USER EXPERIENCE FOUNDATIONS

Nick de Voil
Nick de Voil has written a superb introduction to the key principles across the user experience landscape. An essential read for anyone who is looking to create user-centred products or services that solve real problems for humans, regardless of their job title.  

*Chris Burns, Product Manager, MoteHQ*

This book gives all the steps needed to ensure products and services are useful, usable and actually used. Nick de Voil brings his considerable experience to identify what’s both similar and different between user experience and other traditional practices. All this results in a must-read and approachable book.  

*Kate Tarling, Director of Digital, Design and Research, Services Work*

User Experience Foundations offers a comprehensive and standard-setting syllabus to UX. Its clear and concise explanations of key concepts, step-by-step method guides and practical hands-on tips will help anyone wanting to master the craft of real-world user experience.  

*John Knight, Global Service Design Strategy Lead, Avanade*

This book is a good reference for new UX practitioners or anyone who wants to deepen their understanding of user experience. UX is a continuously growing field. This book provides a breadth of information on the subject with practical tips. You’ll get an excellent foundation of knowledge from it.  

*Chui Chui Tan, Director and Founder, Beyō Global*

User Experience Foundations is nicely written, easy to digest and covers the fundamentals of UX. Nick has covered all bases, from user testing techniques to where UX fits in with other disciplines. A must read for anybody considering a role in UX or simply looking to gain knowledge in this area.  

*Adrian Robinson, Lead Agile Business Analyst, CDL (Cheshire Dataysystems Limited)*

This excellent primer blends theory and practice from a number of sources to provide a practical and accessible overview. Crucial reading!  

*Adrian Reed, Principal Consultant, Blackmetric*

Nick de Voil has unlocked the foundations of the user experience (UX) discipline to simply describe what UX professionals ought to do, why they do it and why it works. It challenges what UX is in the construct of user-centred design principles that act as guideposts to optimise user experience.  

*Milvio DiBartolomeo, ICT Portfolio, Programme and Project Professional*
Nick de Voil has written an invaluable guide on how UX supports digital product development and how to design experiences which meet people’s needs. This book is a good reference for those starting their career in UX as well as product owners, business analysts and digital marketeers.

Nichola Musgrove, Senior User Experience Designer, Ordnance Survey

Nick de Voil is spot on with the details needed to understand the field of human centred design. He clearly explains how user research is integral to good design. This is a great starting point for anyone getting to grips with user experience work.

Franny Gant, Senior User Researcher, Care Quality Commission

If you’re considering a User Experience role, there is a lot to learn - guiding principles, context of use, usability evaluation. This book gives a 360-degree view of this fascinating role and how it fits the big picture of a whole software development lifecycle!

Ahmed Tealeb, Senior Software Development Engineer in Test, Ministry of Interior, State of Qatar

I was so excited to read this book as we often struggle with stakeholders who don’t always understand the importance of UX when designing new products and services. This book really hits the nail on the head and is brilliant for anyone wanting to get their head around user experience design and research and its importance.

Katie Derham, Innovation Manager, Allen and Overy LLP

It seems everyone talks about UX, yet it is often misunderstood. Fortunately, there is a recognised standard at the core of UX and Human Centred Design which Nick de Voil uses as a framework in this clear overview of the HCD process and UX activities. I highly recommended this book as a pragmatic, easy to read introduction to this important and fascinating field.

Chris Rourke, Founder and CEO, User Vision

A business analyst often needs to be a jack of all trades with a foundation-level understanding of many subject areas and a comprehensive toolbox of techniques to draw from. This book succeeds in adding a solid understanding of the professional discipline of UX backed up by a comprehensive set of techniques and recommended practices.

Mark Ainsworth, Business Analyst, Promising ICT Limited

As UX has matured over the last ten years, there is a higher expectation to describe the rationale behind every pixel on the screen. This book helps to tell that vital story of WHY with context and tactics to handle any design situation. Nick de Voil has done a great job condensing the vast subject of UX into this book for those new to the field of UX, current practitioners, experts and those with a vested interest.

Paul Wilshaw, Head of UX and UI, Blue Prism Ltd
This book provides a good introduction to UX and user-centred design to accompany and prepare for BCS foundation level UX certification. In addition, Nick de Voil shares valuable advice to aid practical application. I particularly enjoyed the easily accessible chapter on ‘illustrating the context of use’ and the advice on designing simplified useful systems.

