



# CATALOG

2023



Oryson  
Press



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## Agricultural Water Pollution and Management

Nadine Amlec

Agriculture is an essential activity to sustain ourselves. However, it comes with environmental issues such as waterlogging, desertification, salinization, erosion, etc., that affect irrigated areas. As well as the problem of downstream degradation of water quality by salts, agrochemicals and toxic leachates. This contributes to water pollution, further harming our environment. Agricultural pollution can directly as well as indirectly affect our health and well-being, making it an important area of study, so as to find proper solutions for long-term sustainable care of the environment as well as of ourselves. This book is beneficial for anyone in the field of agriculture.



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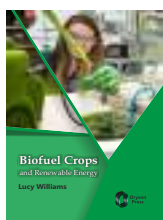
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## Air Pollution and Its Impacts on Plant Growth

Dr Sudershan Paliwal

Primary air pollutants like carbon monoxide from car exhausts and sulphur dioxide from burning fossil fuels contribute mainly to air pollution. Governments, all over the world, have adopted regulatory and other policy measures to minimize negative effects and ensure that environmental quality standards are achieved. Chemicals such as sulphur dioxide, ozone, fluorides and peroxyacyl nitrates damage the leaves of plants leading to the death of the entire plant. Other chemicals have similar effects. This book explores the detrimental effects of air pollution on plants and their growth. It describes the structure of plant cells, the function of different kinds of cells, and how plants reproduce. This valuable book will be an essential addition to any plant-science student's and professional's bookshelf.



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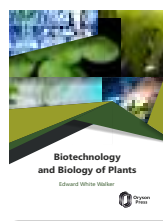
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## Biofuel Crops and Renewable Energy

Lucy William

Biofuels are produced from living organisms and made from biomass conversion; thermal, chemical or biochemical. This produces fuel in solid, liquid, or gas form. Corn and sugarcane are used for ethanol, sugar/starch crops, sugar beet, sweet sorghum. Cellulosic crops are also gaining attention, such as switchgrass, miscanthus, corn stover, poplar, and grass. Soy bean in the US and rapeseed in Europe are the primary feedstock for biodiesel, palm oil in Malaysia, mustard, camelina, and jatropha are considered promising. Crop wastes and residues can be converted to ethanol, biodiesel, and methane gas too. Renewable energy is energy that comes from resources which replenish naturally on a human timescale; sunlight, wind, rain, tides, waves and geothermal heat. This book will contribute to the study of energy, climate change and climate economics. It will prove essential reading for professionals in the fields of natural resources, climate change and energy. Students in environmental science faculties, economics departments, business schools and engineering schools will also find this important and enriching.



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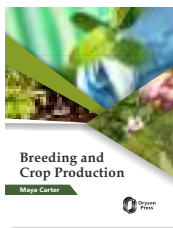
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## Biotechnology and Biology of Plants

Edward White Walker

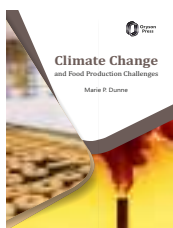
Plant biotechnology is the art, science and application of knowledge obtained from studying of life sciences. This is done in order to create technological improvements and change the genetics of plants so as to produce desired characteristics in plant species. These include picking plants with desirable characteristics for propagation, to more advanced techniques implemented at a molecular level. Botany as a study has developed beyond study of how and why plants survive. Technological advancement has evolved the field into the study of how plants are used in biotechnology; their significance in the ecosystems and how they can continue to provide food, medicines, and fuel to a constantly increasing global population. This book will help students, teachers and research workers in the field of plant biotechnology, physiology, agriculture, and plant science.



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## Breeding and Crop Production Maya Carter

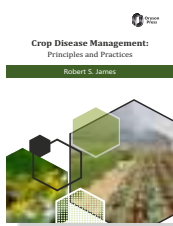
Plant breeding involves a broad range of activities. There are initial steps like pre-breeding, leading to the development of an improved germplasm. These can be used either for further breeding at other venues, for screening in national or other programmes, or for direct use. Plant breeding involves primarily tissue culture techniques; such as an elimination of virus, micro propagation regeneration from explants, protoplast fusion, and so on. Others involve molecular biology. Two major areas of plant molecular breeding are analysis of the nucleic acids or proteins in plants or pathogens, and production of transgenic plants. Management and retrieval of this data obtained from nucleic acid or protein analysis, also known as bioinformatics, is another area of significance. This book deals with ground-breaking methods for breeding new varieties of major crops with resistance to environmental stresses, that otherwise limit crop production worldwide.



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## Climate Change and Food Production Challenges Marie P. Dunne

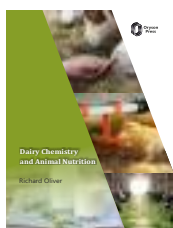
Climate change and food production are global and interrelated processes. Global warming is projected to have substantial impacts on conditions affecting agriculture; such as temperature, carbon dioxide, glacial runoff, precipitation and the interaction of these elements. These conditions determine the carrying capacity of the biosphere to produce enough food for its human population and domesticated animals. The overall effect of climate change on food production depends on the balance of these effects. In spite of technological advances, like improved varieties, genetically modified organisms, and irrigation systems, weather is still a key factor in agricultural productivity. Other factors are soil properties and natural communities. This book analyses the challenges faced by the agricultural sector; including the direct impacts of climate change on food production. This is an invaluable resource for anyone interested in exploring the impacts of climate change on one of the most important sectors of the world economy.



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## Crop Disease Management: Principles and Practices Robert S. James

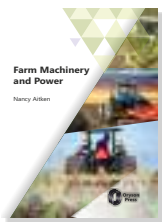
Practices that reduce the initial levels of inoculums; substances used for inoculation, depend on selecting appropriate planting materials, destruction of crop residues, elimination of living plants that carry pathogens, and crop rotation. Selection of appropriate planting material can involve planting one or multiple resistant cultivars, using certified seed and ensuring that disease is not spread on any of the equipment. Burying crop residues can destroy some pathogens, when ploughed deeply enough, but some pathogens can survive, and benefit from this process. Burning crop debris is a successful method of destroying many pathogens, especially with an intense fire. This causes loss of nutrients, smoke pollutions, increased soil erosion and addition to the greenhouse effect, though. Removing alternate hosts and weeds can delay an outbreak, but often inoculums find its way to crop plants via wind or another factors. Crop rotation refers to the successive planting of different crops in the same area, sometimes leaving a piece of land fallow. The rate of disease spread can be reduced by the spacing of plants, humidity, moisture levels, and exposure to sunlight. Tillage practices have indirect effects on the spread of plant pathogens, although, some forms of inoculums can be spread extensively during tillage. Sowing practices, such as changing time, depth and direction of sowing, and changing the density of the crop can protect plants from pathogens. This book is a useful, updated and concise, in this subject.



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## Dairy Chemistry and Animal Nutrition Richard Oliver

Dairy cattle are cattle cows bred for their ability to produce large quantities of milk. This milk is used to make dairy products. Dairy cows generally are of the species *Bos Taurus*. The contemporary bovine industry is more specialized, and most dairy cattle have been bred specifically to produce large volumes of milk. Dairy cows may be found either in herds on dairy farms where dairy farmers own, manage, care for, and collect their milk, or on commercial farms. Herd sizes vary in different places depending on landholding, culture and social structure. Animal nutrition focuses on the dietary requirements of domesticated animals; especially those in agriculture and food production. The seven major classes of nutrients are carbohydrates, fats, fibre, minerals, protein, vitamin, and water. These nutrients can be categorized as either macronutrients or micronutrients. Poor health can be caused by a lack of required nutrients or, in extreme cases even excess of a required nutrient. This book provides a collection of reviews of the almost all active areas of research in biochemistry, medicine and related fields of biological sciences and is recommended for students, researchers and dairy farmers, amongst others.



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## Farm Machinery and Power

Nancy Aitken

Farm machinery, mechanical devices, including tractors and implements, are used in farming to save labour. Farm machines include simple hand held implements used since prehistoric times, to the complex harvesters of modern mechanized agriculture. For crop production they include handling of residues from previous crops primary and secondary tillage of the soil; fertiliser distribution and application seeding, planting, and transplanting cultivation pest control harvesting transportation; storage, premarketing processing, drainage irrigation and erosion control, and water conservation. In addition to embodied energy in inputs such as fertilizer, energy requirements for agriculture and industry, requirements can be divided between demands for shaft power and demands for process heat. Firewood and charcoal can be used to meet these requirements, but there are other suitable sources too. This book provides all the relevant information in the field of farm machinery with focus on the basic principle of working systems and devices. This is a good reference book for agriculture and agricultural engineering students. As well as a comprehensive book for practicing engineers specializing in field of farm mechanization.

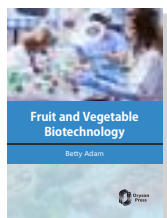


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## Food Science Processing Technology

Martha Green

This process includes a set of physical, chemical or microbiological methods and techniques used to transform raw ingredients into food and its transformation into other forms in food processing industry. Food science and technology is the application of science to satisfy the needs of society for sustainable food quality, safety and security. Food technology draws upon and integrates the application of other technologies to food, such as packaging, materials science, engineering, instrumentation, electronics, agriculture and biotechnology. Food scientists develop and improve ways to process raw ingredients, such as grains, meats, milk, fruit and vegetables to safe, tasty and nutritious foods. The study of food science and technology involves application of the basic science chemistry, nutrition, engineering, microbiology and the latest research developments in the handling, processing and packaging of foods from the farm to the consumer's plate. The book will serve as a useful reference material to both the students and professionals. This book aims to introduce them to the broad range of processing techniques and recent trends that are used in food processing.



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## Fruit and Vegetable Biotechnology

Betty Adam

In the world, fruit and vegetable production and consumption has increased over the past few years. Rise consumer demand has led to greater awareness of food safety issues and increased need for convenience and quality. Historically speaking, processing of fruits and vegetables in the simplest form like pickling, sun-drying and making preserves has been practiced from ancient times. Since then it has been progressing fairly well and has been meeting the entire local demand and has successfully entered the exports market. Today, fruits and vegetables are processed into a variety of products such as juices and concentrates, pulp, canned and dehydrated products, jams and jellies, pickles and chutneys. The extent of processing of fruits and vegetables varies from place to place. Assuring the safety and quality of the produce needs the selection of high quality horticultural produce for processing, and the implementation of good practice during processing operations in order to maintain produce quality and assure safety of the final product. This book addresses the critical issues that must be taken care of; if the processed fruit and vegetable products are to meet consumer and market demand for convenience, quality and safety. This book is valuable to small processors, trainers, extension workers and non-governmental organizations who provide training and support to individuals engaged in fruit and vegetable biotechnology for sale. It also provides a useful source of information for consumers of processed horticultural products.

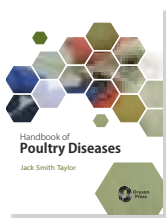


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## Handbook of Dairy Products

Sophia Fernandes

Nutrition can have remarkable influences on fertility. Inadequate energy intake and/or inadequate body fatness early postpartum can retard resumption of ovulatory cycles, which extends the interval from calving to first estrus, reduces conception rates at first postpartum AI and increases late embryonic losses after first postpartum AI. In addition to energy status, there are some well- characterized effects of nutrition on fertility. Nutritional deficiencies, such as antioxidant nutrients (vitamin E and Se), influence immunity status of the uterus and the ability of white blood cells to kill bacteria that invades the postpartum uterus. "This makes the cow more likely to develop retained fetal membranes and metritis, both of which reduce fertility," explains Santos. High-producing lactating dairy cows do not require diets with 19-20 percent crude protein to achieve productions above 26,000 pounds, says Santos. "What these cows really need is a diet that is balanced for the energy and protein components and provides adequate amounts of metabolizable protein with an adequate amino acid profile." However, producers and nutritionists often conclude that cows need very high crude protein diets. "In fact, well-balanced diets that contain 17 to 18 percent crude protein are enough to provide all the amino acid needs of high-producing cows even in early lactation," explains Santos. The contents of the book will help scientists and academics to examine, modify and improve this subject.



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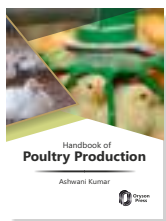
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### Handbook of Poultry Diseases

Jack Smith Taylor

If a poultry producer is to reap all the benefits from the investment of money, time and labour, he must maintain a healthy and parasite-free flock. The health status of his birds is important to the producer whether he maintains a backyard flock or commercial poultry flock. Constant monitoring of the flock is the first step in detecting diseases. Identification of the cause and appropriate treatment can prevent a minor condition from becoming an unprofitable enterprise. There are many common and important diseases which can affect the respiratory system of poultry. Poultry refers to birds that people keep for their use and generally includes the chicken, turkey, duck, goose, quail, pheasant, pigeon, guinea fowl, peafowl, ostrich, emu and rhea. Due to modern systems of management, usually with high poultry densities, these diseases are able to readily spread. Some important measures for their prevention are slaughtering of all apparently ailing birds, segregating of in contact in groups of 10 to 15 each, removal of all infective materials such as droppings, residues of poultry cleanliness and provision of separate attendants for each group of birds. This book explores the latest advances in the field of this subject. The subject matter, both as regards the arrangement of chapters as well as contents, is designed to meet the requirement of the students in several Universities.



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### Handbook of Poultry Production

Ashwani Kumar

Poultry are kept for the production of eggs and meat. Poultry are kept in most areas of the world and provide an acceptable form of animal protein to most people throughout the world. During the last decade, many developing countries have adopted intensive poultry production in order to meet the demand for this form of animal protein. Intensively kept poultry is seen as a way of rapidly increasing animal protein supplies for rapidly increasing urban populations: poultry are able to adapt to most areas of the world, are relatively low priced, reproduce rapidly, and have a high rate of productivity. Poultry can be kept by enthusiastic individuals in a back garden or on an allotment, or intensive farming production systems with a large acreage and high turn-over. However, the knowledge needed for looking after the birds in any number is generally the same, whether they are housed or free-range. While many intensive operations concentrate on just one or two breeds of bird, for the enthusiast there are a wide number of broiler (birds raised for meat) and egg-laying breeds available including rare breeds such as the We summer and the Plymouth Rock. For every student, teacher and researcher in the subject it offers a solid basis for an in-depth understanding of the entire subject area.



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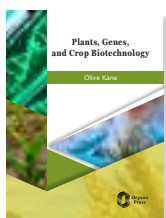
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### Land, Soil and Water Resources

Nadine Amlee

Natural resources occur within environments that exist relatively undisturbed by humanity, in a natural form. A natural resource is often characterized by amounts of biodiversity and geo diversity existent in various ecosystems. Natural resources are derived from the environment. Some of them are essential for our survival while most are used for satisfying our needs. Natural resources may be further classified in different ways. Water is a vital renewable natural resource. Three fourths of the earth's surface is covered with water. It is therefore appropriately called the 'water planet'. The oceans support a rich variety of plant and animal life. The ocean water however, is saline and not fit for human consumption. Fresh water accounts for only about 2.7 per cent. Nearly 70 per cent of this occurs as ice sheets and glaciers in Antarctica, Greenland and mountain regions. With the growing impact of climate change on our daily lives it has become increasingly important to gain awareness of our land, water and soil resources in today's times. Our awareness helps us to better use, manage and protect them leading to less pollution and better preservation of the environment. This book acts as a comprehensive guide for the same.



