

CONTENTS

1. Human Factors Function	1
1. The Discipline of Human Factors and Ergonomics <i>Waldemar Karwowski</i>	3
2. Human Factors Engineering and Systems Design <i>Sara J. Czaja and Sankaran N. Nair</i>	38
2. Human Factors Fundamentals	57
3. Sensation and Perception <i>Robert W. Proctor and Janet D. Proctor</i>	59
4. Selection and Control of Action <i>Robert W. Proctor and Kim-Phuong L. Vu</i>	95
5. Information Processing <i>Christopher D. Wickens and C. Melody Carswell</i>	117
6. Cross-Cultural Design <i>Tom Plocher, Pei-Luen Patrick Rau, and Yee-Yin Choong</i>	162
7. Decision-Making Models, Decision Support, and Problem Solving <i>Mark R. Lehto, Fiona Fui-Hoon Nah, and Ji Soo Yi</i>	192
8. Mental Workload and Situation Awareness <i>Michael A. Vidulich and Pamela S. Tsang</i>	243
9. Social and Organizational Foundations of Ergonomics <i>Alvaro D. Taveira and Michael J. Smith</i>	274
10. Human Factors and Ergonomic Methods <i>Julie A. Jacko, Ji Soo Yi, François Sainfort, and Molly McClellan</i>	298
11. Anthropometry for Product Design <i>Kathleen M. Robinette</i>	330
12. Basic Biomechanics and Workstation Design <i>William S. Marras</i>	347
3. Design of Tasks and Jobs	383
13. Task Analysis: Why, What, and How <i>Erik Hollnagel</i>	385

14. Task Design and Motivation	397
<i>Holger Luczak, Tanja Kabel, and Torsten Licht</i>	
15. Job and Team Design	441
<i>Frederick P. Morgeson, Michael A. Campion, and Patrick F. Bruning</i>	
16. Personnel Recruitment, Selection, and Turnover	475
<i>Jerry W. Hedge, Walter C. Borman, and Dan Ispas</i>	
17. Design, Delivery, Evaluation, and Transfer of Training Systems	490
<i>Chris W. Coultas, Rebecca Grossman, and Eduardo Salas</i>	
18. Human Factors in Organizational Design and Management	534
<i>Pascale Carayon, Peter Hoonakker, and Michael J. Smith</i>	
19. Situation Awareness	553
<i>Mica R. Endsley</i>	
20. Affective Engineering and Design	569
<i>Martin G. Helander and Halimahtun M. Khalid</i>	
4. Equipment, Workplace, and Environmental Design	597
21. Workplace Design	599
<i>Nicolas Marmaras and Dimitris Nathanael</i>	
22. Vibration and Motion	616
<i>Michael J. Griffin</i>	
23. Sound and Noise: Measurement and Design Guidance	638
<i>John G. Casali</i>	
24. Illumination	673
<i>Peter R. Boyce</i>	
5. Design for Health, Safety, and Comfort	699
25. Occupational Health and Safety Management	701
<i>Mark R. Lehto and Bradley T. Cook</i>	
26. Human Error and Human Reliability Analysis	734
<i>Joseph Sharit</i>	
27. Managing Low-Back Disorder Risk in the Workplace	801
<i>William S. Marras</i>	
28. Work-Related Upper Extremity Musculoskeletal Disorders	826
<i>David Rodrick, Waldemar Karwowski, and William S. Marras</i>	
29. Warnings and Hazard Communications	868
<i>Michael S. Wogalter, Kenneth R. Laughery, Sr., and Christopher B. Mayhorn</i>	
30. Use of Personal Protective Equipment in the Workplace	895
<i>Grażyna Bartkowiak, Krzysztof Baszczyński, Anna Bogdan, Agnieszka Brochocka, Rafał Hrynyk, Emilia Irzmańska, Danuta Koradecka, Katarzyna Majchrzycka, Krzysztof Makowski, Anna Marszałek, Grzegorz Owczarek, and Jan Żera</i>	
31. Human Space Flight	910
<i>Barbara Woolford, Walter E. Sipes, and Edna R. Fiedler</i>	

