The development of GIS technology and the inclusion of a number of courses in GIS and remote sensing in academic programme at various undergraduate and postgraduate levels are noteworthy. Perhaps the most significant single development in the world is the linkage of results of remote sensing data analysis to GIS for its integration with allied application areas. This book has been conceived with the objective of symbioting these two technologies and making available the relevant literature for the use of scientists, teachers and students of engineering and technology. The first part of the book deals with map language, the second part enumerates remote sensing principles and techniques, while the third part highlights the GIS principles as well as the principles of spatial models and conceptual design of GIS database management techniques. The final part gives a detailed account of the linkage and integration of parts two and three and their current and potential applications to urban and municipal administrations.

Contents: Map language; Remote sensing – basic principles; Microwave remote sensing; Remote sensing platforms and sensors; Visual image interpretation; Digital image processing; Fundamentals of GIS; Spatial data modelling; GIS data management; Data input and editing; Data quality issues; Data analysis and modelling; Integration of remote sensing and GIS; Urban and municipal applications.

KEY SELLING POINTS
♦ Can be used in two ways – as a textbook for intro courses in remote sensing and geographical information systems (GIS) – and as a reference book for practitioners who use spatial data and its analysis in their professional work.

BOOK INFORMATION
ISBN: 1 904798 08X
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Geographic Information Systems (GIS) helps us understand what belongs where. GIS is a computer-based tool that analyzes, stores, manipulates and visualizes geographic information, usually in a map. Never in the history of mankind have we had more pressing issues in need of a geospatial perspective. These global issues require pervasive, complex, location-based knowledge that can only come from a GIS.

GIS and Remote Sensing in Wildfire Response. Back in August 2013, a wildfire hit Yosemite National Park, California. All said and done, experts estimated the extent of the fire to be 15 times the size of Manhattan island. Of all fires in California history, it was the fourth largest. How was GIS used to respond to this wildfire? A geographic information system (GIS) is a system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data. The current trend for geographical information system (GIS) is that accurate mapping and data analysis are completed while in the field. Depicted hardware (field-map technology) is used mainly for forest inventories, monitoring and mapping. Remote sensing collects raster data that can be further processed using different bands to identify objects and classes of interest, such as land cover. When data is captured, the user should consider if the data should be captured with either a relative accuracy or absolute accuracy, since this could not only influence how information will be interpreted but also the cost of data capture.