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### Plants, Genes, and Crop Biotechnology

Olive Kane

Just five decades have passed since Watson and Crick deciphered the double helix structure of DNA - the stuff of genes - and laid the groundwork for modern biotechnology. Today we know the full genetic sequence of more than sixty living organisms. In 2001, more than 5.5 million farmers worldwide planted about 52.6 million hectares of crops that were genetically manipulated. Now the area has expanded further with India and Indonesia joining twelve other countries, including China, Mexico, South Africa, and Argentina, in approving the commercial planting of GM crops. But, agricultural biotechnology means a lot more than the creation of GM crops. It also involves the use of tissue culture to rapidly propagate disease free seedling plants and to create new hybrids between plants that do not cross naturally, the use of sophisticated DNA based genetic markers that allow breeders to follow and select for important traits more easily, and the use of DNA chips and other DNA based diagnostic techniques to characterize pathogen populations for more effective deployment of resistant varieties. This book sheds light on the same while also elaborating on how the future of the world's food systems will be revolutionized by plant biotechnology.

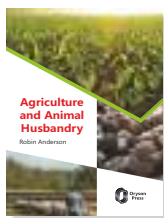


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## Seed Science and Technology

Zoya Abdallah

Matter that makes up every known substance to man occurs in nature in three distinct forms - solid, liquid and gas. Irrespective of their classification all forms of matter consist of molecules which can be further classified into atoms. These atoms interact intensely producing the mechanical, thermal, electrical, magnetic and optical properties of the state of matter. Depending on the material involved and the conditions in which it was formed, the atoms may be arranged in a regular, geometric pattern or irregularly. The bulk of solid-state physics as a general theory and not really a proven form of research is focused on crystals. Primarily, this is because the periodicity of atoms in a crystal its defining characteristic - facilitates mathematical modelling. The book explores such concepts along with other related subject matter.

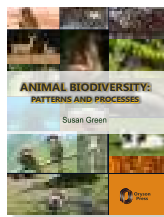


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## Agriculture and Animal Husbandry

Robin Anderson

A large number of farmers depend on animal husbandry for their livelihood. The animals supply milk, meat, eggs, wool and hides, animals, mainly bullocks, and are the major source of power for both farmers and dryers. Animal husbandry plays an important role in the rural economy. Agriculture is demographically the broadest economic sector. This book has been written to advance the fascination, and alleviate the challenges that are created in these sectors. It will prove to be an interesting insight into the world of animals, farming and agriculture.

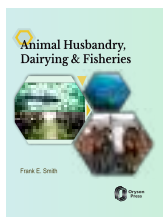


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## Animal Biodiversity: Patterns and Processes

Susan Green

This book contains a series of scientific articles on animal biodiversity. It addresses the economic, institutional and social challenges confronting scientists and policy makers in conserving biodiversity and ecosystem services, that are critical for sustaining human wellbeing and development. Biodiversity refers to the wide number and variety of plants, animals and other existing organisms. It is an essential component of nature and it ensures the survival of human species by providing food, fuel, shelter, medicines and other resources to mankind. Therefore, it is an essential area of study; so as to sustain that biodiversity, and also use that diversity for our benefit and development.



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## Animal Husbandry, Dairying & Fisheries

Frank E. Smith

Animal Husbandry, Dairying and Fisheries is intended primarily as a text for the basic course in animal industries, especially farm animals. It should prove useful as a reference book for those involved in livestock production. Animal husbandry is the management and care of farm animals by humans for profit, in which genetic qualities and behaviour, considered to be advantageous to humans, are further developed. The term can refer to the practice of selectively breeding and raising livestock to promote desirable traits in animals for utility, sport, pleasure, or research. The study attempted in this book pin points the effects of dairying on rural development through the socio-economic changes among the dairy households; the nature, magnitude and dimension of dairy development. A fishery may involve the capture of wild fish or raising fish through fish farming or aquaculture. These topics will be discussed in detail in this book.

# ANIMAL HUSBANDRY

6



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## Dairy and Poultry Industries

Prof Gamal

Developments in the dairy and poultry industries during the last decade have been important enough to produce a considerable amount of materials on dairy and poultry farming, as well as on processing of related products. Dairy farming is a class of animal husbandry enterprise for long-term production of milk. This could be from dairy cows or from goats and sheep, which are either processed on-site or transported to a dairy factory for processing and eventual retail sale. The transformation to the poultry industry is a major commercial activity and has happened over the last four decades. This has been made possible by sizeable investments in breeding, hatching, rearing and processing. Dairy and poultry industries form a significant part of the agricultural system. This book is a must-read for any professional from these industries as well as for students and researchers.



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## HACCP in Meat, Poultry and Fish Processing

Monica Stinson

The Hazard Analysis Critical Control Points or HACCP concept uses a scientific approach that is applied to process control. The Food Safety Inspection Service or FSIS, views HACCP as a means of preventing the occurrence of health and safety hazards in plants producing meat and poultry products. This is done by ensuring that controls are applied at any point in a food production system where hazardous situations can potentially occur. These hazards may include biological, chemical, or physical adulteration of food products. The Food and Drug Administration or FDA and the United States Department of Agriculture or USDA require mandatory HACCP programs for juice and meat to ensure food safety and to protect public health. This book is essential reading for quality control personnel, production and processing managers in the food industry, and for government regulatory officials. It will also be useful to academic researchers studying the microbiology and quality of meat, poultry and fish products.



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## Milk and Milk Products Technology

Mary C. Tyson

Milk is a valuable nutritious food that has a short shelf-life and requires careful handling. Milk is highly perishable because it is an excellent medium for the growth of microorganisms particularly bacterial pathogens that can cause spoilage and diseases in consumers. Milk processing allows the preservation of milk for days, weeks or months and helps to reduce food-borne illness. The usable life of milk can be extended for several days through techniques such as cooling (which is the factor most likely to influence the quality of raw milk) or fermentation. Pasteurization is a heat treatment process that extends the usable life of milk and reduces the numbers of possible pathogenic microorganisms to levels at which they do not represent a significant health hazard. Milk can be processed further to convert it into high value, concentrated and easily transportable dairy products with long shelf lives, such as butter, cheese and ghee.



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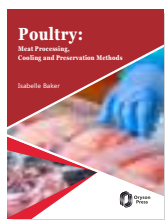
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## Milk Testing A Laboratory Control of Milk

Taylor Aitken

Dairy foods and ingredients in general and fermented milk products in particular are well recognized for their nutritional and therapeutic attributes and as functional foods. The market of functional foods, in particular fermented milk products, is expected to triple in next five years world over because fermented milks possess many advantages like easy production, better keeping quality and nutritive value, easier digestibility, pleasing flavour and taste as well as strong therapeutic potentials. Testing of raw milk is required to determine the composition (fat, protein), the bacterial and biological levels (Total Bacteria Count and Total Somatic Cell Count) as well as to determine the inhibitory substances such as dirt, antibiotics, disinfectants etc. Milk is a fluid secreted by the mammary glands of healthy cows of the bovine species during the usual lactation period by means of complete and regular milking. It is a concentrated food, designed to initially protect the newly born animal by supplying concentrated antibodies to counter disease (passive immunity), until the immune system of the young animal is fully functional, and thereafter also to ensure rapid growth until the young are more independent.





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## Poultry: Meat Processing, Cooling and Preservation Methods

Isabelle Baker

Meat is a highly perishable product and quickly becomes unfit to eat through microbial growth, chemical change and breakdown by endogenous enzymes making it possibly dangerous to health. These processes can be curtailed by reducing the temperature sufficiently to slow down or inhibit the growth of microorganisms, by heating to destroy organisms and enzymes (cooking, canning), or by removal of water by drying or osmotic control (binding the water with salt or other substances so that it becomes unavailable to the organisms). Unlike vegetables, Meat is frozen without any prior treatment, so there is little or no loss of nutrients during the freezing procedure, nor during frozen storage apart from vitamin E. Poultry is derived from the skeletal muscles of various birds and is a good source of protein, fat, and vitamins and minerals in the diet. Proteins are unchanged during frozen storage but fats are susceptible to rancidity. Pork and poultry meat are more susceptible since they are richer in unsaturated fatty acids than other meats, and comminuted meat is also very susceptible to rancidity because of the large surface area which is accessible to oxygen. This book contains the processing of fresh meats, curing, smoking preservation and packaging methods of processed meat etc. The book is very useful for entrepreneurs, technocrats and those who want to diversify into this field.



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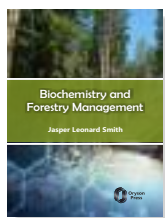
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## Poultry Meat Science

Emily Watson

The activities of the meat sector may be divided into three stages: slaughtering, meat cutting and further processing. Each stage involves completely different technical operations which must not be viewed as separate and independent processes. There are significant interactions between the stages and shortcomings at one stage can have a serious negative impact on the product or process in a subsequent stage. They may influence technological, biochemical or microbiological aspects. Physical test methods focus either on the actual condition of meat and meat products, or on the conditions around the product, for example in storage rooms, packages, etc. Meat was originally processed to preserve it, but since the various procedures cause so many changes in texture and flavour it is also a means of adding variety to the diet. The book outlines the most basics of Meat Science and their application in meat processing technology.



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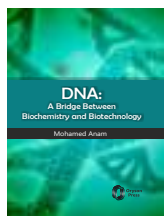
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## Biochemistry and Forestry Management

Jasper Leonard Smith

Biochemistry studies the processes involved at a molecular level, of living things. This involves aspects of cell development, relation of the cell structure to function, how cells communicate with each other to fight disease, regulate an organism's development, and metabolise food and oxygen. Biochemists plan and conduct experiments to isolate, quantify and analyse hormones, enzymes, and toxins, and to determine the effects of substances like drugs, food and toxins on biological processes. They may also develop new analytical techniques to detect pollutants and their metabolites, or to study biological processes.



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## DNA: A Bridge Between Biochemistry and Biotechnology

Mohamed Anam

The last two decades of cloned-DNA sequence studies have revealed detailed knowledge about gene structure and organization. It has provided insight into regulatory pathways, with the aid of which gene expression is controlled by the cells, especially in those organisms with basic vertebrate structure. Recombinant DNA technology engineers microbial cells for producing foreign proteins. Its success solely depends on the precise reading of equivalent genes made with the help of bacterial cell machinery. This process fuels many advances related to modern molecular biology. The nucleus is the most prominent organelle in a cell. It contains the equivalent of the cell's genetic material or DNA. DNA determines the cell's identity, masterminds its activities, and has the blueprint for the body's proteins. Replication of DNA in cell division is a significant step.

# BOTANY

8



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## Biotechnology In Plant Improvement

Scarlet Thomson

Developments in the dairy and poultry industries during the last decade have been important enough to produce a considerable amount of materials on dairy and poultry farming, as well as on processing of related products. Dairy farming is a class of animal husbandry enterprise for long-term production of milk. This could be from dairy cows or from goats and sheep, which are either processed on-site or transported to a dairy factory for processing and eventual retail sale. Indian Poultry Industry is one of the fastest growing segments of the agricultural sector today. The production of eggs and broilers has been rising at a rate of 8 to 10% per annum. A very significant feature of India's poultry industry is its transformation to a major commercial activity in about four decades. This has been made possible by sizeable investments in breeding, hatching, rearing and processing. Indian farmers have moved to rearing hybrids such as Hyaline, Shaver, and Babcock which ensure faster growth, and excellent feed conversion and high profits to the farmers who rear them. Dairy and poultry industries form a significant part of the agricultural system. This book is a must-read for any professional from these industries as well as for students and researchers.



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## Botanical Analysis of Plant Cells

Mia Sebastian

Plant cells are eukaryotic cells; they are cells with a membrane-bound nucleus. In contrary to prokaryotic cells, the DNA in a plant cell is found within the nucleus. Plant cells also contain other membrane-bound organelles; that are tiny cellular structures that carry out specific functions necessary for normal cellular operation. Organelles do everything from producing hormones and enzymes to providing energy for a plant cell. Plant cells are similar to animal cells in various ways, but are larger than animal cells. Plant cells are also more similar in size to each other and are typically rectangular or cube shaped. They also contain structures, not found in an animal cell; the cell wall, a large vacuole, and plastids. This book describes, in detail, the structure and function of different kinds of plant cells and how plants reproduce. Any student of plant science will greatly benefit from such a book. It is the perfect companion to understand and expand one's knowledge, for professionals too.



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## Current Trends in Plant Biology

Alexa Huston

Plants, especially green plants, are multi cellular eukaryotes of the kingdom plantae; along with flowering plants, conifers and other gymnosperms, ferns, clubmosses, hornworts, liverworts, mosses and green algae. Green plants have cell walls with cellulose and obtain most of their energy from sunlight through photosynthesis. Some plants are parasitic and have lost their ability to produce required amounts of chlorophyll or to photosynthesize. Botany is the scientific study of plants and is a branch of biology. Green plants provide most of the world's molecular oxygen and form the basis of most of the earth's ecologies; especially on land. Plants that produce grains, fruits and vegetables form mankind's consumption. Plants are used as ornaments and have served as the source of most medicines and drugs, in the past. Through photosynthesis, most plants use sunlight to convert carbon dioxide from the atmosphere, plus water, into simple sugars. These sugars are then used as building blocks and form the main structural component of the plant. Parasitic plants, on the other hand, use its host to grow. Some plants grow using oxygen dissolved in the surrounding water, and a few specialized vascular plants, like mangroves, can grow with their roots in anoxic conditions. Molecular biology are revolutionizing the study of plants and will be used to discover the mechanisms of development and to control such processes. This book explores plant biology in depth.



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## Stem Cell Bioengineering and Tissue Regeneration

Margrette E. Griffin

Tissue engineering is an interdisciplinary field that applies the principles and methods of bioengineering, material science and life sciences towards the assembly of biologic substitutes that will restore, maintain and improve tissue functions following damage either by disease or traumatic processes. The general principles of tissue engineering involve combining living cells with a natural/synthetic support or scaffold to build a three-dimensional living construct that is functionally, structurally and mechanically equal to or better than the tissue that is to be replaced. This book summarizes our current state of knowledge in stem cell research and integrates basic stem cell biology with regenerative medicine in an overall context. It is an essential reference for students, research fellows, academic and industrial scientists, and clinicians.

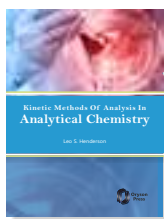


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## Tissue Science Technology

Daniel C. Boris

The Bioengineering of tissues and organs, sometimes called tissue engineering and at other times regenerative medicine, is emerging as a science, technology, and an industry. The tissue is a cellular organizational level intermediate between cells and a complete organism. Hence, a tissue is an ensemble of cells, not necessarily identical, but from the same origin, that together carry out a specific function. An important component in the early development of tissue engineering was the parallel development of artificial biomaterials. In the mid-1960s, artificial skin for burn victims was being pursued as a symptomatic therapy, and later, synthetic fibers were being tried as artificial skin grafts for burn treatment. In the early 1970s, there were concerted efforts to treat artificial surfaces to be used in implants in ways that would enable them to avoid causing blood coagulation, by applying special heparin complex coatings, for example. Tissue engineering is a newly emerging biomedical technology and methodology to assist and accelerate the regeneration and repairing of defective and damaged tissues based on the natural healing potentials of patients themselves. This book delves deep into the various applications of tissue engineering and will be useful to biotechnologists, biologists, agriculture scientists, researchers, teachers and students.

