#### Mandatory Reading

**Software (ArcGIS) Basics**

* University of Maryland Libraries (2012) Introduction to GIS Using ArcGIS Desktop 10. <https://www.lib.umd.edu/binaries/content/assets/public/gov-info-gis/research-and-instruction/introduction-to-gis-workbook.pdf>

**Lecture/lab 1 - Collection and Management of Geographic Data**

* Burrough (2015) Principles of Geographical Information Systems – 3rd edition (ISBN: 9780198742845) - Chapters 1, 2, 3
* Sutton et al. (2009) A Gentle Introduction to GIS - Chapters 1-5 <https://download.osgeo.org/qgis/doc/manual/qgis-1.0.0_a-gentle-gis-introduction_en.pdf>
* The ArcGIS Book – 10 Big Ideas about Applying the Science of Where – Chapter 1+4

<https://learn.arcgis.com/en/arcgis-book/>

* Berry (1999) GIS Technology in environmental management: a brief history, trends and probable futures - <http://www.innovativegis.com/basis/present/Global/global3.pdf>

**Lecture/lab 2 - Spatial Analysis**

* Burrough (2015) Principles of Geographical Information Systems – 3rd edition (ISBN: 9780198742845) - Chapters 6, 7, 10
* Sutton et al. (2009) A Gentle Introduction to GIS - Chapter 9 <https://download.osgeo.org/qgis/doc/manual/qgis-1.0.0_a-gentle-gis-introduction_en.pdf>
* ESRI (2013) The Language of Spatial Analysis

 <https://www.esri.com/library/books/the-language-of-spatial-analysis.pdf>

* The ArcGIS Book – 10 Big Ideas about Applying the Science of Where – Chapter 5 <https://learn.arcgis.com/en/arcgis-book/>
* Maantay (2002) Mapping environmental injustices: Pitfalls and potenrial of geographic information systems in assessing environmental health and equity. *Environmental Health Perspectives* 110: 161-171.

**Lecture/lab – Cartography and Visualization**

* Burrough (2015) Principles of Geographical Information Systems – 3rd edition (ISBN: 9780198742845) – Chapters 5
* Sutton et al. (2009) A Gentle Introduction to GIS - Chapter 7-8 <https://download.osgeo.org/qgis/doc/manual/qgis-1.0.0_a-gentle-gis-introduction_en.pdf>
* The ArcGIS Book – 10 Big Ideas about Applying the Science of Where – Chapters 2,3,6 <https://learn.arcgis.com/en/arcgis-book/>
* Tao (2013) Interdisciplinary urban GIS for smart cities: Advancements and opportunities. *Geo-Spatial Information Science* 16 (1): 25-34.

**Lecture/lab – Digital Elevation, Remote sensing and Temporal analysis**

* Burrough (2015) Principles of Geographical Information Systems – 3rd edition (ISBN: 9780198742845) – Chapter 11
* The ArcGIS Book – 10 Big Ideas about Applying the Science of Where – Chapter 8 <https://learn.arcgis.com/en/arcgis-book/>
* Natural Resources Canada (2007) Fundamentals of Remote Sensing – Chapters 1+4 <https://www.ldeo.columbia.edu/res/fac/rsvlab/fundamentals_e.pdf>
* Alzberger (2013) Advances in remote sensing of agriculture: Context description, existing operational monitoring systems and major information needs. *Remote Sensing* 5 (2): 949-981.

#### Recommended Reading

*This list is a collection of books and articles related to the themes of the course. The literature on the list is not mandatory, but should be seen as readings that complete and elaborate on the themes that are brought up during the course.*

* Clifford *et al*. (2016) Key methods in geography. SAGE, Los Angeles (3rd edition), chapters 16-18, 25-28, 34, 37
* Cinderby *et al*. (2008) Participatory GIS and its application in governance: the example of air quality and the implications for noise pollution. *Local Environment* 13 (4): 309-320.
* Portman (2014) Visualization for planning and management of oceans and coasts. *Ocean and Coastal Management* 98: 176-185.
* Ayanlade and Drake (2016) Forest loss in different ecological zones of the Niger Delta, Nigeria: evidence from remote sensing. *GeoJournal* 81: 717-735.
* Natural Resources Canada (2007) Fundamentals of Remote Sensing – Chapters 2+5 <https://www.ldeo.columbia.edu/res/fac/rsvlab/fundamentals_e.pdf>
* Karlson and Ostwald (2016) Remote sensing of vegetation in the Sudano-Sahelian zone: A literature review from 1975 to 2014. *Journal of Arid Environments* 124: 257-269.