Michael Greenhalgh, Director, Business Engagement and Analysis, British Council

User experience encompasses many still-emerging practices, making teaching and learning interesting and challenging all at once. This book does well to provide a comprehensive overview of its fundamentals.

Boon Yew Chew, Principal Designer, Elsevier and Local Leader, IxDA London

An informative introduction to UX which will enable the reader to navigate confidently. The book dispels commonly misunderstood terms and provides a practical framework to deliver UX. A must read for the modern digital business analysts.

Rizwana Qureshi, Business Analysis Capability Lead, Hitachi Vantara

This book distils the knowledge of several books and international standards into an easy-to-read form that is accessible for beginners and experts alike. Its comprehensive list of references and engaging exercises make it an invaluable learning resource. I recommend it to everyone who wishes to gain an understanding of user experience.

Tamer El-Tonsy, HCM Solutions Architect and Business Analyst, Tatonsy Consulting

I recommend all business analysts read the book to add a new dimension to their work, maximize their results and improve communication with the user experiences experts.

Mohamed Zahran, Lead Business Analyst, e-finance and IIBA Egypt Chapter President

A concise and very well-crafted piece of knowledge about UX, Usability and UCD/HCD in general. I wish I had it for my students when I was teaching UX myself. During my career both as a leader of the company and as a consultant in HCD field I found it particularly important to have a common language with all the stakeholders. Among other good things this book does that one particularly well!

Yuri Vedenin, Founder and President, UXPressia
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BCS, THE CHARTERED INSTITUTE FOR IT

BCS, The Chartered Institute for IT, is committed to making IT good for society. We use the power of our network to bring about positive, tangible change. We champion the global IT profession and the interests of individuals, engaged in that profession, for the benefit of all.

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USER EXPERIENCE FOUNDATIONS

Nick de Voil
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Nick de Voil is an information systems consultant specialising in helping organisations to design and implement people-oriented processes and systems. His three decades of experience have been gained largely with international capital markets participants, UK public sector bodies and internet startups. A strong believer in breaking down barriers between professional disciplines, Nick has close links with several different communities of practice. At the time of writing he is president of the UK chapter of the International Institute for Business Analysis, a Certified Management Consultant, a Chartered Member of the Institute for Securities and Investment, and a member of BCS, The Chartered Institute for IT, the User Experience Professionals Association, the Business Architecture Guild, the Data Management Association and the Institute of Consulting. Nick is a popular public speaker and has trained hundreds of professionals in user experience, business analysis, project management and requirements engineering.

Nick has an MSc in Human-Computer Interaction with Ergonomics from UCLIC, the University College London Interaction Centre.
There are few roles in digital design as misunderstood as the discipline of user experience. To some, it means designing user interfaces so that they are pleasant to use. To others, it means providing signposts so that a digital product is simple to navigate. Still others view user experience as the process of understanding user needs.

The discipline of user experience is about all of these, and more. But without a syllabus and a professional qualification to define the scope of the field, it risks being misunderstood and misinterpreted.

Until now.

The book you are now holding is the first of its kind. It describes the content in the BCS Foundation Certificate in User Experience. With a syllabus based on the international standard, ISO 9241-210 ‘Human-Centred Design for Interactive Systems’, BCS defined the professional scope of user experience. By attaining the BCS Foundation Certificate in User Experience, you will be able to:

- Ensure systems have an early and continual focus on users and their tasks.
- Plan and carry out empirical measurements of user behaviour.
- Practise validated learning through prototyping and iterative design.

To attain these goals, you will need to prove you understand both user experience research and user experience design. This means knowing how to carry out contextual user research and how to run usability testing. It also means understanding information architecture, interaction design and visual design. This makes the syllabus of the BCS Foundation Certificate in User Experience both broad and challenging.

There are several books that cover the research component of user experience. And there are many others that describe the design component of the field. But few books successfully integrate these components in a single volume. Nick de Voil has done exactly that with the book you hold in your hands.

I have used the comprehensive syllabus that Nick outlines in this book to train thousands of user researchers and designers in the field of user experience. Many of my students have gone on to have successful careers in user experience and you can do it too. I wish you the best of luck.

Dr David Travis
Director
Userfocus
I would like to thank everyone who has been involved with the development of the BCS Foundation Certificate in User Experience. In particular I am grateful to Dr David Travis for his significant assistance and guidance with this book. I also want to acknowledge the kind advice on international standards given to me by the late Nigel Bevan.