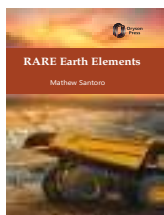


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## Kinetic Methods of Analysis in Analytical Chemistry

Leo S. Henderson

Analytical chemistry is often described as the area of chemistry responsible for characterizing the composition of matter, both qualitatively (what is present) and quantitatively (how much is present). This description is misleading. The basic types of reactions used for determinative purposes encompass the traditional four in equilibrium based measurements: precipitation (ion exchange), acid base (proton exchange), redox (electron exchange) and complexation (ligand exchange). These four basic types, or cases that can be reduced to them, are also found in kinetic based measurements with some distinguishable trends. The influence of concentration on the position of a chemical equilibrium is described in quantitative terms by means of an equilibrium constant expression. Such expressions are important because they permit the chemist to predict the direction and completeness of a chemical reaction. However, the size of one equilibrium constant tells us nothing about the rate (the kinetic) of the reaction. A large equilibrium constant does not imply that a reaction is fast. In fact, we sometimes encounter reactions that have highly favorable equilibrium constants but are of slight analytical use because their rates are low. This book provides a clear and concise understanding of the principles, applications and limitations of the various techniques involved in analytical chemistry.

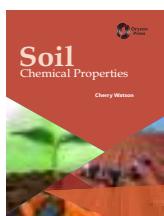


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## RARE Earth Elements

Mathew Santoro

A rare-earth element (REE) or rare-earth metal (REM), as defined by IUPAC, is one of a set of seventeen chemical elements in the periodic table, specifically the fifteen lanthanides, as well as scandium and yttrium. Scandium and yttrium are considered rare-earth elements because they tend to occur in the same ore deposits as the lanthanides and exhibit similar chemical properties. Rare-earth elements are Cerium (Ce), Dysprosium (Dy), Erbium (Er), Europium (Eu), Gadolinium (Gd), Holmium (Ho), Lanthanum (La), Lutetium (Lu), Neodymium (Nd), Praseodymium (Pr), Promethium (Pm), Samarium (Sm), Scandium (Sc), Terbium (Tb), Thulium (Tm), Ytterbium (Yb) and Yttrium (Y). Due to their geochemical properties, rare earth elements are typically dispersed and not often found concentrated as rare earth minerals in economically exploitable ore deposits. This book talks about each of them in great detail. It is an informative guide for anyone who wishes to procure knowledge on the subject.



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## Soil Chemical Properties

Cherry Watson

A soil chemical property is the study of the chemical characteristics of soil. Soil chemistry is affected by mineral composition, organic matter and environmental factors. Until the late 1960s, soil chemistry focused primarily on chemical reactions in the soil that contribute to pedogenesis or that affect plant growth. Since then, concerns have grown about environmental pollution, organic and inorganic soil contamination and potential ecological health and environmental health risks. Consequently, the emphasis in soil chemistry has shifted from pedology and agricultural soil science to an emphasis on environmental soil science. Knowledge of environmental soil chemistry is paramount to predicting the fate of contaminants, as well as the processes by which they are initially released into the soil. Once a chemical is exposed to the soil environment myriad chemical reactions can occur that may increase or decrease contaminant toxicity. These reactions include adsorption/desorption, precipitation, polymerization, dissolution, complication and oxidation/reduction. These reactions are often disregarded by scientists and engineers involved with environmental remediation. Understanding these processes enable us to better predict the fate and toxicity of contaminants and provide the knowledge to develop scientifically correct, and cost-effective remediation strategies. This book contains vast knowledge on the subject which is explained in a simple manner to appeal as much to experts as to general readers.



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### Spectroscopy

Mark Brown

Spectroscopy and spectrography are terms used to refer to the measurement of radiation intensity as a function of wavelength and are often used to describe experimental spectroscopic methods. Daily observations of colour can be related to spectroscopy. Spectroscopic studies were central to the development of quantum mechanics and included Max Planck's explanation of blackbody radiation, Albert Einstein's explanation of the photoelectric effect and Niels Bohr's explanation of atomic structure and spectra. Spectroscopy is used in physical and analytical chemistry because atoms and molecules have unique spectra. The book explores the subject of Spectroscopy and offers a foundation of knowledge towards the same. Topics include - structure of solids, atomic theory, atomic orbitals, oxidation and reduction, spectroscopic reactions, etc.



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### A Handbook of Information Technology

Kenny Arthur

This book explores the modern era of information technology, focusing on 1950s and onwards. Some of the aspects discussed in it are: what is information technology, how did it come to be, and develop into what we know and understand as information technology, today. This is a thorough exploration of the structure of information science and how it spearheaded advances in technology. Information science is defined as the science dealing with the efficient collection, storage and retrieval of information; which is exactly what the book deconstructs in order to understand modern day information technology. This book is a perfect companion to anybody in the information technology sector.



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### Computer Fundamentals

Kristen White

This book presents how a computer system functions and the basics of programming. A computer is a progressive electronic device, that takes raw data as input from the user and processes it under the control a set of instructions (called program), gives the result (output), and saves it for future use. The hardware and software work together in digital devices and systems to provide computerised functionality and are mutually dependent. Hardware includes the physical components, like the motherboard, chips, memory, and hard drives, while software includes the programs that run on the hardware. An operating system manages the computer; memory and processes, and of its software and hardware. It also allows you to communicate with the computer without knowing how to speak its language. The internet is a worldwide telecommunications system that provides connectivity for millions of other, smaller networks. Such topics are covered in detail and this book explains the fundamentals of computers and topics related to computer programming in layman's terms. It also covers the complete contents of computer applications, unlike books available in the market today.



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### Computer Security

Chris Stallone

This book is ideal for courses in computer or network security. It also provides an up-to-date reference or self-study tutorial for system engineers, programmers, system managers, network managers, product marketing personnel, system support specialists. In addition to an extensive pedagogical program, the book provides unparalleled support for both research and modelling projects, giving students a broader perspective. This book includes topics on computer crime, physical security, communications, systems security and risk management. This book covers all security topics considered core in the IEEE/ACM computer science curriculum. It can be used to prep for CISSP certification, and includes in-depth knowledge of computer security, technology and principles, software security, management issues, cryptographic algorithms, internet security and more. It contains new information on advances in computer equipment and the spread of technology. It is an essential text for everyone involved with the operation and security of the computer complexes that are integral to today's businesses.



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## Software Engineering Dennis Shaffer

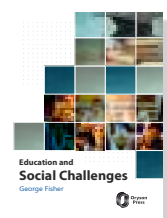
Software Engineering is a profession dedicated to designing, implementing, and modifying software so that it is of higher quality, more affordable, maintainable, and faster to build. It discusses the major issues associated with different phases of the software development life cycle. Starting from the basics, the book also discusses several advanced topics. Topics like software project management, software process models, developing methodologies, software specification, software testing and quality, software implementation, software security, software maintenance and software reuse are discussed. This book also gives an introduction to the new emerging technologies, trends and practices in the software engineering field. Software Engineering is a "systematic approach to the analysis, design, assessment, implementation, test, maintenance and reengineering of software, that is, the application of engineering to software." This concise yet wide ranging introduction to all aspects of the art of engineering software focuses on the new approaches to software development designed to improve the quality of computer programming. Using a non methodical approach, the book guides readers succinctly through each stage of the discipline from software needs to be engineered through defining a software discipline. The book has been brought fully up-to-date, with complete coverage of all aspects of the software lifecycle and a strong focus on the management skills needed to carry out software projects on time and within budget.



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## Wireless and Mobile Network Architectures June Lautner

Wireless is the hottest technology and media sector in the world today and Asia is at the centre of the action. This volume captures the flavour and implications of these fast-paced developments by providing a comprehensive, detailed and insightful look at the wireless scenario in the Asia-Pacific. Wireless communication has become a ubiquitous part of modern life, from global cellular telephone systems to local and even personal-area networks. This book provides a tutorial introduction to digital mobile wireless networks, illustrating theoretical underpinnings with a wide range of real-world examples. Mobile security or mobile phone security has become increasingly important in mobile computing. It is of particular concern as it relates to the security of personal information now stored on the smartphone. More and more users and businesses use smartphones as communication tools but also as a means of planning and organizing their work and private life. Within companies, these technologies are causing profound changes in the organization of information systems and therefore they have become the source of new risks. This book gives network engineers and managers a window on the world of wireless and mobile networks, from the enabling technologies and protocols to creating and managing mobile services.



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## Education and Social Challenges George Fisher

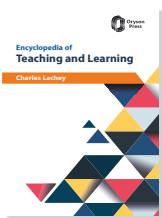
Over the last few years, knowledge, the human capital, and learning institutions have become the key determinants of current global progress. The need has arisen for professional management structures and more entrepreneurial style of leadership in the education sector. Every individual has a right to education. It is universally recognized that the main objective of education is to provide quality education to all children. This fact is that education is a fundamental human right, which cannot be made true without enabling. Making people access knowledge transfer is important for human capital development. It prepares those who were most likely to be dependents, to become self-reliant. This book attempts to give certain important inputs in knowledge transfer among stakeholders of education. The process of transformation of economy and society in the era of knowledge is undeniably tied to the entire education system; especially to high education organisations. For that reason, a stakeholder analysis could be one of the successful tools when planning and managing such type of organisations. A dramatic shift of social, technological and economic values arriving in 21st century is transforming organisations through new learning models. This is thoroughly explored in this book and is beneficial for anyone in the education sector.



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## Encyclopedia of Classroom Environment in Child Education Albert Boris

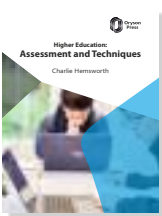
The early years of children's lives are ones of swift growth and development. They enter their pre-school years with a significant background of learning experiences, through interactions with the family, friends and other people around them. During their pre-school years, support for children is continued in a range of settings in the private, public and voluntary sectors. At the same time many of a child's most valuable experiences continue to take place in the home and the community. Staff in preschool education are, for that reason, working in partnership with parents in developing children's learning. The vital contribution of preschool education lies in developing and broadening the range of children's learning experiences so as to leave them confident, eager and enthusiastic learners; who look forward to starting school. The starting point for all learning is the child and this requires a recognition of the particular experiences that children bring to the early years setting and the ways in which these are fostered and developed. For adults this often involves negotiating the balance between the younger child's struggle to achieve independence, and their need for ongoing emotional support. Play is a key activity, at this stage of learning. This book deals with early development and the role of the school setting in the education and well-being of a child.



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### Encyclopedia of Teaching and Learning Charles Lachey

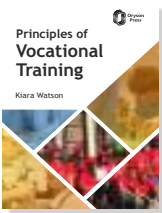
There has been a quantitative expansion in the field of education in terms of an explosion in the number of students. Consequently the number of teachers have also increased, substantially. The emerging aims of education include equipping all the citizens to lead a better life, providing equal opportunities and basic amenities for all global citizens irrespective of race, creed, caste, or locality. Governmental and voluntary agencies are in the field to implement these. During the last five years college students are in the front of illiteracy eradication work. Work has to continue in this area so as to ensure development in our society, this book is a complete guide to the methods and aims of education and teaching in more recent times.



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### Higher Education: Assessment and Techniques Charlie Hemsworth

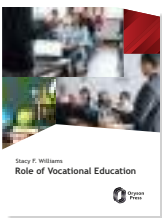
Fundamental to education is the need to evaluate student learning and the effectiveness of teaching methods and the programs offered. Assessment allows faculty to determine what, and how well, students are learning. Assessment also allows faculty to fine tune teaching methods. Finally, assessment allows department or division heads to evaluate the effectiveness of entire programs. Assessment strategies whether of the individual, the course, or the entire program give faculty an impressive tool to measure learning. Assessment strategies must be related to the course material and relevant to students' lives. Provide assessment strategies that relate to students' work, such as product analysis or portfolios. Have students use simulated activities for computer courses, keep a log of performance ratings or references, or role play job interviews, mock trials, or historical moments. Higher Education Assessment and Techniques provides guidance for assessing and promoting institutional effectiveness. The book contains a wide range of issues, from measures of effectiveness to communicating with the public. It will be an essential resource for university leaders for achieving institutional effectiveness.



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### Principles of Vocational Training Kiara Watson

Vocational education is related to the age-old apprenticeship system of learning. Apprenticeships are designed for many levels of work from manual trades to high knowledge work. However, as the labour market becomes more specialized and economies demand higher levels of skill, governments and businesses are increasingly investing in the future of vocational education through publicly funded training organizations and subsidized apprenticeship or traineeship initiatives for businesses. At the post-secondary level vocational education is typically provided by an institute of technology, university, or by a local community college. Vocational education has diversified over the 20th century and now exists in industries such as retail, tourism, information technology, funeral services and cosmetics, as well as in the traditional crafts and cottage industries. The book will be an indispensable source for all professionals, researchers and students in this subject and for anyone working in the related areas for acquiring up-to-date overviews.



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### Role of Vocational Education Stacy F. Williams

Vocational Education and Training (VET) is an important element of a nation's education initiative. In order for Vocational Education to play its part effectively in the changing the national context and to enjoy the fruits of the demographic dividend, there is an urgent need to redefine the critical elements of imparting vocational education and training to make them flexible, contemporary, relevant, inclusive and creative. Vocational education may be classified as teaching procedural knowledge. This can be contrasted with declarative knowledge, as used in education in a usually broader scientific field, which might concentrate on theory and abstract conceptual knowledge, characteristic of tertiary education. Vocational education can be at the secondary, post-secondary level, further education level and can interact with the apprenticeship system. It has been the author's aim to keep in mind the requirements of students as well as the industry in the preparation of this book.



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## Aquatic Biodiversity

Shabana Hafeez

Aquatic biodiversity focuses on the variety of life and the eco systems that are present in freshwater, tidal and marine regions of our world, and their interactions. These include lakes, ponds, and reservoirs, rivers and streams, groundwater, and wetlands; with their banks, oceans, estuaries, salt marshes, sea grass beds, coral reefs, kelp beds, and mangrove forests. Aquatic ecosystems also provide a home to many species including phytoplankton, zooplankton, aquatic plants, insects, fish, birds, mammals. Aquatic biodiversity has a huge economic and aesthetic value and is significantly responsible for maintaining and supporting overall environmental health. Aquatic resources are becoming rapidly susceptible to both natural and artificial environmental changes. Thus, conservation strategies to protect and conserve aquatic life are necessary to maintain the balance of nature and support the availability of resources for the future. This book looks at the why and how of this.



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## Environmental Biology of Fishes

Nick Smulders

Fish originated over 480 million years ago. Fish evolved in fresh water and spread to the seas at a much later period. Fish are the dominant free swimming animals of the seas with a body designed for ease of movement. This ability to move about easily, without relying on water currents to carry them about, has enabled fishes to exploit most parts of the world's oceans. Fish are a very important food source for many nations. Fish can see, smell, touch, feel, and taste, and they have developed some new senses, such as electroreception. Fish can sense light, chemicals, vibrations and electricity. In general, fishes are cold blooded. They derive their body heat from their environment and conform to its temperature. The circulation of blood in fish is simple. Their hearts only have two chambers, unlike us. This is because the fish heart only pumps blood in one direction. Detailed coverage of environmental aspects relating to fish biology is a key feature of this book. It is of great use to students and individuals in fish biology, fisheries, aquaculture and environmental sciences.



