

MANGALORE UNIVERSITY

DEPARTMENT OF BIOSCIENCES

M.Sc. ENVIRONMENTAL SCIENCE

ESH402 ENVIRONMENTAL METEOROLOGY AND GEOLOGY

Course Outcomes:

CO1 Discuss about earth movements.

CO2 Study the geographical concepts related to environment.

CO3 Gain the knowledge of climatology and weather satellite images interpretation.

CO4 Learn in detail radioactivity.

UNIT I (13 hours)

Earth as a planet: Motions of the earth, seasons. Laws of thermodynamics: concept of fluid mechanics. Thermal balance: Heat production and loss, sea-surface interaction. SST, heat islands, electromagnetic spectra: solar radiation, photochemical and photosensitized reactions.

UNIT II (13 hours)

Radioactivity: Origin of radio nuclei, natural and artificial; their effects on the ecosystem; biological effect of radiation. Concepts of residence time of moisture and gaseous components.

UNIT III (13 hours)

Geographical concepts related to environment: economic geography, agro – climatic regions, industry and environment. Energy sources and consumption patterns in urban and rural areas. Climatology: Elements and factors of climate, climatic control, climate change, continental influence on climate, urban and rural climate; artificial climates, climate policy.

UNIT IV (13 hours)

Interpretation of Weather satellite images, surface temperature measurement, cloud top height determination, rain rate and wind velocity measurement and weather prediction, Use of microcomputers in instrumentation and in measurement systems.

References

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2. Bailey R.G., 2002. Ecosystem Geography
3. Beven, K., 2002. Rainfall-Runoff Modeling: The Primer.
4. Ketan Tatu, 1999. Remote sensing for Wetland monitoring & Waterfowl Habitat Management.
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7. Gilbertson, D.D., Kent, M. & Pyatt, K.B., 1985. Practical ecology for Geography and Biology: Survey, Mapping and Data Analysis. Hutchinson.
8. Goudie, A. (ed.), 1990. Geomorphological techniques. Unwin Hyman.

9. Haines – Young, R.H & Petch, J.R., 1986. Physical Geography: its nature and methods. Harper.
10. Jones, A.P., Tucker M.E. & Hart, J.K., 1999. Description and analysis of Quaternary stratigraphic field sections. Quaternary Research Association Technical Guide 7. QRA.
11. Lal, R., 1994. Soil erosion research methods, 2nd ed. Ankeny: SWCS.
12. Matthews, H.M. & Foster, I.D., 1986. Field work exercises in human and physical geography, Arnold.
13. Parsons, T. & Knight, P.G., 1995. How to do your dissertation in geography and related disciplines. Chapman & Hall.
14. Ritchie, W., Wood, M., Wright, & Tait, D., 1988. Surveying and mapping for field scientists. Longman.
15. Rogers, A., Viles, H. & Goudie, A., 1992. The student's companion to Geography. Blackwell
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