed to give you the answer on how to achieve sustainable community development, but rather to expose you to a variety of elements and viewpoints about it. As future planners, part of the skill set you are learning is the capacity to integrate and synthesize a multitude of perspectives into a coherent idea - this class is ideally suited to push you in that direction. This class will hopefully enlarge student's conception about what community development is and how it is pursued, as well as push you to look inward, challenge your assumptions and stereotypes about the world, and leave you with a richer (if not more confused) notion of how the world works and what can be done to make things better.

Course content: Konsep pemberdayaan (empowerment) sebagai kecenderungan dalam konsep pembangunan berkelanjutan berwawasan lingkungan. Pokok-pokok pikiran (teoritik dan ideologis) yang mendasari timbulnya konsep pemberdayaan masyarakat dalam studi ling kungan hidup, hubungan kemitraan & partisipasi antara pemerintah dan masyarakat sipil, makna dan peran strategis pemberdayaan masyarakat dalam proses transformasi sosial (lokal, regional, global). Strategi pengembangan pemberdayaan masyarakat kawasan lindung, hutan, pesisir, pertanian, DAS, kota.

Community development: Understanding basic concepts - community, development, sustainability, neighborhood. Community development - who does it? Community needs and assets. Community Development Issues – Environment. Community Development Issues – Housing. Community Development Issues – Jobs. Community Development Issues – Transportation. Community Development Issues – Sustainability Community Development Models. Institutional roles. Community organizing - models & approaches. Community organizing - working together. Social capital. Measurement and evaluation - community indicators. Community-based GIS.

Referensi:

1) Green, G. P. and A. Haines (2002). Asset building & community development. Thousand Oaks, Calif., Sage Publications.
2) Kretzmann, J. P., J. McKnight, et al. (1993). Building communities from the inside out : a path toward finding and mobilizing a

community's assets, Center for Urban Affairs and Policy Research Neighborhood Innovations Network Northwestern University. Introduction

3) Connor, Joseph A. and Stephanie Kadel-Taras (2000). The Community Support Organization: Linking Not-for-Profits to Community Impact. The Not-for-Profit CEO Monthly Letter (Vol. 7, No. 8).
4) Portes, Alejandro and Patricia Landolt (1996). Unsolved Mysteries: The Tocqueville Files II, The Downside of Social Capital. American Prospect 7(26).

Benchmarking: UNIVERSITY OF OREGON

Kelompok Pakar:

PROF. DR. IR. KEPPI SUKESI, M.S.
PROF. DR. IR BUDI SETIAWAN MS
Dr Ir. Yayuk Yuliati MS

63. PSL-563. KETAHANAN DAN KEAMANAN PANGAN

Sustainable agriculture integrates the goals of environmental health, economic profitability, and social and economic equity. The overriding principle is to meet current food needs without compromising the rights of future generations. Food security refers to the availability of and ability to acquire sufficient food for a healthy and productive life (as defined by World Bank, USDA, and USAID). Food availability, food access and food utilization/consumption are central to the attainment of food security. In today's changing and globalized world, food security also requires ensuring that food supplies remain free from threats to human health whether from unintentional contamination (food safety) or intentional contamination (food defense). The link between food security and production is easy to see but challenging to make. Given the multi- dimensional phenomena around both food security and production, this course will focus on the concepts, programs, and policies of food security, in the Indonesia, and their impact on food production. Strategies to strengthen agriculture and expand food production for improving food security will be reviewed. Through case studies and discussion we will strategize how to meet the challenge of creating sustainable food systems based on social justice and democratic decision-making that will ensure people's right to food.

Upon completion of this course, you will be able to:

1. Define the concepts of food security
2. Define the concepts of sustainable agriculture
3. Identify opportunities and challenges in the countries we will be visiting that support sustainable food production and improve food security
4. Articulate the complex and often interconnected issues related to food security and food Production.

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Kelompok Pakar:

64. PSL-564. KETAHANAN LINGKUNGAN DAN KESEHATAN

This course examines the relationship between human-induced environmental stress and national and international security, with a special focus on the likelihood of environmentally related violence in the developing world. It also introduces students to some technical aspects of global environmental change.