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## Fish Biotechnology

Eric Crewson

Demand for fish is ever-increasing, worldwide; the increasing demand can't be met through increased natural harvest only. Aquaculture could help to meet increasing demand, and biotechnology can make a great contribution to improving aquaculture yields. Aquaculture animals are particularly well suited for research in biotechnology. Experimentation is facilitated by the availability of large numbers of gametes, use of external fertilization, and ease of in vitro rearing of embryos. The agenda for modern biotechnology in aquaculture seems very similar to that of livestock and agriculture. The potential areas of biotechnology in aquaculture include the use of synthetic hormones in induced breeding, production of mono-sex, uniparental and polyploid population, molecular biology, transgenic fish, gene banking, improved feeds and health management and development of natural products from marine organisms. This book looks at a broad spectrum of biotech research efforts, and their applications to the fisheries and aquaculture industry. It looks at the application of genetic, cellular, and molecular technologies to enable fish farmers to produce a more abundant, resilient, and healthier supply of seafood. It covers topics ranging from brood stock improvement to fish health and gene transfer. This book will be valuable to researchers, producers, and students interested in the field of fish biotechnology.



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## Freshwater Fish Farming

Paula Seth Carlson

Fish farming is the principal form of aquaculture. Fish farming involves raising fish commercially in tanks or enclosures, usually for food. A facility that releases juvenile fish into the wild for recreational fishing or to supplement a species' natural numbers is called a fish hatchery. Worldwide, the most important fish species used in fish farming are carp, salmon, tilapia and catfish. There is an increasing demand for fish and fish protein, which has resulted in widespread overfishing in wild fisheries. The global returns for fish farming recorded by the FAO in 2008 totalled 33.8 million tonnes worth about \$US 60 billion. Limiting for growth here is the available food supply by natural sources, commonly zooplankton feeding on pelagic algae or benthic animal, such as crustaceans and molluscs. Tilapia species filter feed directly on phytoplankton, which makes higher production possible. The photosynthetic production can be increased by fertilizing the pond water with artificial fertilizer mixtures, such as potash, phosphorus, nitrogen and micro-elements. Another issue is the risk of algal blooms. When temperatures, nutrient supply and available sunlight are optimal for algal growth, algae multiply their biomass at an exponential rate, eventually leading to an exhaustion of available nutrients and eventually die off. The present book is a concise and up-to-date work including all aspects of this subject.

# FISHERIES

14



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## Fish Genetics and Biodiversity Conservation

Edward Foster

The genomics revolution and its impacts on aquaculture are projected to contribute to resolving problems such as diseases, environmental impacts, and low profit margins. The major potential applications of genome technologies include marker assisted selection for genetic enhancement, environmental improvements through enhanced productivity and the development of novel technologies for environment monitoring. In addition to those, development of effective vaccines and their delivery technologies, monitoring antibiotic resistance diagnosis for fish diseases and for the safety of aquatic produce accurate identification of fish stocks for capture fisheries management and for their use as FiGR in aquaculture conservation; including protection of endangered species. Genomics is a highly dynamic research field, rapid developments in genomics can afford new opportunities for applications in aquaculture and capture fisheries, particularly in the areas of FiGR conservation and genetic enhancement. Genomics draws data from cytogenetic, molecular genetics, quantitative genetics, and population genetics, and has led to the development of bioinformatics. Genomics comprises the study of genome structure, organization, expression, evolution, and functions. This book provides updated information on various aspects of this subject and will be useful to students and researchers dealing with this topic.



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## Fish Pharmacology

Lisa Goranson

Fish medicine is the study and treatment of the diseases of fish. This field also has important applications to fisheries management. Pharmacology provides the scientific basis and principles for a variety of special applications; such as the study of drug actions, the use of drugs as therapeutic agents in medicine or as tools in scientific research, and the development and regulation of pharmaceuticals. 'Fish toxicology' describes the key target organ systems for chemical impacts in fish; how chemicals produce cancer in these animals and how fish can develop resistance to chemical or drug toxicity. As aquaculture continues to expand, there is a need for greater knowledge of medicinal treatments both for the prevention and treatment of disease and for the economic husbandry of fish. Fish diseases and disorders trilogy addresses infectious diseases of fish and their disorders that arise due to viruses bacteria and fungi. Though most fish are caught from nature, fish farming is now making a significant contribution to total fish production. With 79% of the earth's surface covered by water, research into the chemistry of marine organisms is relatively unexplored and represents a vast resource for new medicines to combat major diseases such as cancer, AIDS or malaria. This book will help veterinarians to prescribe wisely and fish farmers to administer drugs safely and effectively.



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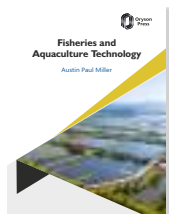
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## Fish Processing Technology

Robert Kennedy

Fish processing involves the application of preservation techniques in order to retain quality and increase shelf life. It may also deal with value adding to produce a wide variety of products. The first handling technique for preserving the quality of fish is to keep them alive for as long as possible before cooking and consumption. A number of methods are used to preserve fish. Some employ techniques based on temperature control, using ice, refrigeration or freezing; others on the control of water activity and include drying, salting, smoking and freeze-drying. Techniques may rely on the physical control of microbial fish loads, such as through microwave heating or ionizing irradiation, or on chemical control of microbial activity and loads by adding acids, to fish products. Techniques like vacuum packaging are also used. Fish processing operations include proper waste management techniques. For the transportation of chilled and frozen fish products by road, rail, sea or air, it is of utmost importance that the cold chain is maintained throughout. This requires the use of insulated containers or transport vehicles and adequate quantities of coolants or mechanical refrigeration. This book provides a thorough exploration of traditional as well as modern techniques of fish processing. Written as an overview of the field for industrialists wishing to improve or diversify their operation and for those teaching and learning this aspect of food science and technology.



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## Fisheries and Aquaculture Technology

Austin Paul Miller

The systems and technology in aquaculture vary from very simple facilities like family ponds for domestic consumption in tropical countries, to high technology systems like intensive closed systems for export production. Much of the technology used in aquaculture is often based on small modifications that improve the growth and survival rates of the target species, such as improving food, seeds, oxygen levels and protection from predators. Simple systems of small freshwater ponds, used for raising herbivorous and filter feeding fish, account for about half of global aquaculture production. A greater understanding of complex interactions between nutrients, bacteria and cultured organisms, together with advances in hydrodynamics applied to pond and tank design, have enabled the development of closed systems. These have the advantage of isolating the aquaculture systems from natural aquatic systems, thus minimizing the risk of disease or genetic impacts on the external systems. Where management has been ineffective, the greater efficiency of fishing methods and aquaculture production has sometimes led to overfishing and environmental degradation. There is a need to develop more effective fisheries management frameworks, together with safer and more environmentally-friendly methods of production. This book is an attempt in this direction and will be useful to students, academicians and researchers.



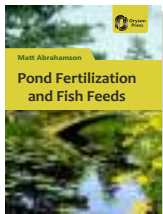


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## Fisheries and Fish Toxicology

Sandra O'Brien

A major concept of toxicology is that the effects of a toxin are dose dependent. Even water can lead to water intoxication when taken in too high a dose, whereas for even a very toxic substance such as snake venom there is a dose below which there is no detectable toxic effect. Toxicity is species-specific, making cross species analysis problematic. Aquatic toxicology tests or toxicity tests are used to provide qualitative and quantitative data on adverse effects on aquatic organisms from a toxicant. Toxicity tests can be used to assess the potential for damage to an aquatic environment and provide a database that can be used to assess the risk associated with in a situation for a specific toxicant. Aquatic toxicology tests can be performed in the field or in the laboratory. In fisheries, development may be defined as a process of change through which sustainable and equitable improvements are made to the quality of life for all or most members of a society. Adding the need for sustainability implies that these improvements need to be achieved without risk to the long term stability of the ecosystem concerned. This book will be very useful for the students, teachers and researchers in this field.



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## Pond Fertilization and Fish Feeds

Matt Abrahamson

Phytoplankton is the base of the pond food chain. Fertilization increases fish production by increasing the amount of microscopic green plants (phytoplankton) in the water. Proper fertilization and liming can increase three to four times the pounds of fish a pond will support. Unfertilized ponds stocked with bream, bass and catfish usually have about 100 pounds of fish per surface acre. Ponds receiving adequate amounts of fertilizer typically contain 300 to 400 pounds of fish per surface acre. A fertilization schedule can dramatically improve fish production in ponds by up to 300 percent, and can also decrease aquatic weed problems by shading the pond bottom, so that aquatic weeds do not have an opportunity to grow. In undrainable ponds where the frequent change of water is a remote possibility, the physico-chemical properties of pond water governing the biological production cycle are more or less a reflection of the bottom soil. The organic and mineral constituents of the soil play their part in releasing the required nutrients into water for pond productivity through chemical/ biological processes. This book will be very much helpful to the students, professionals and policy makers associated with Pond Fertilization and Fish Feeds.

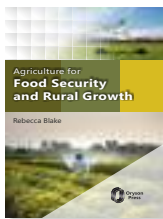


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## Reproductive System in Fishes

Sarah Bling

Fish reproductive organs include testes and ovaries. In most species, gonads are paired organs of similar size, which can be partially or totally fused. There may also be a range of secondary organs that increase reproductive fitness. Some fish are hermaphrodites, having both testes and ovaries either at different phases in their life cycle or, as in hamlets, have them simultaneously. The fertilisation of eggs can be either external or internal. In many species, fins have been modified to allow Internal fertilisation. This book dwells into this in great detail while discussing topics such as Fatty Acid content in fish, digestion, proteins and Amino Acids, Endocrine and Reproductive Systems, developmental plasticity in the Circulatory System, etc. The author also shares insights about the risks and controls in managing Fishery products, the factors involved in maintaining Fisheries farming systems, etc.

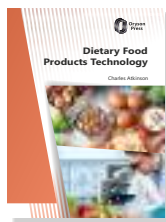


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## Agriculture for Food Security and Rural Growth

Rebecca Blake

There has been a quantitative expansion in the field of education in terms of an explosion in the number of students. Consequently the number of teachers have also increased, substantially. The emerging aims of education include equipping all the citizens to lead a better life, providing equal opportunities and basic amenities for all global citizens irrespective of race, creed, caste, or locality. Governmental and voluntary agencies are in the field to implement these. During the last five years college students are in the front of illiteracy eradication work. Work has to continue in this area so as to ensure development in our society, this book is a complete guide to the methods and aims of education and teaching in more recent times.



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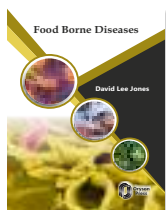
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## Dietary Food Products Technology

Charles Atkinson

Food technology involves application of food science to the selection, preservation, processing, packaging, distribution, and use of safe food. Food processing is the treatment of food substances by changing their properties to preserve it, improve its quality or make it more useful, functionally. Product development is the creation of new flavours, colours or varieties of existing products or completely new products. Quality assurance and quality control include the process of correct manufacturing of products, testing of ingredients and finished products and ensuring they are safe and up to the mark; quality-wise. Food is any substance, usually composed of carbohydrates, fats, proteins and water, that can be eaten or drunk, for nutrition or pleasure. Items considered as food may be sourced from plants, animals or from fungus or fermented products like alcohol. In the 1970s, saving labour by mechanization was always assumed to be a bad thing, though it also meant more leisure for the farmer. Over time, mechanization helped the farmer improve their income. This book presents the manufacture of food as a series of processes facilitated by clear physical, chemical, and bacteriological principles. It is a must-read for anyone interested the culinary world or health sciences farmer. Over time, mechanization helped the farmer improve their income. This book presents the manufacture of food as a series of processes facilitated by clear physical, chemical, and bacteriological principles. It is a must-read for anyone interested the culinary world or health sciences.



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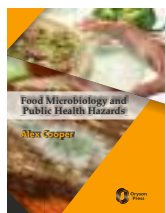
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## Food Borne Diseases

David Lee Jones

Food borne illness/ food borne disease and or food poisoning, is any illness resulting from the food spoilage of contaminated food, pathogenic bacteria, viruses, or parasites that contaminate food, as well as chemical or natural toxins such as poisonous mushrooms. Food borne illness usually arises from improper handling, preparation, or food storage. Good hygiene practices before, during, and after food preparation can reduce the chances of contracting an illness. Regular hand-washing is one of the most effective defences against the spread of food borne illness. The action of monitoring food to ensure that it will not cause food borne illness is known as food safety. Food borne disease can also be caused by a large variety of toxins that affect the environment or by chemicals. Food borne illness can also be caused by pesticides or medicines in food and naturally toxic substances like poisonous mushrooms. There are more than 250 known food borne diseases. They can be caused by bacteria, viruses, or parasites. Natural and manufactured chemicals in food products also can make people sick. Some diseases are caused by toxins from the disease-causing microbe, others by the human body's reactions to that particular microbe, itself. This book will serve as a valuable reference for public health officers, microbiologists, environmental biologists, consultants in communicable disease control and microbiology students.



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## Food Microbiology and Public Health Hazards

Alex Cooper

Food microbiology unites the disciplines of microbiology and food technology, facilitating advances in providing safer food for the world. Developments in food technologies and consumer demand for foods that are minimally processed, organic, have low levels of additives, or extended shelf-life create challenges to ensuring food safety. Food microbiologists investigate all aspects of the existence, survival and behaviour of microorganisms in order to better understand their impact on the safety and stability of our food system. An important issue that leads to food contamination is food storage temperature. The preparation of food long before its consumption, storage at ambient temperature, inadequate cooling and reheating, contaminated processed food, and undercooking are identified as the main reasons that contribute to food poisoning outbreaks. Food spoilage is a disagreeable change or departure from the food's normal state can be detected in the senses of smell, taste, touch, or vision. Changes that occur in food are based on the composition of food and the microorganisms present in it. Also on the chemical reactions relating to the metabolic activities of microorganisms as they grow in the food, determine its contamination. The book gives updated information on various issues related to hygiene and quality control in food processing sector. It explores the fields of food microbiology and processing technology.



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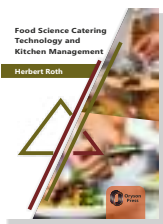
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## Food packaging technology

Philip Berry

Packaging is the technology of enclosing or protecting products for distribution, storage, sale, and use and also refers to the process of designing, evaluating, and producing packages. Packaging can be described as a coordinated system of preparing goods for transport, warehousing, logistics, sale, and end use. Packaging contains, protects, preserves, transports, informs, and sells. In many countries it is fully integrated into government, business, institutional, industrial, and personal use. A package provides protection, tampering resistance, and special physical, chemical, or biological needs. It may bear a nutrition facts label and other information about food being offered for sale. Food packaging could be a very different world in the near future. From 'electronic tongues' that can 'taste' products to bacteria battling nano particles that are 50,000 times thinner than human hair, researchers are hard at work on some mind-blowing innovations. Taking inspiration from an apple, which protects its matter with edible skin, the team's inventions thus far include pumpkin soup in spinach membrane, lemon juice in a lemon membrane and melted chocolate in a cherry membrane. The book starts with an introduction, history, classification of materials and then introducing the package requirements for each class of food products.



