# Table of Contents

**Preface** .................................................................................................................................................. XV

### Section 1

**Software Development Methodologies and Techniques**

**Chapter 1**
Determining the Requirements for E-Selection in a Small Recruitment Company: Using the Regulative Cycle .......................................................................................................................... 1

* Tanya Bondarouk, University of Twente, The Netherlands  
  Huub J. M. Ruël, Windesheim University of Applied Sciences, The Netherlands  
  Paul Timmermans, University of Twente, The Netherlands

**Chapter 2**
A Constructive Approach for Conceptual Database Design ................................................................. 38

* Elvira Locuratolo, ISTI Consiglio Nazionale delle Ricerche, Italy

**Chapter 3**
A Survey on Secure Software Development Lifecycles .......................................................................... 57

* José Fonseca, DEI/CISUC, University of Coimbra/UDI, Polytechnic Institute of Guarda, Portugal  
  Marco Vieira, DEI/CISUC, University of Coimbra, Portugal

**Chapter 4**
Quality Practices for Managing Software Development in Information System ................................. 74

* Syeda Umema Hani, GSESIT, Hamdard University, Pakistan & Sir Syed University of Engineering & Technology, Pakistan

**Chapter 5**
Project Management and Diagramming Software .................................................................................... 97

* Rizaldy Rapsing, King Faisal University, Kingdom of Saudi Arabia

**Chapter 6**
Software Development Methodologies for Cloud Computing ............................................................... 110

* Izzat Alsmadi, Yarmouk University, Jordan
Chapter 7
Information System and System Development Life Cycle ......................................................... 118
   Monika Sethi, Panjab University, India
   Anju Sharma, Thapar University, India

Chapter 8
Towards a Theoretical “Cybernetic” Framework: Discovering the Pedagogical Value of the Virtual World “Second Life” ................................................................. 128
   Pellias Nikolaos, University of the Aegean, Greece

Chapter 9
Information Systems and Software Development ................................................................. 182
   Arshad Siddiqi, Institute of Business Administration, Pakistan

Chapter 10
Toward Agile Interactive Software Development Process Models for Crowd Source Projects .... 199
   Izzat Alsmadi, Yarmouk University, Jordan
   Saqib Saeed, Bahria University, Pakistan

Chapter 11
Software Development Techniques for Constructive Information Systems .......................... 214
   Runa Jesmin, Imperial College London, UK & Harefield Hospital, UK

Section 2
Advanced Topics in Software Engineering

Chapter 12
Software Security Engineering – Part I: Security Requirements and Risk Analysis .............. 221
   Issa Traore, University of Victoria, Canada
   Isaac Woungang, Ryerson University, Canada

Chapter 13
Software Security Engineering – Part II: Security Policy, Analysis, and Design ................. 256
   Issa Traore, University of Victoria, Canada
   Isaac Woungang, Ryerson University, Canada

Chapter 14
A Comparative Analysis of Software Engineering Approaches for Sequence Analysis .......... 285
   Muneer Ahmad, King Faisal University, Saudi Arabia
   Low Tang Jung, University Technology PETRONAS, Malaysia
   Noor Zaman, King Faisal University, Saudi Arabia
Chapter 15
Development of Enterprise Content Management Systems: A Procurement-Centric Approach
Jaffar Ahmad Alalwan, Institute of Public Administration, Dammam, Saudi Arabia

Chapter 16
Fault Tree Analysis (FTA) via Binary Diagram Decision (BDD) for Information Systems Design
Fausto Pedro García Márquez, University of Castilla-La Mancha, Spain
Alberto Pliego Mangurán, University of Castilla-La Mancha, Spain
Noor Zaman, King Faisal University, Saudi Arabia

Chapter 17
Developing Semantic Web Applications
Qazi Mudassar Ilyas, King Faisal University, Saudi Arabia

Chapter 18
Knowledge Management
Arshad Siddiqi, Institute of Business Administration, Pakistan

Chapter 19
A Software Engineering Approach for Access Control to Multi-Level-Security Documents
Muneer Ahmad, King Faisal University, Saudi Arabia
Noor Zaman, King Faisal University, Saudi Arabia
Low Tang Jung, University Technology PETRONAS, Malaysia
Fausto Pedro García Márquez, University of Castilla-La Mancha, Spain

Chapter 20
Trends in Information Security
Partha Chakraborty, Cognizant Technologies, India
Krishnamurthy Raghuraman, Cognizant Technology Solutions, India

Chapter 21
Constructive Knowledge Management Model and Information Retrieval Methods for Software Engineering
Zeyar Aung, Masdar Institute of Science and Technology, UAE
Khine Khine Nyunt, King Faisal University, Kingdom of Saudi Arabia

Chapter 22
Modeling Transparency in Software Systems for Distributed Work Groups
A B Sagar, Hyderabad Central University, India
Chapter 23
Ontology Augmented Software Engineering ................................................................. 406

Qazi Mudassar Ilyas, King Faisal University, Saudi Arabia

Compilation of References .......................................................................................... 414

About the Contributors ............................................................................................... 449

Index ........................................................................................................................... 456