Pokok Bahasan:

1. Dasar-dasar lingkungan : Environment definition. Scope of environment studies; Life and the environment. Physio-chemical factors in the environment, changes in the environment-anthropogenic and non-anthropogenic; Environmental hazards and risks; Natural resource – conservation and sustainable development.
2. Ekosistem-Manusia-Lingkungan Hidup: Ecosystems concepts; Forest ecology; Pathways in ecosystem; Environment implications of energy use; Problems of sustainability of ecosystems.
3. Population dan Lingkungan Hidupnya: Carrying capacity: limits to population growth; Population growth and natural resources; Impact of population growth on economic development and environment.
4. Sumberdaya lahan dan air: Land resources of the earth; Land use; Water resource of the earth.
5. Faktor perubahan ecosystem dan Lingkungan (socio, economic, cultural and geographic)
6. Pencemaran Lingkungan : Polusi Udara, Air, Tanah, Bising; Sources of pollution; Effects of pollution; Remedies to control pollution.
7. Environment and Public Health: Environmental pollution and community health; Water borne disease; Air borne diseases; Chemical insecticides and its impact on health; Toxic actions of metals and biological substances.
8. Pengelolaan Limbah: Types of wastes; Methods of waste management; Water pollution and treatment of wastes; Solid wastes management; Air pollution control technology.
9. Pengelolaan Lingkungan: Environmental legislation; Environmental policies; Human rights issues relating to environment; Environment movements; Environmental ethics; Women and environment.

10. Role of local municipal authority, governmental agencies in promoting better health environment.

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Kelompok Pakar:

65.PSL-565. POLITIK SDA DAN LINGKUNGAN

The course introduces students to the principles, reasoning, and techniques required to set-up and solve allocation problems, under different social objectives. Policy will serve as both an input and an implicated output of this approach. The economic tools developed are applied to renewable resources, exhaustible resources, water, pollution, marine resources, climate change, conservation planning, and other contemporary problems. The rst third of the course is devoted to learning the basic principles and tools required to analyze natural resource management problems. The second third of the course consists of several case studies of contemporary renewable and non-renewable natural resource problems.

The course is broken into 3 sections: (1) Analytical techniques, modeling, and principles of natural resource economics and policy (2) Case studies and special topics2, and (3) Term paper presentations.

Subtopics within each section are listed below:

1. Modeling, definitions, and natural resource allocation : Basic concepts; Solving numerical allocation problems; Fundamentals of renewable resource economics; Fundamentals of non-renewable resource economics; Handling risk, uncertainty, and sensitivity.

2. Case studies and special topics: Water allocation, markets, pricing, and conservation; Non-renewable resources and stock pollutants: dynamics and regulation; Ecosystem services and Ecosystem Based Management.

3. The economic/ecological frontier for the Protected Area design: Conserving biodiversity: allocating scarce resources toward protection; Bioprospecting" for genetic resources: resource conservation from the private sector; The impact of climate change on forest resources; Decision making under uncertainty and option value.

References:

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3. Baumann et al. 1998. Urban Water Demand Management and Planning. McGraw Hill.

Kelompok Pakar:

66. PSL-566 KETAHANAN NASIONAL ASPEK SOSIAL BUDAYA

This course aims to provide students with in-depth knowledge and rethinking of Indonesian society and culture through the use of socio-anthropological perspectives and its implications to national security. The course will give general and holistic survey of the major cultural, social, historical, political, and economic processes in the Indonesia country.

The content of the course involves the study of the following subjects:

1. Theories and approaches of anthropological perspectives in understanding the culture and society and its implications to national security;
2. To identify explanatory frameworks that could lead to a deeper understanding of the cultural factors affecting Indonesia culture and society from pre-colonization, colonization, post-war and post-independence, and the contemporary period;
3. To be critical in analyzing anthropological studies on Indonesian values system, family and kinship system, indigenous ethnic communities, and other important cultural beliefs in the country; and
4. To enable the students to apply the concepts and ideas on a research problem mutually agreed upon by the student and the supervisor.