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## Food Science Catering Technology and Kitchen Management Herbert Roth

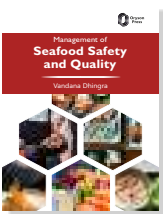
The earliest instance of major services being catered in the United States is a 1778 ball in Philadelphia catered by Caesar Cranshell, to celebrate the departure of British General William Howe. Catering business began to form around 1820, with the Philadelphia Catering being a respectable and profitable business. The early catering industry was mostly founded by African-Americans. The industry began to professionalise under the reigns of Robert Bogle who is recognized as 'the originator of catering.' By 1840, the second generation of Philadelphia black caterers formed, who began to combine their catering businesses with restaurants they owned. Common usage of the word 'caterer' came about in the 1880s, at which point local directories began listing numerous caterers. White businessmen eventually moved into the industry and by the 1930s, the black businesses had virtually disappeared. In the 1930s, the Soviet Union, creating more simple menus, began developing state public catering establishments as part of its collectivisation policies. After the Second World War, many businessmen embraced catering as an alternative way of staying in business after the war. By the 1960s, the home-made food was overtaken by eating in public catering establishments. By the 2000s, personal chef services started gaining popularity, with more women entering the workforce. This book looks at the origin and evolution of catering as a business and the management of the kitchen.



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## Juice processing technology Marc Arcand

A wide range of drinks can be made using extracted fruit juice or fruit pulp as the base material. Many are consumed as pure juice without the addition of any other ingredients, but some are diluted with sugar syrup. The types of drink made from fruit can be separated into two basic types - Those that are drunk straight after opening. Those that are used little by little from bottles which are stored between uses. The former groups should not require any preservative if they are processed and packaged properly. However, the latter group must contain a certain amount of permitted preservatives to have a long shelf life after opening. There are several methods to extract juice depending on the type of fruit you use. For citrus fruits which are naturally juicy, the best option is to use a hand presser or a revolving citrus 'rose'. Some fruits such as melon and papaya are steamed to release the juice. Apples are pressed and fruits such as mango, guava, sourplop, pineapple and strawberry must be pulped to extract the juice. The fruit pieces are pushed through a perforated metal plate that crushes and turns them into a pulp. This book sheds light on this subject in detail while also being informative for general readers.



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## Management of Seafood Safety and Quality Vandana Dhingra

Seafood is any form of sea life regarded as food by humans. Seafood prominently includes fish and shellfish. Shellfish include various species of mollusks, crustaceans, and echinoderms. Historically, sea mammals such as whales and dolphins have been consumed as food, though that happens to a lesser extent in modern times. Edible sea plants, such as some seaweeds and micro-algae, are widely eaten as seafood around the world, especially in Asia. In North America, although not generally in the United Kingdom, the term 'seafood' is extended to freshwater organisms eaten by humans, so all edible aquatic life may be referred to as seafood. For the sake of completeness, this article includes all edible aquatic life. The globalization of trade in fish has created many challenges for the developing world specifically with regard to food safety and quality. International organisations have established a good basis for standards in international trade. Whilst these requirements are frequently embraced by the major importers, they often impose additional safety requirements and regularly identify batches which fail to meet their strict standards. Creating an effective national seafood control system which meets both the internal national needs as well the requirements for the export market can be challenging. Many countries adopt a dual system where seafood products for the major export markets are subject to tight control whilst the majority of the products are less tightly controlled. This book explores the various challenges of the Seafood industry along with insightful suggestions on the way forward.



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## Post Harvest Food Grain Storage Jasmin O. Greenwood

In agriculture, post-harvest handling is the stage of crop production immediately following the harvest. It includes various processes like cooling, cleaning, sorting and packing. The instant a crop is removed from the ground, or separated from its parent plant, it begins to deteriorate. The most important goals of post-harvest handling are keeping the product cool, to avoid moisture loss and slow down undesirable chemical changes, and avoiding physical damage such as bruising, to delay spoilage. Post-harvest treatment largely determines final quality, whether a crop is sold for fresh consumption, or used as an ingredient in a processed food product. The care that needs to be taken to ensure the crop is best processed giving the highest return to the farmer involves certain steps. This book sheds light on these procedures while also discussing subjects like rain water harvesting, seeds germination, food grain storage security, packing, refrigeration, drying, purchasing and storage, etc.



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### Quality Food Preparation Techniques and Management of Fruits Emily M. Hampton

Of the three basic necessities of survival and the world's biggest industry, food preparation has been a constant chore since the first human beings picked up cutting and mashing stones. In return, this effort to make food edible, preserve it, and transform its character has sustained an ever increasing population. Many techniques, including grinding, sifting, drying, salting, sealing, fermenting, and applying heat, are extremely ancient. Few fundamentally new techniques have been introduced but the main long-term change has been the shifting of tasks from the domestic hearth to centralized factories. The processes of food preparation might be divided according to their primary science, whether physical (such as extracting nuts from their shells), chemical (adding salt), or biological (brewing beer). They may also be categorized according to their intended purpose. This book sheds light on the various challenges of managing a F&B entity right from creation and storage to dispatch and delivery. Along with knowledge it also gives insights into different kinds of products and the subjective requirements in dealing with them. The Fruit management system solutions it offers are contemporary and ground breaking.



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### Forest Conservation and Management Scott Oliver

This book will help us to correct the harmful effects of strategies and policies adopted in the past and pursue management practices that will safeguard the ecological balance of the region and provide livelihood security for the indigenous people who are dependent on forests. Forests provide essential social, environmental and economic value to people around the world. However, the economic and practical benefits gained from extracting raw materials for goods from forests are often at odds with the social, and especially the ecological services forests provide. Conservation is necessary to ensure forests are able to provide these essential services for generations to come, but management of forest resources is also required to meet global demand for goods and employment. Forest management expenditures, which are made in the expectation of creating benefits at some time in the future, are best viewed as investments. This opens up opportunities for using standard investment analysis techniques to rank projects competing for scarce funding. The use of these techniques lets forest managers evaluate alternative strategies and select the one which will contribute the most to the achievement of management goals. This book is intended to provide forest resource managers with an introduction to benefit-cost analysis and its potential use in forest management. This book is expected to benefit the researchers, general readers and policy makers for policy implication.



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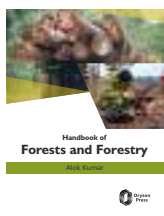
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### Forest Genetics and Tree Breeding Andrew Dan Lloyd

Forest genetic resources or tree genetic resources are genetic material of shrub and tree species of actual or future value. Forest genetic resources are integral for forest-dependent communities who rely for a substantial part of their livelihoods on timber and non-timber forest products like fruits, gums and resins, for food security, domestic use and income generation. These resources are also the basis for large-scale wood production in planted forests, so as to satisfy the worldwide need for timber and paper. The Ministry of Forests and Range Forest Genetics research program includes tree improvement, as well as a wide range of initiatives related to genetic conservation, genetic resources management, and identifying and developing mitigation strategies for climate change impacts. The topics of this book have been chosen as to give a comprehensive idea about forest genetics and tree breeding. This book has been designed as a reference book for post-graduate students, research workers, teachers and undergraduate students specializing in advance course of forest genetics and tree improvement.



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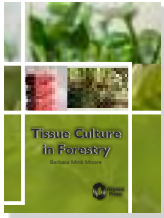
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### Handbook of Forests and Forestry Alok Kumar

A forest is a large area of land covered with trees or other woody vegetation. Hundreds of more precise definitions of forest are used throughout the world, incorporating factors such as tree density, tree height, land use, legal standing and ecological function. According to the widely used United Nations Food and Agriculture Organization definition, forests covered four billion hectares (15 million square miles) or approximately 30 percent of the world's land area. Forests are among the most important repositories of terrestrial biological diversity. Together, tropical, temperate and boreal forests offer very diverse habitats for plants, animals and microorganisms. A forest consists of many components that can be broadly divided into two categories that are biotic (living) and abiotic (non-living) components. The living parts include trees, shrubs, vines, grasses and other herbaceous (non-woody) plants, mosses, algae, fungi, insects, mammals, birds, reptiles, amphibians, and microorganisms living on the plants and animals and in the soil. This book reflects forestry in a society concerned about our ecosystem and its inhabitants, keeping in mind that trees have influenced the progress and welfare of humans in every land throughout the ages.

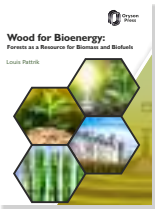


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## Tissue Culture in Forestry

Barbara Mink Moore

Tissue culture has been proposed as a method for the large-scale clonal propagation of forest species. Plant tissue culture relies on the fact that many plant cells have the ability to regenerate a whole plant (totipotency). Single cells, plant cells without cell walls (protoplasts), pieces of leaves, or (less commonly) roots can often be used to generate a new plant in culture media given the required nutrients and plant hormones. The main advantage of this technique is the production of exact copies of the parent plant. Plant tissue culture technique offers an excellent opportunity for mass propagation of plants in laboratory test tubes, which are transferred to the field. Besides crop plants, the technique is also applied to regenerate saplings for plantation and regeneration of dwindling forests. Some rare and nearly extinct plant species can be rescued and propagated by this technique. Due to rapid deforestation and depletion of genetic stocks, concerted efforts must be made to evolve new methods for mass propagation and production of short duration trees. This required genetic manipulation to evolve vigorous and fast growing trees with a short reproductive cycle which can be mass propagated. The technology of tissue culture is competent to meet this challenge. Some of the chapters will provide the reader with a broad review of recent developments and progress in the field of tissue culture.

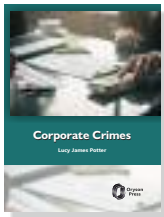


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## Wood for Bioenergy: Forests as a Resource for Biomass and Biofuels

Louis Pattrik

As much of the world seeks to reduce dependence on fossil fuels, energy companies and nations alike are turning once again to our oldest renewable energy resource wood. Both developing and industrialized countries are increasing their use of wood biomass as a direct substitute for fossil fuels for heating and producing electricity. And research is well underway on converting wood to a liquid fuel, which could lessen the reliance on oil. In addition, wood wastes from a range of sources (e.g. construction or demolition wastes, waste from manufacturing of wood based products) can potentially be used for bioenergy and biofuels production. Wood wastes are widely used as local fuel sources across the world, by combustion in wood burners or larger biomass boilers. As energy prices have fluctuated, and as concern about climate change has grown, companies and governments have looked increasingly to bioenergy as an economic and environmentally friendly alternative to fossil fuels as well as for energy security. Recent low forest product prices and financial difficulties faced by the forest sector have also led to calls for increased use of forest biomass for production of a range of bioproducts including bioenergy as additions or alternatives to traditional forest products. Forests are considered as important natural resources, so their proper management is highly essential for the growth and development of mankind.



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## Corporate Crimes

Lucy James Potter

Corporate crime, also known as organizational crime, is a type of white-collar crime. These are committed by individuals within their legitimate occupations, for the benefit of their employing organisation. Most criminologists divide white-collar crime into two major types: corporate crime and occupational crime. Occupational crime is the crime committed during the course of a legitimate occupation, for one's own benefit. Most corporate criminals do not view their activities as criminal; since their violations are usually part of their occupational environment. Their inappropriate behaviour is often informally approved by their employers. For the past two decades, the international community has focused on the development of extradition treaties, mutual legal assistance treaties, and sanctions to combat the proliferation of money laundering crimes on an international scale. The international focus for the next two decades must be directed towards internet crime and cyber-crime. With a special focus on new laws pertaining to such crimes. This unique book on corporate crime and human rights is essential for all students, teachers, accountants, corporate houses and general readers.



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## Crime Against Women

Arnold Parker

A crime against women is direct or indirect physical or mental cruelty to women. Various kinds of violence against women include eve-teasing, molestation, bigamy, fraudulent marriage, adultery and enticement of married women, abduction and kidnapping, rape, harassment to women at the workplace, wife beating, dowry death, female child abuse and abuse of elderly female etc. Post-modernity notion of equity is at the top of the feminist agenda. Crime against women hinders equality, development and peace. It both violates or nullifies the enjoyment by women of their human rights and fundamental freedoms. An exception to this rule is prostitution. A prostitute is someone who sells sex, and this is seen as a female offence. The criminal law consists of those legal norms that have been established by the state as a public responsibility. Someone who infringes the criminal law can be arrested, charged, and tried at public expense. If found guilty, will be subject to penalties such as a fine or imprisonment. This book will provide an in depth study and analysis of different types of crimes committed against women. It will help teachers and researchers of criminology, forensic scientists and social scientists in their academic pursuits. This will also help the policing system to control crime against women.



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## Crime and Criminal Justice

Alex Goranson

This book covers the current issues related to crime and criminal justice administration in developing countries. A crime is an offence that merits community condemnation and punishment; often through a fine or imprisonment. This is different from a civil wrong or a tort, which is an action against an individual that requires restitution or compensation. Crime and punishment have evolved over the centuries. The criminal justice system is a series of government agencies and institutions. Their goal is to identify and catch the law-breakers and to inflict a form of punishment on them. Other goals are the rehabilitation of offenders, preventing other crimes, and moral support for victims. The primary institutions of the criminal justice system are the police, prosecution and defence lawyers, the courts and prisons. The court system consists of attorneys, judges, and juries, as well as ancillary staff, who determine the guilt or innocence of a suspect. This book is immensely helpful to readers, researchers, students, lawyers, judges, jurists or teachers interested in the study of correctional services in the administration of criminal justice.



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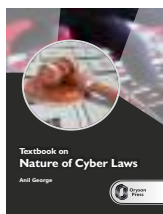
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## Criminological Psychology

Rebecca Brown

Criminal justice systems use the help of criminal psychologists. Criminal psychologists talk to potential suspects or proven criminals so as to investigate and assess their mental state. Some testify at trials as to the health of patients. They have a background in criminology as well psychology making these specialized psychologists experts in mental states and behaviour of criminals. A criminal psychologist may study why people commit crimes. They can also be asked to assess criminals in order to evaluate how likely the person is to re-offend in the future. At times they are asked to make educated guesses about the actions that a criminal may have taken after committing a crime. Crime rates, its' seriousness, and the frequency of different types of it, all vary considerably from one country to another. That could be a reflection of varying definitions and recording methods rather than underlying differences. The subjectively experienced fear of crime also shows sizeable variations, but they are only indirectly related to the patterns of crime recorded in official statistics. No matter what, the fact is that directly or indirectly, crime touches the lives of nearly everyone and is covered extensively by the media, on most occasions. This book has been prepared mostly on the basis of author's own empirical studies on different aspects of crime, and is one of the few books on this topic available.



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## Textbook on Nature of Cyber Laws

Anil George

With the rise in digital technologies being used for more and more functions, the rising threat of hackers, data leaks, cyber-crime, etc are becoming ten-fold. Countries where legal protections are inadequate will become increasingly less able to compete in the new economy. While governments around the world agree in principle of the need for effective Cyber laws they find themselves severely handicapped in framing them and agreeing on a consensus. The book offers a comprehensive explanation of such issues while offering insights into the world of cyber technologies. The book is an appropriate guide for students as well as for general reading on the subject.