6. Performance Modeling	929
32. Modeling Human Performance in Complex Systems <i>K. Ronald Laughery, Jr., Beth Plott, Michael Matessa, Susan Archer, and Christian Lebiere</i>	931
33. Mathematical Models in Engineering Psychology: Optimizing Performance <i>Donald L. Fisher, Richard Schweickert, and Colin G. Drury</i>	962
34. Human Supervisory Control <i>Thomas B. Sheridan</i>	990
35. Human Digital Modeling in Design <i>Vincent G. Duffy</i>	1016
36. Virtual Environments <i>Kay M. Stanney and Joseph V. Cohn</i>	1031
37. Neuroergonomics in Human–System Interaction <i>Dylan Schmorrow, Kay M. Stanney, Kelly S. Hale, Sven Fuchs, Glenn Wilson, and Peter Young</i>	1057
7. Evaluation	1083
38. Accident and Incident Investigation <i>Patrick G. Dempsey</i>	1085
39. Human Factors and Ergonomics Audits <i>Colin G. Drury and Patrick G. Dempsey</i>	1092
40. Cost/Benefit Analysis for Human Systems Investments <i>William B. Rouse and Kenneth R. Boff</i>	1122
41. Methods of Evaluating Outcomes <i>Paula J. Edwards, François Sainfort, Julie A. Jacko, Molly McClellan, and Thitima Kongnakorn</i>	1139
8. Human–Computer Interaction	1177
42. Visual Displays <i>Kevin B. Bennett, Allen L. Nagy, and John M. Flach</i>	1179
43. Information Visualization <i>Chris North</i>	1209
44. Human Factors in Online Communities and Social Computing <i>Panayiotis Zaphiris and A. Ant Ozok</i>	1237
45. Human Factors and Information Security <i>E. Eugene Schultz</i>	1250
46. Usability Testing <i>James R. Lewis</i>	1267
47. User Requirements Collection and Analysis <i>Dieter Spath, Fabian Hermann, Matthias Peissner, and Sandra Sproll</i>	1313
48. Website Design and Evaluation <i>Kim-Phuong L. Vu, Robert W. Proctor, and Fredrick P. Garcia</i>	1323

49. Human Factors in Ambient Intelligence Environments <i>Constantine Stephanidis</i>	1354
50. Interactivity: Evolution and Emerging Trends <i>Constantine Stephanidis, Vassilis Kouroumalis, and Margherita Antona</i>	1374
9. Design for Individual Differences	1407
51. Design for People with Functional Limitations <i>Gregg C. Vanderheiden and J. Bern Jordan</i>	1409
52. Design for Aging <i>Walter R. Boot, Timothy A. Nichols, Wendy A. Rogers, and Arthur D. Fisk</i>	1442
53. Designing for Children <i>Valerie J. Berg Rice</i>	1472
54. Design for All: Computer-Assisted Design of User Interface Adaptation <i>Constantine Stephanidis, Margherita Antona, Anthony Savidis, Nikolaos Partarakis, Konstantina Doulgeraki, and Asterios Leonidis</i>	1484
10. Selected Applications in Human Factors and Ergonomics	1509
55. Human Factors and Ergonomics Standards <i>David Rodrick, Waldemar Karwowski, and Bohdana Sherehiy</i>	1511
56. Office Ergonomics <i>Marvin Dainoff, Wayne Maynard, Michelle Robertson, and Johan Hviid Andersen</i>	1550
57. Human Factors and Ergonomics in Health Care <i>Pascale Carayon, Bashar Alyousef, and Anping Xie</i>	1574
58. Human Factors and Ergonomics in Motor Vehicle Transportation <i>Paul A. Green</i>	1596
59. Human Factors and Ergonomics in Automation Design <i>John D. Lee and Bobbie D. Seppelt</i>	1615
60. Human Factors in Manufacturing <i>Dieter Spath, Martin Braun, and Katrin Meinken</i>	1643
61. Human Factors and Ergonomics in Aviation <i>Steven J. Landry</i>	1667
Index	1689