Tujuan Mata Kuliah

Upon the completion of this Course, a student is expected to have:

1. obtained a comprehension of the various frameworks and levels of societal security analysis in Indonesia culture and society;
2. acquired an appreciation and understanding of the cultural factors influencing the internal and external environment of the country from the colonial periods, to post-war and succeeding administrations by Indonesian presidents, the contemporary global Indonesia diaspora, and influences of neighboring societies (i.e. Southeast Asia regions) in the Indonesia; and
3. gained insights into the social role of culture and the societal security on special topics related to health culture, the sociology of the military, indigenous peoples, world religion and religious syncretism, and regional culture and society as a whole.

Kelompok Pakar:

67.PSL-567. ECONOMIC POLICY & HUMAN SECURITY

Pokok Bahasan

1. Introduction: A review of economic development and poverty; Poverty Conlict and Foreign Intervention; Causes of Conlict.
2. Poverty and Economic Growth: Poverty - Besley and Burgess (2003), Deaton (2005); Econometric Concerns - Rodrik (2005), Kenny and Williams (2001); Economic Growth as a Goal - Kenny (2005).
3. Determinants of Economic Growth: Institutions ; Geography ; Diversity ; Trade.
4. Economic Growth and The Distribution of Wealth: Inequality and Growth
5. Public Good Provision: Measurement ; Decentralization; Identity and Public Good Provision.
6. Land Reform, Credit and Insurance: Land Reform ; Credit and Insurance.
7. Household Allocation and Child Labour: Household Allocation; Child Labour.

References

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Benchmarking:

68. PSL-568.SISTEM PENGELOLAAN KEBENCANAAN

Course Objectives

Introductory-level concepts and practical aspects involved in disaster management.Relating personal or community experiences of disasters. To define and describe disastermanagement, hazard, emergency, disaster, vulnerability, and risk; list and describe the mainhazards of an area, define the various phases of the disaster management cycle; howcommunity-based action plan for disaster management can be implementedModule 1. Overview of Disaster Management – Distinguishing between an emergency and adisaster situation. Disaster Management Cycle – Phase I: Mitigation, and strategies; hazardidentification and vulnerability analysis. Disaster Mitigation and Infrastructure, impact of disasterson development programmes, vulnerabilities caused by development, developing a draft country-level disaster and development policyModule 2. Disaster Management Cycle – Phase II: Preparedness, Disaster Risk Reduction(DRR), Emergency Operation Plan (EOP), Mainstreaming Child Protection and Gender inEmergency Planning, Assessment, Disaster Management Cycle – Phases III and IV: Responseand recovery, Response aims, Response Activities, Modern and traditional responses todisasters, Disaster Recovery, and Plan , Disasters as opportunities for development initiativesModule 3. Community-based Initiatives in Disaster management, need for Community-BasedApproach, categories of involved organizations: Government, Non-government organisations(NGOs), regional and international organizations, panchayats, community workers, national andlocal disaster managers, Policy Makers, grass-roots workers, methods of dissemination ofinformation, Community-based action plan, advantages/disadvantages of the community-basedapproachModule 4. Disaster Response Personnel and duties, Community Mitigation Goals, pre-DisasterMitigation Plan, Personnel Training, Volunteer Assistance, School-based

Programmes,Hazardous Materials, Ways of storing and safely handling hazardous materials, Coping withExposure to Hazardous MaterialsModule 5. Emergency Health Services Disasters, Infrastructure and procedures in accessingemergency situations, IMA and MCI roles in disaster management, commoncommunicable diseases in disasters, risk factors in the spread of diseases, its outbreaks,preventing and reducing outbreaks, Monitoring and Evaluation of Communicable DiseasesControl Programme

References

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2. Commonwealth of Learning (COL) 2007. Introduction to Disaster Management VirtualUniversity for Small States of the Commonwealth (VUSSC), Canada, 205p3.
3. FEMA 2008. Are You Ready? An in-depth guide to citizen preparedness Federal Emergency Management Agency, Jessup, 204 p4.
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Benchmarking: School of Environmental Sciences, Mahatma GandhiUniversity, Kerala

Kelompok Pakar:

69. PSL-569. HUMAN SECURITY

This course will explore a series of human security issues drawing on the perspectives of key governmental, international and non-governmental actors. It will examine substantive policy agendas designed to increase the safety of individuals from physical violence and armed conflict including: cluster munitions and small arms; the protection of civilians and the responsibility to protect; women, peace and security; international criminal justice and war economies. The bulk of the emphasis will be placed on the processes through which a diverse set of actors develop global public policy responses by articulating new policy agendas, defining policy recommendations, building governmental and non-governmental coalitions, negotiating international agreements, and monitoring and evaluating policy implementation. Attention will be given to assessing policy development strategies appropriate to the various stages of the public policy cycle, and to results-based approaches to effectively utilizing scarce resources.