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## Computer in Library Management

Evan Blake

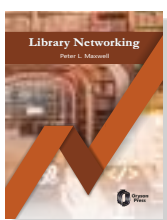
A computer management system is the perfect help to speed up the modernization of a library set-up. Cataloguing is an integral and challenging part of library management, that determines the ease with which a reader is able to retrieve a book. Standardization, convenience and accuracy are the basic requirements of a library's cataloguing work. The browsing method in the operation of a library, allows the organisation and collection of data, based on specific questions or keywords. The data is stored in the computer network, establishing new content and a high density network of data system. Upgradation to a computer system is essential to establish a library network system; from the perspective of a comprehensive survey and access to sufficient data; so as to better manage the information and data in the library. This book deals with the organisation and establishment of such a computer system in the process of management of a library.



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## Library Automation Eric Blake Johanson

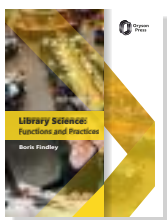
Library is a growing organism that requires constant positive changes to meet the needs of its user. The invention of the computer has brought in a rapid change in society. Therefore, automation has become the need of the hour. Library automation not only improves the image of the library staff but also provides additional services to the users with the existing staff. The impact of automation on the library is quite obvious; it creates a new environment where each function redefines the traditional organizational structure and transforms it into new institutional entries. In this book a brief overview is given about library automation. Automation is defined as a technique, a process, or a system which operates automatically. Library Automation is generally defined as the replacement of manual operations in libraries by computerized methods. Started in the late 1970s in a few special libraries, it has now reached most of the university libraries. Over the past three decades, libraries have changed considerably as bibliographic utilities, online catalogues, automated circulation systems, and other new technologies have been implemented in a majority of library operations and services. This book attempts to provide comprehensive and objective information related to the field of library automation. It is designed to equip the academics and library professionals with basic knowledge of the subject.



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## Library Networking Peter L. Maxwell

The world has been witnessing a knowledge and information explosion during the past few decades. Over 10 million journal articles are published every year besides news items, editorials and articles that are appearing in popular print media. Information professionals who would be the leaders in the twenty-first century depend on information for their work. Access to information holds the key to development. Libraries which store houses of knowledge and information, and information centers which disseminate knowledge and information, form two important components of present day society. While there is a deluge of information on one hand, the cost of collecting, processing, storing and disseminating information has been spiraling up on the other hand. This calls for heavy budgets for libraries even to maintain a reasonable level of acquisition of journals, books and reports. Information buying power of libraries has been declining year after year. Because of this, resource sharing and cooperative functioning through networking have become inescapable for libraries and information centers worldwide. Efficient resource sharing can be achieved by using the recent advances in information technology for realizing a network of libraries. Information technology signifies the coming together of the disciplines of electronics, computer hardware and software, communications (in particular telecommunications), artificial intelligence and human/ machine interface. This book explores these subjects and various others related to library networking.



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## Library Science: Functions and Practices Boris Findley

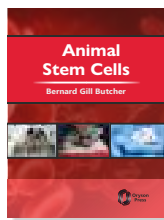
Library Science is a modern discipline. Earlier regarded as storehouses for preservation of manuscripts and books for reading and reference purposes, publicly or privately, the functions of the library today have assumed multifold dimensions today. Library management is such a vast field that it is not possible within the compass of a single volume to cover the whole of it comprehensively. Hence the need of this series. The present book is intended to serve as an introduction to the subject. The application of information technology in libraries results in increased operational efficiency. IT increases the productivity of library staff. It relieves professional staff from mundane jobs that involve a lot of duplication so that they can be fruitfully used for user oriented library services. It improves the quality of services rendered by the library. Use of information technology ensures ease of functioning, accuracy and economy in human labour with greater speed. The exponential growth of information has made manual systems redundant giving way to computerised information storage and retrieval tools. In this book, the fundamentals of library science like definition, purpose, social concept, types, public, spend, academic have been introduced. Various policies and procedures related to library science are also appended to make it comprehensive in a holistic manner.



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## Metadata and Digital Library Systems Gary Epstein

The kinds of metadata associated with an information resource can address different aspects. Descriptive metadata identifies the resource and provides data about its content. Administrative metadata is used to help manage the resource version numbering is an example. Technical metadata provides system related information about the resource such as the file type or format or resolution level of an image. Use metadata can keep track of usage and users. Metadata may be added manually, created through the use of an automated process like an indexing algorithm, or computer generated "on the fly". Most Integrated Library Systems are still bibliographic / reference based; they were not designed for the storage and retrieval of full text and multimedia. However, because of the increased demand for systems to support digital libraries, some ILS vendors have created add-on modules. Others are providing integration "hooks" for third party products or tools that can be used to add access to full text documents or images. Data and Metadata can enter into Inventor powered repositories through different ways. They can be manually deposited by an author, through custom and fully configurable web interfaces, backed by an equally configurable work-flow architecture, that lets the submission administrator set up any kind of procedure triggered by a deposition. The book will suit the needs of students, teachers, scholars and general readers.



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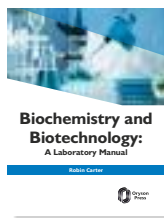
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### Animal Stem Cells

Bernard Gill Butcher

This book provides current information on the use of animal stem cells and is ideal for students, academics and research scholars. The biochemical activity is the process of chemical and physical change which goes on continually in the living organism. These characteristics of life include the build-up of new tissue, replacement of old tissue, conversion of food to energy, disposal of waste materials, and reproduction. The catalysts of biochemical reactions are enzymes and are responsible for bringing about almost all of the chemical reactions in living organisms. This book will explore such reactions as used by animals.



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### Biochemistry and Biotechnology: A Laboratory Manual

Robin Carter

Biochemistry or molecular biology is the study of the chemistry of living things. Biochemists study the physical and chemical properties, specifically of molecules of living organisms. The same techniques and theoretical framework are used by other types of chemists to study molecules in other settings. Biochemistry focuses on the molecular and atomic details of living organisms, concentrating on how chemical bonds are made and broken in an enzymatic reaction. Biotechnology harnesses cellular and biomolecular processes to develop technologies and products in order to improve our lives, including the health of our planet. Biotechnology is an applied science that uses the tools of biochemistry, molecular biology and other fields of biology. Development of genetically modified plants, which carry certain genes that make them more useful to us; is one recent application of biotechnology. We have been using the biological processes of microorganisms for more than 6,000 years to make useful food products, such as bread and cheese, and to preserve dairy products. This laboratory manual in biochemistry and biotechnology provides technical information on a number of experiments routinely performed by the biology, biotechnology and agriculture graduate and post graduate students in practical classes.



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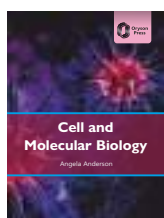
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### Biotechnology of Plant Tissues

Susan Burnett

Plant tissue culture is a technique to isolate parts of plants such as a protoplasm, cells, tissues, and organs; and grow them on artificial media in aseptic conditions in a controlled space. This is done so that parts of these plants can grow and develop into complete plants. Plant tissue culture techniques are essential to many types of academic inquiry and to many applied aspects of plant science. Plant researchers can find products and kits for plant biotechnology research such as plant DNA extraction and amplification, chloroplast isolation, plant protein extraction and isolation. The protocols section of this book provides information regarding growth media preparation, general media formulation and sterilization techniques. Tissue-cultured plants that have been genetically engineered also provide insight into plant molecular biology and gene regulation. Moreover, plant tissue culture techniques are integral to innovative areas of applied plant science, plant biotechnology and agriculture. This book is very useful to the researchers and students in the field of genetics and plant breeding using biotechnological tools.



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### Cell and Molecular Biology

Angela Anderson

This book mainly focuses on selected topics from cell structures and functions, genetic material, regulatory mechanisms, cellular biomedicine and new methods in cell biology for determination and differentiation of cell fate, growth regulation of cell, cell adhesion and movement. Intracellular trafficking, exploring cells, their characteristics, parts, and chemical processes are also explored. Furthermore, it gives attention to how molecules control a cell's activities and growth. This book is student-friendly and will appeal to medical, dental, veterinary, pharmacological, botanical and biological students and researchers. The current trends described in the book and outlooks which are highlighted, can be seen in many areas of fundamental biology, biomedicine, biotechnology and other applications of knowledge of cell biology. This book provides the essential concepts and applications of molecular biology to students of biology, pharmacy, biotechnology, microbiology and other related disciplines. The text reflects the advances that are transforming the field, from genetic engineering to innovative techniques with broad applications.





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## Environanotechnology

David Bruce Atkinson

The term 'enviro-nanotechnology' combines the words 'environment' and 'nanotechnology'. It unexpectedly, and its ability to jump gaps such as roads, rivers and fire breaks. A shield volcano is a type of volcano usually built almost entirely of fluid lava flows. They resemble a warrior's shield. A cloudburst is an extreme amount of precipitation, often with hail and thunder. This book is about all these natural phenomena as is useful for students, researchers, meteorologists, or anyone interested in knowing about natural calamities. implies that the environmental impact of nanotechnology, is the possible effects that the use of nanotechnological materials and devices will have on the environment. Nanotechnology's environmental impact can be split into two major aspects: the potential for nanotechnological innovations to help improve the environment, and the possibly new type of pollution that nanotechnological materials might cause when released into the environment. Nanotechnological products, processes and applications are anticipated to contribute to a great extent to environmental and climate protection by saving raw materials, energy and water, in addition to, reducing greenhouse gases and hazardous wastes. Using nanomaterials for that reason, promises certain environmental benefits and sustainable results. The aim of this book is to report on the results recently achieved in different countries. It provides useful technological information for environmental scientists and will assist them in creating cost-effective nanotechnologies.



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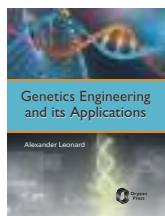
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## Environmental Biodiversity

Ben Huber Cornelius

A flood is an overflow of an expanse of water that submerges land, or a temporary covering by water of land not normally covered by water. The word may also be applied to the inflow of the tide. Flooding may result from the volume of water within a body of water; river or lake, which overflows. An earthquake or a quake, tremor or temblor, is the result of a sudden release of energy in the Earth's crust that creates seismic waves. The seismic activity of an area refers to the frequency, type and size of earthquakes experienced over a period of time. In meteorology, a cyclone or hurricane is an area of closed, circular fluid motion rotating in the same direction as the Earth. A wildfire/ bushfire/ forest fire/ desert fire is any uncontrolled fire in combustible vegetation that occurs in the countryside or a wilderness area. A wildfire differs from other fires by its extensive size, the speed at which it can spread out from its original source, its potential to change direction



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## Genetics Engineering and its Applications

Alexander Leonard

This book explores genetic engineering and its applications. The reader through this book, will learn how engineers apply their understanding of DNA, especially to manipulate specific genes; so as to produce desired traits. They will also learn the application of this by genetic engineers to address current problems facing humanity. They will learn what genetic engineering means and instances of its applications. They will also get the opportunity to explore the moral and ethical problems related to the implementation of genetic engineering. Genetic engineers have developed genetic recombination techniques to manipulate gene sequences in plants, animals and other organisms to express specific traits. Applications for genetic engineering are increasing as engineers and scientists work together to identify the locations and functions of specific genes in the DNA sequence of various organisms. Once each gene is classified, engineers develop ways to alter them to create organisms that provide benefits. There are a lot of applications in this field, especially in the field of agriculture. Recognition and editing of genetic code can even help prevent genetic mutations that can cause serious developmental disorders or other health problems. Genetic engineering is an exciting and beneficial field with a lot of opportunities and scope for implementation, for the betterment of people. This book is highly recommended for anyone interested in pursuing genetic engineering professionally.



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## Molecular Biology of Cell

Richard Steve Murphy

Molecular Biology continues to make significant progress toward understanding the fundamental molecular events that are at the core of all life. Its goal is to combine the knowledge gained in the many areas of scientific inquiry employed here from molecular genetics to structural biology to computational biology to name a few to obtain new insights into the functioning of biomolecular and their role in disease causality. Members of the department utilize the full range of contemporary research tools, including nuclear magnetic resonance spectroscopy, x-ray crystallography, electron microscopy, mass spectrometry, computer modelling, bioinformatics, and laser spectroscopy, as well as the techniques of modern molecular biology and genetics. One of the most notable recent achievements in the department is the determination of the three-dimensional structure of the T-cell receptor, a key component of the immune response. Understanding its structure and function may enable scientists to enhance the effectiveness of the immune system through the development of new, highly targeted therapeutics. The book provides readers with some of the basic principles of this subject while shedding light on topics like molecular models of DNA, molecular biology, DNA replication, RNA sequencing, structures synaptic transmission, Nucleic Acid notation, protein interaction prediction, etc.



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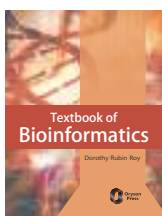
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### Plant Biotechnology: Trends and Techniques

Mayko Patison

For centuries, humankind has made improvements to crop plants through selective breeding and hybridization - the controlled pollination of plants. Plant biotechnology is an extension of this traditional plant breeding with one very important difference; plant biotechnology allows for the transfer of a greater variety of genetic information in a more precise, controlled manner. Thus allowing plant breeders to develop crops with specific beneficial traits without the undesirable ones. Many of these, in new plant varieties, fight plant pests, insects, disease and weeds that can be otherwise devastating to crops. Others provide quality improvements, such as tastier fruits or nutrition enhancements such as oil seeds that produce oils with lower saturated fat content. Crop improvements like these can help provide an abundant, healthful food supply and protect our environment for future generations. The present book explores contemporary techniques and applications of plant biotechnology, illustrating the tremendous potential this practice has to change our world by improving the food supply. It guides students from plant biology and genetics to breeding, principles and applications of plant biotechnology. This book is recommended for junior and senior level courses in plant biotechnology or plant genetics and for courses devoted to special topics at both the undergraduate and graduate levels. It is also an ideal reference for practitioners.



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### Textbook of Bioinformatics

Dorothy Rubin Roy

Bioinformatics was applied in the creation and maintenance of a database to store biological information at the beginning of the genomic revolution, such as nucleotide and amino acid sequences. Development of this type of database involved not only design issues but the development of complex interfaces whereby researchers could both access existing data as well as submit new or revised data. In order to study how normal cellular activities are altered in different disease states, the biological data must be combined to form a comprehensive picture of these activities. This book aims to introduce the various avenues to which bioinformatics can be applied as well as help further the respective causes. It is hoped that the book will serve the purpose of students and scholars on the subject and can be useful to them in allied fields.



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### Introduction to Mass Communication and Journalism

Linda Tapping

Mass communication is the study of how individuals and entities relay information through mass media to large segments of the population at the same time. It is usually understood to relate to newspaper, magazine, and book publishing, as well as radio, television and film, as these mediums are used for disseminating information, news and advertising. Mass communication differs from the studies of other forms of communication, such as interpersonal communication or organizational communication, in that it focuses on a single source transmitting information to a large group of receivers. The study of mass communication is chiefly concerned with how the content of mass communication persuades or otherwise affects the behavior, attitude, opinion, or emotion of the person or people receiving the information. Journalism delves deep into society which constantly undergoes changes however, it is not immune to this change itself. It is heavily dependent on advancing communications technology and upon experts in technological fields. At the heart of the enterprise however, are individual journalists including reporters, columnists, editors, correspondents, photographers, cartoonists, etc. The book has been designed for students appearing for UGC-NET/SLET in mass communication and journalism. The book is very comprehensive and covers almost all possible objective type questions on the subject. Many of the questions set in competitive examinations in the previous years have been used for preparing this book.