Referensi

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6. Lynda Doll *et. al*. “Injury and Violence Prevention Interventions: An Overview,” Handbook of Injury and Violence Prevention, Springer, 2006
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8. Richard Garfield, Violence and Victimization in South Sudan, Small Arms Survey, 2007
9. Stepehn Garret, Models of Transitional Justice: A Comparative Analysis, International Studies Association, 2000

Benchmarking: University of Ottawa

Kelompok Pakar:

PSL-570. GLOBAL CLIMATE CHANGE 3 sks

Perubahan Iklim Global

Global climate change in the past, present, and future. The course focuses on evidence of climate change in the past, modern climate variability, and the range of theories and arguments regarding potential climate change in the future. The major controls on climate variability at a range of temporal scales. The modern research methods that are used to investigate past climate and to model possible climatic trends, such as global warming.

Questions the Course Will Address: Is climate changing? ; How do I measure climate change? ; What does it matter? What impact will climate change have on me? On life on earth? ; How fast is climate changing? ; What can I do about it? Can I do anything about it? ; Is human activity the cause of climate change? .

Course content: Intro: Water; Heat Budget: Atmospheric Moisture; Clouds/Dew: Historical Changes; Atmosphere Stability: Recent Glaciations; Precipiatiuon: Orbital/astronomic effects, El Nino; Air Pressure: Milankovitch cyclicity; Wind: Species Distributions; Fronts: Snowball Earth; Cyclones: Mountain-ODP, Sea Level; Forecasting: Deforestation; Thunderstorms: Hurricanes, Diseases;

Topics for discussion include the carbon cycle, solar orbital variations, monsoon variations, greenhouse warming, ozone depletion, El Niño-La Niña and ocean-atmosphere feedbacks. The human role in global change, and the response of the environment to such changes, including effects such as sea level rise, vegetation changes, and changes in ocean circulation.

Reference:

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Planetary Science Letters, 171-212, RAMPINO, M. R.,SELF, S. & STOTHERS, R. B. (1988) Volcanic winters. Annual Reviews of Earth and Planetary Science Letters, 16, 73-99.

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Benchmarking: Miami University, Department of Geology / School of Interdisciplinary Studies

PSL-571. GLOBAL WARMING

There have been few environmental issues that have polarized a nation as much as Global Warming. From those who predict that the Earth will eventually get so hot that it will self-incinerate to those who believe that the entire notion of a warming planet is something manufactured by political operatives anxious to please their constituents, Global Warming is an issue that has been and will continue to be hotly contested in both public and private arenas.

This course presents the science behind the forecast of global warming to enable the student to evaluate the likelihood and potential severity of anthropogenic climate change in the coming centuries. An overview of the physics of the greenhouse effect including comparisons with Venus and Mars; overview of the carbon cycle in its role as a global thermostat; predictions and reliability of climate model forecasts of the greenhouse world; an examination of the records of recent and past climates.

Course content: "What is the Greenhouse Effect". The nature of light as an energy carrier through vacuum, and with the nature of gases, pressure, and the structure of theatmosphere. How light interacts with matter, which explains why only certain wavelengths are absorbed and also, parenthetically, the "ultraviolet catastrophe" paradox which led to the development of quantum mechanics. How blocking outgoing infrared light by CO2 can make the earth hotter.

"Fossil Fuel and the Carbon Cycle", and how the greenhouse effect theory and CO2 cycling fit into geologists' theories about the long-term climates of Earth, Venus, and Mars. Where the energy stored in fossil fuels comes from, and something about relative warming potential of different forms of energy.

"Clearly for planetary good housekeepng we should watch where we put our carbon" (Weiner, The Next One Hundred Years). "The Forecast". The mechanics of how climate models work, the sources of uncertainty in climate forecasting, and discuss records of recent and past climates, including records of abrupt climate change in recent climate of the past.

Spesific discussion topics: Introduction to Global Warming; Understanding Climatology; The Greenhouse Effect; Where is all the Hot Air Coming From?; The Effects of Global Warming - Part 1 ; The Effects of Global Warming - Part II ; The Scientific Support for Global Warming ; The Argument Against Global Warming; Our Response Thus Far; Doing our Part.

Reference:

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Benchmarking: UNIVERSITY OF CHICAGO.

PSL-572. KEMISKINAN DAN LINGKUNGAN HIDUP

Poverty and Environmental Problems

Sustainable Development 1: Growth and the Environment. The Simple Economics of Easter Island: A Ricardo-Malthus Model of Renewable Resource Use ; Positive Model of Growth and Pollution Control. Structural Change and Sustainable Development. *Economic Development and Environmental Sustainability.*

Sustainable Development 2: Poverty and the Environment. Where Development Can or Cannot Go: The Role of Poverty-Environment Linkages, Managing Environmental Wealth for Poverty Reduction. Poverty and Environmental Partnership.

Humans & Sustainability : Living Sustainably ; Population Growth , Economics, Poverty & Globalization ; Resources , Pollution , Environmental & Resource Problems , Cultural Changes & Sustainability , Are We Living Sustainably? , Economy & the Environment , Economics & Environmental Quality , Poverty & Environmental Quality , Environmental Sustainable Economies .

Environmental Issues: Environmental degradation - deforestation - urbanization - population explosion and other environmental hazards - depleting natural resources and relationship between poverty and environmental degradation and vice versa - competition, man's thoughtless exploitation of natural resources - Hiroshima and Nagasaki - Bhopal tragedy - Gulf war - oil pollution. Principles of Environmental Impact Assessment and Environmental Monitoring and Auditing. Environmental ethics and laws - Earth summits - Role of Governmental & Non-Governmental agencies for environmental monitoring.

Referensi:

1. Bodley, John H. 2008. Anthropology and Contemporary Human Problems (5thedition). Altamira Press: Lanham, MD.
2. Gardner, G. T. & Stern, P. C. (2002). Environmental problems and human behavior, 2nd ed. Boston: Pearson Custom Publishing. 371 pp. ISBN: 0536686335 **.**
3. Hannen, Nora and Wilk, R.(editors), 2006. *The **Environment** in Anthropology: A Reader in Ecology, Culture, and Sustainable Living*. New York University Press: New York, NY.
4. López, R. (1998). “Where Development Can or Cannot Go: The Role of Poverty-Environment Linkages,” in B. Pleskovic and J. Stiglitz, eds., Annual Bank Conference on Development Economics 1997, The World Bank, Washington, D.C.
5. López, R. (2007). “Structural Adjustment and Sustainable Development”, in G. Atkinson, S. Dietz and E. Neumayer, Handbook of Sustainable Development, Edward Elgar, Cheltenham, UK and Northhampton, MA, USA
6. Myers, Norman and Kent, Jennifer.2005. *The New Atlas of Planet Management*. University of California Press: Berkeley, CA.

7. Pearce, David (2005). Managing Environmental Wealth for Poverty Reduction. Poverty and Environmental Partnership, MDG7 Initiative, UNDP, New York.

Benchmarking: THE UNITED NATION UNIVERSITY

KELOMPOK PAKAR:

PSL-573. LANDUSE PLANNING & BASIN MANAGEMENT

Rural development strategies in developing countries increasingly focus on watershed management. A watershed is an attractive hydrological unit for conserving natural resources and raising agricultural productivity. Socioeconomic factors, however, make successful watershed management very difficult.

Course content: Socioeconomic Issues in Watershed Management: Upstream-downstream relationships in watershed management; Constraints to investment at an individual landholding level; Collective action problems. **Biophysical Issues in Watershed Management:** Water; Soil; Threats to sustainable land use; Soil erosion; Assessing the risk of erosion. **Biophysical Treatments and Technical Interventions:** Introduction to soil and water conservation practices; Vegetative cover; Examples of farming practices that increase vegetative cover and/or conserve soil; Artificial land transformations (soil conservation structures and barriers); Water disposal and water harvesting; Indigenous soil and water conservation practices.