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### Investigative Journalism

Emily Van Vincent

Investigative Journalism explores the history, theory and practice of investigative journalism around the world. Investigative journalism is a form of journalism in which reporters deeply investigate a single topic of interest, such as serious crimes, political corruption, or corporate wrongdoing. An investigative journalist may spend months or years researching and preparing a report. Investigative journalism is a primary source of information. Most investigative journalism is conducted by newspapers, wire services, and freelance journalists. Practitioners sometimes use the term 'accountability reporting'. Investigative Journalism means the unveiling of matters that are concealed either deliberately by someone in a position of power, or accidentally, behind a chaotic mass of facts and circumstances and the analysis and exposure of all relevant facts to the public. In this way investigative journalism crucially contributes to freedom of expression and media development. It is hoped that this book will provide new insights to the established journalists and the working journalists to develop practice in the field of investigative journalism. This book covers the whole syllabus of the students of journalism in various universities and it is hoped that the book will prove to be of immense value to the teachers, students, the journalists and the general public alike.

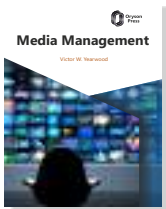


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## Journalism Ethics and Mass Management

Rachel Smith Weston

Journalism ethics comprise principles of ethics and of good practice as applicable to the specific challenges faced by journalists. Historically and currently, this subset of media ethics is widely known to journalists as their professional 'code of ethics' or the 'canons of journalism'. The basic codes and canons commonly appear in statements drafted by both professional journalism associations and individual print, broadcast, and online news organizations. While various existing codes have some differences, most share common elements including the principles of truthfulness, accuracy, objectivity, impartiality, fairness and public accountability as these apply to the acquisition of newsworthy information and its subsequent dissemination to the public. The title of this book is intended to reflect an approach which is prepared to see beyond simple black and white, and acknowledge shades of grey. Good ethical decision making requires thought, time, and discussion. That may seem an unattainable luxury in certain newsrooms, too many of which are under constant pressure to produce more with less. But journalists have a responsibility to find the time for this work. It's possible to be a successful journalist without taking time to confront ethical issues, but you can't be a good one. In the long run, trustworthy journalism is in the interests of the bottom line, too.



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## Media Management

Victor W. Yearwood

Media management is a general job title that describes people who manage talent for media professionals like those who work in photo, sound, and video. It is a form of entertainment management, a field that manages talent in show business. Professionals in the media management field work with many types of media-related talent, including actors, artists, writers, and musicians. Media management in business differs from media management in computers because the computer term refers to activities that involve processing computer media files like music, video, and picture files. Managers of this type are common in entertainment and print media because they facilitate contact between those seeking talent and those providing media talent. The media management field can include many types of management, including managing the finances of a popular band or controlling the royalties in the estate of a deceased movie star. A media manager might also work as an agent for a writer of books or magazines, contacting publishers who might want to buy clients' writing work. Media managers usually have a number of copyright and trademark laws that guide and restrict the way they conduct business within their media field. In most places, the laws that govern music copyrights differ from laws that control copyrights of motion pictures and photographs, so some media managers specialize in only one type of media. This book is relevant for students aspiring to create careers in the world of media as well as for working professionals looking to brush up their knowledge as well as for general readers.



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## Outlines of Journalism

Steve Summer

Journalism is a discipline of collecting, analyzing, verifying, and presenting news regarding current events, trends, issues and people. The word applies to both the method of inquiring for news and the literary style which is used to disseminate it. Those who practice journalism are known as journalists. News-oriented journalism is sometimes described as the "first rough draft of history", because journalists often record important events, producing news articles on short deadlines. The role and status of journalism, along with that of the mass media, has undergone profound changes over the last two decades with the advent of digital technology and publication of news on the Internet. This has created a shift in the consumption of print media channels, as people increasingly consume news through e-readers, smart phones, and other electronic devices, challenging news organizations to fully monetize their digital wing, as well as improvise on the context in which they publish news in print. Many news organizations claim proud traditions of holding government officials and institutions accountable to the public, while media critics have raised questions about holding the press itself accountable. This book is essential reading for practising journalists, students and scholars of journalism and mass communication and also the informed/interested general reader.



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## Public Relations and Media

Hugo P. Radcliff

In today's times, the world of media and industry of Public Relations have developed a symbiotic relationship - one feeds the other. PR professionals have begun spending large amounts of time and money to develop good relations with journalists creating strong networks which add to their profile and create value. The media in turn has become more dependent on PR to supply content to fill air time or column inches. Whilst newspapers have been steadily shedding staff over the last couple of decades they have simultaneously managed to produce ever thicker publications, and the ever growing ranks of PR are happy to help fill the pages. This book is a comprehensive and detailed introduction to the theories and practices of the public relations industry. Tracing the development of public relations, it explores the issues which affect the industry, examines its relationship with media, lobbying organisations and journalism, assesses its professionalism and regulation and advises on training and entry into the profession. It will be an all-inclusive manual for a student, or for a teacher who needs to prepare his or her lessons.

# MASS COMMUNICATION

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## Radio and Television Communication Humna Fayed

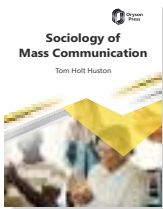
The power of broadcast media in today's society is enormous. Radio and television are the forms of mass media that can reach millions of people at a time. They have a huge influence on our lives and can be used to educate, inform, entertain, expose us to other people and cultures around the world, and even to babysit our children. This book deals with subject areas related to radio and television communication. It covers issues concerned with broadcast transmission systems, satellites, and other carriers and also focuses on technological programming of services. The recent developments of radio and television services along with their role in contemporary society is also described. The book is designed to give the student of mass communication a general and comprehensive view of the broadcast media. It will also be useful for media personnel, social scientists, educationists, research scholars and the general audience.



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## Social Journalism Carolin R. Richards

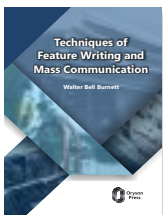
Social journalism is a media model consisting of a hybrid of professional journalism, contributor and reader content. It is similar to open publishing platforms, like Twitter and WordPress.com, except that some or most content is also created and/or screened by professional journalists. To fully understand the pressures on and performance of the press in any country, one has to consider the economic, political, and socio-cultural contexts of that press, along with the resulting professional orientation of the journalists. In their seminal volume on media systems, Siebert, Peterson, and Schramm developed their 'four theories of the press' - authoritarian, libertarian, social responsibility, and communist by analyzing the political, economic, cultural, and philosophical orientations of different groups of countries. The public relations industry has become significant and powerful, particularly in recent decades. This industry and its actors mainly work through the media to spread information, persuasion and opinions to the public on behalf of their clients. Publicity is the predominant goal. Networking, relation-building, news production and activities intended to be published in the media are thus part of the everyday work of PR agents such as information officers, PR consultants and spin doctors. The book explores the various facets of the media industry and is written in a very simple way keeping in view of the general readers.



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## Sociology of Mass Communication Tom Holt Huston

Sociology of mass communication is an arm of sociology that seeks to study the relationship between society, social phenomena and the mass media. It archives this through the application of sociological concepts and empiricism. It is necessary to understand that sociologists study all factors that affect social reality. Mass media dominate the mental life of modern societies, and therefore are of intense interest to sociologists. The national organization of the press and broadcasting (radio and television) has been a distinctive feature of these mass media throughout this century. Access to the new technologies looms large in this argument, and with it questions of social marginalization, where groups are denied opportunities to express themselves via these new means of representation. What is striking here is the enormous concentration of ownership across media production, reproduction, and distribution. The sociological study of communication is an attempt to answer the simple question of 'who says what, in which channel, to whom and with what effect?' This definition implies overt intention, avowed purpose, and communicative efficiency. This book has been written to cater to the needs of all those who are in the field of mass communication and Media, and who may feel interested in knowing more about the evolution of technology in the media field.



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## Techniques of Feature Writing and Mass Communication Walter Bell Burnett

Most newspapers today assume readers to have at least an eighth grade education while always considering that readers do not know the background of the day's news. Journalists, like technical communicators, must adapt their writing to various audiences. Feature writing involves maximising the literary skills of the writer. It is a creative effort based on facts and figures. Freelance magazine writers must stay nimble, changing their style, tone, and vocabulary for whatever audience they are presenting for. This book briefly explains the nature of feature stories, picks one definition out of several and examines it as well as looks at the various types of feature stories and writing techniques.



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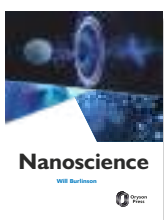
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## Modern Food Microbiology

Kiara Hastings

Food microbiology is the study of food microorganisms - how we can identify and culture them, how they live, how some infect and cause disease and how we can make use of their activities. Food microbiology provides information on the interaction of food and microorganisms. Microbes are single cell organisms so tiny that millions can fit into the eye of a needle. They are the oldest form of life on earth. Microbe fossils date back more than 3.5 billion years to a time when the Earth was covered with oceans that regularly reached the boiling point, hundreds of millions of years before dinosaurs roamed the earth. The field of food microbiology is a very broad one, encompassing the study of microorganisms which have both beneficial and deleterious effects on the quality and safety of raw and processed foods. Today this field has become an interesting and challenging subject. The focus of Food Microbiology is on the detection and analysis of food borne spoilage microorganisms. The present book covers important main aspects of interaction between microorganisms, food borne illnesses and food fermentations. This book was written with the major objective of relating interaction of microorganisms and food in relation to methods in food microbiology.



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## Nanoscience

Will Burlinson

Nanoscience is the study of things that are as small as molecules. Small things act very differently from large ones. For example, a gold nanowire is twenty times stronger than a large bar of gold. Electrons move differently through nanowires than through regular wires. We still have a lot to learn about the fundamental properties of nanoscale structures. Any manufacturing technology must move atoms from where they are to where we want them to be. How atoms move and the forces that act upon them during their motion are therefore critical areas of study in nanotechnology. This field is called molecular mechanics. A second central idea in nanotechnology is that of self replication. The recursion theorem is basic to self replicating systems. Along with molecular mechanics, this book talks about the building blocks of Nanotechnology along with different ways in which they are being organised into larger structures that could ultimately become part of useful technologies, such as computers. It dwells on subjects such as Scientific Nano Revolution, implications of Nanotechnology, technology of micro version, progress in Nano-science, functional Nano-science, Nano-strategy in science, modern concepts in Nano-science, etc.



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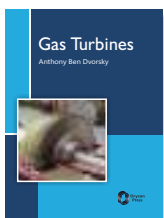
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## Nanotechnology

Sheldon G. Bradley

What if molecular manufacturing and its products replace modern technology? If they don't, then the question merely invites an entertaining and mind stretching exercise. But if they do, then working out good answers in advance may tip the balance in making decisions that determine the fate of the world. Technology is a product of industry, manufacturing and chemical engineering. Industry takes things from nature - ore from mountains, trees from forests and coerces them into forms that someone considers useful. Trees become lumber, then houses. Mountains become rubble, then molten iron, then steel, then cars. Sand becomes a purified gas, then silicon, then chips and so it goes. Each process is crude, based on cutting, stirring, baking, spraying, etching, grinding, and the like. However, to make wood and leaves, Nanotechnology does none of these. By studying the molecular structure, it simply uses molecular machines powered by Solar energy that convert carbon dioxide and water into oxygen and molecular building blocks. These blocks then join to form roots, trunks, branches, twigs, solar collectors and more machinery. Every tree makes leaves, and each leaf is more sophisticated than a spacecraft, more finely patterned than the latest chip from Silicon Valley. They do all this without noise, heat, toxic fumes, or human labor, and they consume pollutants as they go. Viewed this way, the trees are a form of highly advanced technology. This book sheds light on the various processes and uses of Nanotechnology.



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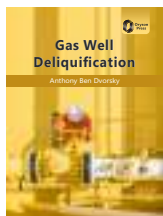
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## Gas Turbines

Anthony Ben Dvorsky

The gas turbine is the engine at the centre of the power plant that produces electric current. A gas turbine is a combustion engine that converts natural gas or other liquid fuels to mechanical energy. This energy powers a generator to produce electrical energy. In order to generate electricity, the gas turbine heats a mixture of air and fuel at very high temperatures, causing the turbine blades to spin; converting the energy into electricity. A simple cycle gas turbine can achieve energy conversion efficiencies ranging between 20% to 35%. Future hydrogen and syngas fired gas turbine combined cycle plants are likely to achieve efficiencies of 60% or more. If waste heat is captured from these systems for heating or industrial purposes, the overall energy cycle efficiency could reach 80%. In a real gas turbine, mechanical energy is changed irreversibly into pressure and thermal energy when the gas is compressed. Heat is added in the combustion chamber and the specific volume of the gas increases, accompanied by a slight loss in pressure. Possessing a high thermal efficiency and at the same time possessing all the advantages of a rotary engine, the gas turbine has great potential. This book is offers insight into the basic physical, chemical, and aerodynamic processes associated with gas turbine combustion and their relevance and application to combustor performance and design.

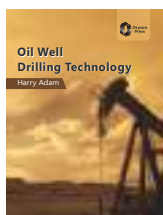


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### Gas Well Deliquification

Anthony Ben Dvorsky

Deliquification of a low-pressure gas well requires a unique approach, tools, and staffing than artificially lifting an oil well. Deliquification problems are challenging. The energy available to lift reservoir fluids at low pressure requires the well operator to have the knowledge and understanding that a few pounds of pressure drop could make a difference in the success of the whole operation. Use of pumps to move fluids has a wide variety of applications. In the manufacturing sector, pumps consume about 27% of all electricity moving product, transferring heat and producing useful power in hydraulic systems. In the buildings sector, pumps move water throughout buildings for heating and cooling, and between chillers and cooling towers, and are commonly used. Careful analysis can improve the energy efficiency of most pump systems. A hydraulic pump operates similarly to a gas lift system, with high pressure power fluid used as the energy source in place of high pressure gas. There are two different types of hydraulic pumps: piston and jet. This book is useful to cater to the requirements of teachers, researchers and students.

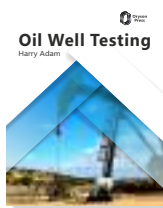


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### Oil Well Drilling Technology

Harry Adam

This book is about oil well drilling, blowouts and its' effects on the environment and human life. These include how drills work, and have worked through the ages, and the evolution in drill well technology. Other topics include the types of blowouts, fighting oil well fires and blowouts, and methods of quenching blowouts. A comprehensive history of oil wells and other vertical wells has also been covered, along with the benefits and disadvantages of drilling wells directionally. In addition, different types of drilling is an explored in detail. This academic book is beneficial for all students and professionals in this field of oil well drilling technology.

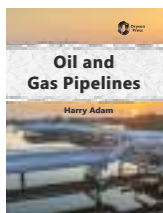


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### Oil Well Testing

Harry Adam

In the petroleum industry, a well test is the execution of a set of planned data acquisition activities to broaden the knowledge and understanding of hydrocarbons properties and characteristics of the underground reservoir where hydrocarbons are trapped. The test will also provide information about the state of the particular well used to collect data. The overall objective is identifying the reservoir's capacity to produce hydrocarbons, such as oil, natural gas and condensate. Outcomes of a well test may support the well allocation process for an ongoing production phase, while other data about the reservoir capabilities will support reservoir management. Other sources of information to the model are well log data and seismic data, but such data are complementary only, and for example, seismic data is insufficient to interpret whether a structural trap has been sealed. Information from well tests will supplement the amount of information with flow rate data, pressure data, and other, which is needed to build a rich reservoir model. This valuable book covers all the major operational aspects of oil and gas well testing and uses a structured approach to guide the reader through the steps required to safely and effectively plan a well test operation.