Assessment of physical resources of the land using the latest criteria like remote sensing - Factors influencing the land use pattern - Land use capability classification - usefulness for agriculture - Evaluation of land use pattern - scope - utility - present status - physical biological and other related factors. Watershed management - scope - present status with special reference to drylands - rain water management technology in different watersheds - Pre and post sowing moisture conservation technology - fitting cropping system based on the rainfall pattern, edaphic and socio economic factors of the farmer. Need for alternate land use systems in different watershed areas - waste lands - marginal lands - polluted soils due to industrial effluent and coastal swamp areas - recent concepts and trends in dryland watershed cropping - agrihorticultural system for deep vertisols and alfisols - agrisylviculture for marginal soils - tree farming - nutrient management in tree crop culture - shifts in the pattern of farm utilisation. Other alternate proposition - integrated farming system - scope and concepts for sustaining productivity and income - role of organisation - Governmental - Co-operative sector in promoting watershed management in a collective way over larger areas - Futurology.

Reference

1. Bator & Worthingion. Arid land irrigation in Developing Countries. Pevengu Press.

2. FAO. 2000. Land and Water Linkages in Rural Watersheds Electronic Workshop: Conclusions and Recommendations. FAO, Rome, September 18 – October 27, 2000. http://www.fao.org/ landandwater/ watershed/ watershed/papers/conclusions.pdf
3. John Mathew, R. Water Resources Evaluation, Use and Management. John Wiley and Sons.
4. Kerr, John, and Ganesh Pangare. 2001. Water Harvesting and Watershed Management. 2020 Focus 9 (Overcoming Water Scarcity and Quality Constraints), Brief 9 of 14. International Food Policy Research Institute, Washington DC.
5. Michael,A.M.1984. Irrigation Theory and Practice. Tata Mc Grow Publishing Company Ltd.
6. Palaniappan,SP.1988. Cropping Systems in the Tropics - Principle and Management. Wiley Eastern Ltd., New Delhi
7. Pretty, Jules, Irene Guijt, Parmesh Shah, and Fiona Hinchcliffe. 1995. Joint watershed management: new evidence from the New Horizons project. Indigenous Knowledge and Development Monitor 3(1), April. http://www.nuffic.nl/ciran/ikdm/3-1/articles/pretty.html
8. Ravnborg, Helle Munk, and Maria del Pilar Guerrero. 1998, "Collective Action in Watershed Management: Experiences from the Andean Hillsides." Paper presented at the 7th Meeting of the International Association for the Study of Common Property (IASCP), Vancouver, Canada.
9. Rhoades, Robert. 2002. "Participatory Watershed Research and Management: Where the Shadow Falls." Gatekeeper Series #81. Sustainable Agriculture and Rural Livelihoods Program, International Institute for Environment and Development, London.
10. Stocking, Michael. 1996. Land management for sustainable development: farmers' participation. Chapter 2 in Uitto, Juha, and Akiko Ono. Population, land management, and environmental change. Tokyo: United Nations University. http://www.unu.edu/ unupress/ unupbooks/uu03pe/uu03pe05.htm#2.

BENCHMARKING: MICHIGAN STATE UNIVERSITY

Kelompok Pakar:

Prof Dr Ir Soemarno MS
Prof Dr Ir M. Bisri MT
Prof Dr Ir Z. Kusuma SU
Ir Didik Suprayogo MSc PhD
Dr Ir Sudarto SU
Ir Suryono, MSP PhD

PSL-574. METODE EKOLOGI KUANTITATIF

Course overview: Community ecology is a conceptually complex field that requires understanding of both theoretical and empirical issues. Throughout, there will be much discussion of theory, and you will be expected to become facile with the models and their applications. There will also be several computer labs and directed discussions that are designed to give a more intuitive understanding of the models discussed in lectures. In all classroom activities, including lectures, we expect students to play an active role in classroom learning. This is not a passive science, and there will always be interesting and important issues to be discussed.

Course content: Introduction: Questions and approaches ; opulation growth and dynamics; Interspecific competition; Predation: Consumer-resource models; The ecological niche and mechanistic competition; Modules: apparent competition, mutualism, keystone predation; Stage/size-structured interspecific interactions (Burgett); Food chains and food webs; Incorporating complexities into food webs; Temporal heterogeneity and disturbance; Succession and assembly; Species-area curves and island biogeography (Ryberg); Metacommunities; Spatial heterogeneity and species compositional shifts; Biodiversity and environmental gradients; Species-abundance distributions: Commonness and rarity; Invasive species; Diversity and ecosystem functioning; Ecology of emerging infectious diseases; Global climate change and biodiversity.

Referensi:

1. Gotelli 2001. A Primer of Ecology. 3rd edn. Sinauer Associates
2. Morin 1999. Community Ecology. Cambridge University Press
3. Chase and Leibold 2003. Ecological Niches: Linking Classical and Contemporary Approaches. University of Chicago Press

Benchmarking: Dept. of Biology, Washington University

KELOMPOK PAKAR:

Amin Tri Laksono, S.Si, MSi, Ph.D.
Dr. Ir. Gatot Mujiono
Dr Ir Agung Nugroho MS

PSL-575. SISTEM PRODUKSI BERSIH

Clean Production Systems

Produksi Bersih : dirancang untuk memahami pengertian, tujuan, manfaat serta peraturan dan kebijakan yang berlaku dalam melaksanakan program produksi bersih.

Pengertian produksi bersih. Prinsip-prinsip produksi bersih, khususnya dalam rangka pengelolaan kegiatan-kegiatan produksi agribisnis. Pengelolaan limbah, pemanfaatan limbah, minimisasi limbah dan audit limbah. Keterkaitan antara komponen-komponen lingkungan dengan konsep produksi bersih (serta teknologi bersih), faktor-faktor yang mempengaruhi kegagalan dan keberhasilan dalam implementasi program produksi bersih di lapangan sebagai upaya efisiensi operasi. Strategi Bapedal dalam pelaksanaan Produksi Bersih. Petunjuk Pencegahan dan Penanggulangan Pencemaran Limbah Padat dan Cair Industri. Sertifikasi ISO 14.001.Sistem Pengelolaan Lingkungan. Produksi dan Teknologi Bersih. Peraturan Pemerintah No. 18. 1978: Pengelolaan Limbah B3.

Prinsip-prinsip produksi bersih, khususnya dalam rangka pengelolaan kegiatan-kegiatan industri, pertanian, penyusunan AMDAL dll. yang akrab lingkungan termasuk teknik –teknik melakukan minimisasi timbulan limbah. Keterkaitan antara komponen-komponen lingkungan dengan konsep produksi bersih(serta teknologi bersih), juga faktor-faktor yang mempengaruhi kegagalan dan keberhasilan dalam implementasi program produksi bersih di lapangan sebagai upaya efisiensi operasi.

Referensi:

1. Freeman, H., et. al., (1980) Waste Minimization Opportunity Assessment manual. The United States EPA, Hazardous Waste Engineering Research Laboratory, Office of Research and Development, Cincinnati, Ohio, U.S.A.
2. Freeman, H.M., (1990) Hazardous waste minimization. Mc Graw Hill, Inc., New York, NY., U.S.A., pp. 343.
3. Huisingh, D., Bailey, V., (1982) Making Pollution Prevention Pay: Ecology with Economy as Policy. Donald Huisingh and Vicki Bailey, Pergamon Press, New York, NY. USA., pp. 156.
4. Huisingh, D., Martin, L., Hilger, H., Seldman, N., (1986) Proven Profits from Pollution Prevention: Case Studies in Resource Conservation and Waste Reduction. Institute for Local Self-Reliance, Washington, D.C., pp. 316.
5. Korhonen, M., (Ed.) (1989) Non waste Technology, Vol.II. Technical Research Centre of Finland, pp. 372. Espoo, Finland.
6. Korhonen, M., (Ed.) (1989) Non-Waste Technology, Vol.I. Technical Research Centre of Finland, pp.457. Espoo, Finland.
7. van Weenen, J.C., (1990) Waste prevention, theory and practice (a Ph.D. Thesis). J.C. Van Weenen, Castricum, The Netherlands, pp. 418.

Benchmarking:
Erasmus Center for Environmental Studies, Erasmus University, The Netherlands.