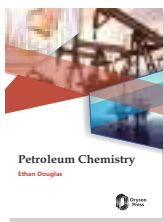


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### Oil and Gas Pipelines

Harry Adam

Crude oil, also referred to as petroleum, is a resource that is drilled throughout the world. There are three major types of pipelines along the transportation route: the gathering system, the interstate pipeline system, and the distribution system. Pipelines can also be characterised as interstate or intrastate. Interstate pipelines are similar to the interstate highway system wherein they carry natural gas across state boundaries, and in some cases across the country. Intrastate pipelines, on the other hand, transport natural gas within a particular state. Natural gas pipeline companies have customers on both ends of the pipeline, the producers and processors that input gas into the pipeline and the consumers and local distribution companies that take gas out of the pipeline. To manage the natural gas that enters the pipeline and ensure that all customers receive timely delivery of their portion of this gas, sophisticated control systems are required to monitor the gas as it travels through all sections of a potentially very lengthy pipeline network. To accomplish the task of monitoring and controlling the natural gas that is traveling through the pipeline, centralised gas control stations collect, assimilate, and manage the data received from monitoring city gate stations and compressor stations all along the pipeline. This book will be useful for the Engineering as well as science graduate, post-graduate students and researchers of various universities.

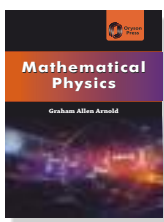


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## Petroleum Chemistry

Ethan Douglas

Geologists use the science of petroleum chemistry to assist in exploration. From the composition of the oil and variations of properties in a trend or basin, they may find clues on how the crude was formed millions or hundreds of millions of years ago. Reservoir engineers use it to determine how the liquid and gas properties will change in the reservoir in response to fluid withdrawals. For the production and facility engineers, petroleum chemistry is vital in the design of wells, artificial lift and facilities. Corrosion and toxicity of the produced gas may be a critical factor in the design of facilities and wells. Petroleum Chemistry is made of a mixture of different hydrocarbons. The most prolific hydrocarbons found in the chemistry of petroleum are alkanes, which are also termed as paraffins. Also known as saturated hydrocarbons and they exhibit either branched or straight molecule chains. For fuel purposes only the alkanes from the following groups are used: Pentane and Octane will be refined into Gasoline, Hexadecane and Nonane will be refined into Kerosene or Diesel or used as a component in the production of jet fuel, Hexadecane will be refined into fuel or heating oil. This book explores the various uses and significance of Petroleum Chemistry.

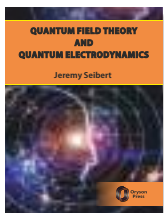


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## Mathematical Physics

Graham Allen Arnold

The theory of mathematical physics was developed almost concurrently with the mathematical fields which involve linear algebra, spectral theory of operators and more broadly functional analysis. The special and general theories of relativity require a rather different type of mathematics. This was group theory and it played an important role in both quantum field theory and differential geometry. This was, however, gradually supplemented by topology in the mathematical description of cosmological as well as quantum field theory phenomena. Mathematical physics forms a separate field, which is closely related with the more mathematical ergodic theory with involvement of physics along with probability theory. The usage of the term 'Mathematical physics' is sometimes idiosyncratic. Certain parts of mathematics that initially arose from the development of physics are not considered parts of mathematical physics, with other closely related fields. This book sheds light on subjects like the history and overview of mathematical physics, relativity and quantum era, the principle of relativity, Physics of spiral in consciousness units, characteristic equation of a matrix, Bohrs idea of mathematical physics, vector spaces, etc.

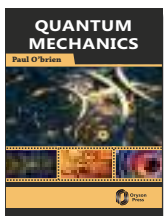


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## Quantum Field Theory and Quantum Electrodynamics

Jeremy Seibert

Quantum Field Theory (QFT) is the mathematical and conceptual framework for contemporary elementary particle physics. Explained simply, it is that extension of Quantum Mechanics (QM) dealing with particles, over to fields; i.e. systems with an infinite number of degrees of freedom. In particle physics, Quantum Electrodynamics (QED) is the relativistic quantum field theory of electrodynamics. In essence, it describes how light and matter interact and is the first theory where full agreement between quantum mechanics and special relativity is achieved. Quantum Electrodynamics mathematically describes all phenomena involving electrically charged particles interacting by means of exchange of photons and represents the quantum counterpart of classical electromagnetism giving a complete account of matter and light interaction. Quantum Field Theory (QFT) is perhaps the single most important concept in physics to be discovered in the twentieth century. This book reflects the multidimensional impact of QFT on the evolution of physics in the last century.

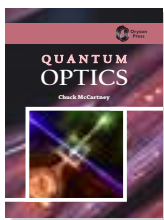


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## Quantum Mechanics

Paul O'Brien

There are very basic laws of physics going on all around us that we instinctively grasp - gravity makes things fall to the ground, pushing something makes it move, two things can't occupy the same place at the same time. At the turn of the century, scientists thought that these laws apply to everything in nature. That was until they began to study the world of the ultra-small. Atoms, electrons, light waves, none of these things followed the normal rules. As physicists began to study particles, they discovered new physics laws that were downright quirky; these were the laws of Quantum Mechanics. They dealt with physical phenomena at nanoscopic scales where the action is on the order of the Planck constant. Quantum Mechanics provides a mathematical description of much of the dual particle-like and wave-like behavior and interactions of energy and matter. This textbook is aimed at graduates and post-graduate students needing a textbook for a comprehensive treatment of Quantum Mechanics.



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### Quantum Optics

Chuck McCartney

Light is made up of particles called photons and hence is inherently 'grainy' (quantized). Quantum optics studies the nature and effects of light as quantized photons. The first indication that light might be quantized came from Max Planck in 1899 when he correctly modelled blackbody radiation. By assuming blackbody radiation is quantized, Bohr showed that the atoms were also quantized, in the sense that they could only emit discrete amounts of energy. The understanding of the interaction between light and matter following these developments not only formed the basis of quantum optics but was also crucial for the development of quantum mechanics as a whole. The book also dwells on the topics of Quantum Wave Theory, nature of light, Quantum Phenomenon of light, Coherence Theory, Geometric Optics, generation of Quantum Optics, and Quantum Laser Technology.



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### Solid State Physics

Alice Sobol

Matter that makes up every known substance to man occurs in nature in three distinct forms - solid, liquid and gas. Irrespective of their classification all forms of matter consist of molecules which can be further classified into atoms. These atoms interact intensely producing the mechanical, thermal, electrical, magnetic and optical properties of the state of matter. Depending on the material involved and the conditions in which it was formed, the atoms may be arranged in a regular, geometric pattern or irregularly. The bulk of solid-state physics as a general theory and not really a proven form of research is focused on crystals. Primarily, this is because the periodicity of atoms in a crystal - its defining characteristic - facilitates mathematical modelling. The book explores such concepts along with other related subject matter. Table of contents - States of Matter, Atomic Concept, Atomic Physics, Radioactivity, Atomic Structure, Electrostatic Force, Matter and Magnetic Force, Electric Fields, Review of Energy Dispersion Relations in Solids.



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### Catering Hospitality Industry and Tourism Management

Elsa Norris

The hotel and catering is a broad and diverse industry. Catering management is part of the food services industry that involves the planning and organisation of food and beverage services for various kinds of events. Important aspects of catering management include: meeting customer expectations, maintaining food and hygiene standards, and meeting financial targets. Catering managers are usually employed in-house by catering companies, hotels, schools, hospitals, prisons, airlines and cruise lines, or they work as independent contractors or establish their own catering companies. The hotel and catering industry employs over two million full and part-time workers. This ranges from large scale food processing to individual cook, to order catering. In addition, the hospitality industry comprises of an array of businesses that provide services and facilities like accommodation, food and beverage, entertainment, gaming and related products and services. The aim of this book is to provide the reader with the knowledge of the dynamics of catering, hospitality and tourism. It covers a wide variety of problems associated with workforce planning and employment in this industry.



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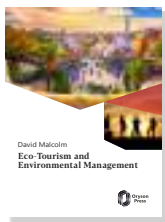
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### Catering Management

Leonard Watson

Catering managers run the day-to-day catering operations and services in restaurants, hotels, resorts, and more. Catering managers are tasked with optimizing the quality of the food, service and performance of their outlets. Catering management may be defined as the task of planning, organizing, controlling and executing. The most important part of the job is achieving good quality at low cost and maintaining high standards of hygiene and customer satisfaction. They can be categorised into party food caterers, hot buffet caterers and full-service caterers. Party food caterers supply only the food for an event by dropping off cold foods and any last minute service, preparation and clean-up is left to others. Hot buffet caterers provide hot foods that are delivered from their commissaries in insulated containers and provide servers at an additional charge. Full-service caterers provide food and frequently cook it to order on-site. In addition, they provide service personnel at the event, plus all the necessary food-related equipment, including tables and chairs, tents, and other such things. They can arrange for other services, like décor and music, and such a caterer can plan an entire event, much more than just the food. This book covers almost all the significant facets related to management of catering, including food and beverage distribution.





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## Eco-Tourism and Environmental Management

David Malcolm

Ecotourism, as an alternative tourism, that involves visiting natural areas in order to learn, to study, or to carry out environmentally friendly activities. It is a tourism based on the experience of nature, which enables the economic and social development of local communities. It is a more synergetic approach to tourism that tends to bond the tourist, local community and the environment. Ecotourism is a subset of the field of sustainable tourism. That's the primary reason why developing countries are now embracing it, and including it in their economic development and conservation strategies. Ecotourism is cultural tourism, nature tourism; such as assisting with conservation programmes, a travel learn experience, a little bit of soft adventure, and beneficial for the indigenous peoples. It focuses primarily on experiencing and learning about nature, its landscape, flora, fauna and their habitats; as well as cultural artifacts from the locality. Environmental managers operate with the assumption that there is an optimum balance between environmental protection and permissible human activities. Ethics dictates where that balance lies. The book comprises a thorough exploration of eco-tourism and its effects on sustainable development.



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## Food and Wine Tourism

Vanessa Davenport

Culinary tourism, also known as food tourism, is the pursuit of unique and memorable eating and drinking experiences. Culinary tourism differs from agritourism; culinary tourism is considered a subset of cultural tourism. Cultural tourism is a manifestation of culture, whereas agritourism is considered a subset of rural tourism. Culinary tourism and agritourism are inextricably linked, as the seeds of cuisine can be found in agriculture. Culinary tourism goes beyond gourmet food. Culinary tourism is not limited by food culture. Food is one of the fundamental economic drivers of tourism. Wine tourism refers to tourism that includes the tasting, consumption or purchase of wine; often at or near the source. Wine tourism can consist of visits to wineries, vineyards and restaurants known to offer unique vintages, as well as organized wine tours, wine festivals or other special events. This is true for countries such as Spain, Portugal, Hungary, France or Italy, as well as for Australia, Argentina, Chile, United States or South Africa, where wine tourism plays an important role in advertising their products. This book explores the culinary industry and the role it plays in tourism.



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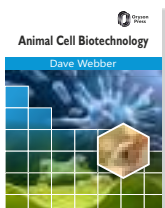
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## Hospitality and Food Management

Isabel Green

The hospitality and food management covers current trends and conditions in the hospitality industry. The hospitality industry, particularly its food service component, is an important sector of many nations' economies. Developing nations should take steps to encourage development of hotels and restaurants. Those steps include improving training, offering tax incentives, and clearing up questions about land ownership. By the same token, restaurant and hotel operators should seek to make the best possible use of local resources, for example by serving locally produced foods when possible. By setting up a five year plan for tourism development, national governments can gain the advantages of international tourism. One source of development will undoubtedly be United States-based food service chains, which are now expanding internationally. As an example, the food-service industry is an important part of the U.S. economy and with proper assistance can become vital to other nations' economies. This modern food system relies heavily on technology, transportation, management and logistics for physical fulfillment, and on marketing and government regulation for maintaining an efficient consumer market. An incredibly wide range of businesses and individuals are employed by and profit from all aspects of this huge and complex system. A tremendous amount of governmental regulation and administration is also involved in this continual flow of materials, food products, and related information. This book offers an excellent introduction to the industry as well as a wealth of practical, how to information for anyone entering the field.



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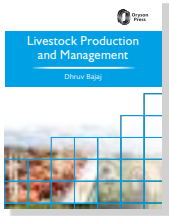
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## Animal Cell Biotechnology

Dave Webber

Animal biotechnology is the use of science and engineering to modify living organisms. The goal is to make products, to improve animals and to develop microorganisms for specific agricultural uses. Modified animals through cross-breeding have been used for centuries so as to create animals that can be of use to humans. This book also looks at transgenics and cloning. The potential benefits of animal biotechnology and its drawbacks are all explored in detail, in the academic book.



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### Livestock Production and Management

Dhruv Bajaj

Animal-rearing has originated during the cultural transition to settled farming communities rather than hunter-gatherer lifestyles. Animals are 'domesticated' when their breeding and living conditions are controlled by humans. Over time, the collective behavior, life cycle, and physiology of livestock have changed radically. Many modern farm animals are unsuited to life in the wild. Dogs were domesticated in East Asia about 15,000 years ago, Goats and sheep were domesticated around 8000 BC in Asia. Swine or pigs were domesticated by 7000 BC in the Middle East and China. The term 'livestock' is nebulous and may be defined narrowly or broadly. On a broader view, livestock refers to any breed or population of animal kept by humans for a useful, commercial purpose. This can mean domestic animals, semi-domestic animals, or captive wild animals. Some people may use the term livestock to refer to only domestic animals or even to only red meat animals. During the history of animal husbandry, many secondary products have arisen in an attempt to increase carcass utilization and reduce waste. Farming practices vary dramatically worldwide and between types of animals. Livestock are generally kept in an enclosure, are fed by human-provided food and are intentionally bred, but some livestock are not enclosed, or are fed by access to natural foods, or are allowed to breed freely, or any combination thereof. This book dwells deep into each aspect of livestock production and offers insights into the practices of the industry at large.



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### Veterinary Biochemistry and Biotechnology

Nathan Melton

Biotechnological approaches have great potential in rapid expansion of livestock through newer, cheaper and reliable means of producing effective vaccines and diagnostics for animal health care management. Biotechnology when applied to animals focuses on livestock breeding and husbandry, nutrition and health, and the production of transgenic animals. Furthermore, animals play a dual role in furthering biotechnology; they benefit from better health and welfare on the one side, and on the other side help the cause of advancing research in human health. Animals are used in many ways in biotechnology. The animals in research labs help us better understand biology and serve as biological test systems. Other animals and animal products are used to support research by providing products that help technicians to grow cells, viruses, and microbes in culture. Biotechnologists also use animals to produce antibodies. Technologies based on modern biotechnology offer enormous potential for the production of vaccines, medicinal products and other veterinary products. This book is prepared keeping in view the young minds of the students who just entered a professional course. It aims to simplify learning while helping them better their skills to meet the standards of the industry.

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