Becky Youe and Ian Borthwick at BCS have been models of forbearance and encouragement throughout the book’s long gestation. Thank you, Becky and Ian! In addition, I am indebted to BCS for allowing the use of the sample exam material.

Thanks to all those who have encouraged me by word and example to set out on this journey and persevere with it, in particular Drs Penny Pullan and Mike Goodland and Adrian Reed. Heartfelt thanks also to the lecturers at UCLIC who taught me so much about human–computer interaction and ergonomics, and to my colleagues and students, too numerous to name individually, who have taught me even more.

Above all, thank you to my wife Nina for her patience and support.

Nick de Voil
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<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AEIOU</td>
<td>activities, environments, interactions, objects, users</td>
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<td>CX</td>
<td>customer experience</td>
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<td>DSDM</td>
<td>Dynamic Systems Development Method</td>
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<tr>
<td>EA</td>
<td>enterprise architecture</td>
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<td>GUI</td>
<td>graphical user interface</td>
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<td>HCD</td>
<td>human-centred design</td>
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<td>HCI</td>
<td>human–computer interaction</td>
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<tr>
<td>HTML</td>
<td>Hypertext Markup Language</td>
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<tr>
<td>HTML5</td>
<td>HTML version 5</td>
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<tr>
<td>IA</td>
<td>information architecture</td>
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<tr>
<td>IEC</td>
<td>International Electrotechnical Commission</td>
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<td>IEEE</td>
<td>Institute of Electrical and Electronics Engineers</td>
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<tr>
<td>ISO</td>
<td>International Organization for Standardization</td>
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<tr>
<td>IxD</td>
<td>interaction design</td>
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<tr>
<td>LATCH</td>
<td>location, alphabet, time, category, hierarchy</td>
</tr>
<tr>
<td>MECE</td>
<td>mutually exclusive, collectively exhaustive</td>
</tr>
<tr>
<td>PACT</td>
<td>people, activities, contexts, technologies</td>
</tr>
<tr>
<td>PARC</td>
<td>proximity, alignment, repetition, contrast</td>
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<tr>
<td>SFIA</td>
<td>Skills Framework for the Information Age</td>
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<tr>
<td>SUS</td>
<td>System Usability Scale</td>
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<tr>
<td>UCD</td>
<td>user-centred design</td>
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<td>UI</td>
<td>user interface</td>
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<td>UML</td>
<td>Unified Modeling Language</td>
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<td>UX</td>
<td>user experience</td>
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<td>W3C</td>
<td>World Wide Web Consortium</td>
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<tr>
<td>WAI</td>
<td>Web Accessibility Initiative</td>
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<tr>
<td>WCAG</td>
<td>Web Content Accessibility Guidelines</td>
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A/B testing: A technique used to compare two alternative designs of a live interactive system with a large number of users.

Accessibility: The usability of a product, service, environment or facility by people with the widest range of capabilities (ISO 9241-171).

Accuracy: The extent to which an actual outcome matches an intended outcome (ISO 9241-11).

Affinity diagram: A method used by design teams to organise large amounts of qualitative research data and information into groups so that the data can be analysed.

Affordance: The properties of an object that suggest to people how the object can be interacted with; the kind of interaction that is so suggested. Compare signifier.

Alignment: The placing of graphical user interface elements so that they share horizontal or vertical coordinates.

Assumption persona: A persona developed without user research.

Boomerang technique: Answering a question with another question.

Card sort: A research method where participants organise features, functions or pages of a user interface into groups that make sense to the participants.

Closed card sort: A card sort where the categories into which information can be sorted have been predefined.

Closed question: A question where the participant must choose an answer from among a proposed list of responses. No answer other than the ones proposed is allowed.

Completeness: The extent to which users are able to achieve all intended outcomes (ISO 9241-11).

Conceptual model: A model representing the system structure and logical architecture envisaged by the designer of an interactive system.

Context of use: The users, goals and tasks, resources, and the technical, physical, social, cultural and organisational environments in which a product is used.
Contextual inquiry: A research method where a researcher carries out a site visit to observe users carrying out their normal activities in their natural environment.

Contrast: A visual design technique where the object of attention is made very different from the other elements that surround it.

Design pattern: A re-usable solution to a commonly occurring design problem.

Diary study: A longitudinal research method where users keep track of the activities in which they engage.

Discount usability: An approach to usability that seeks to optimise usability methods for cost-effectiveness.

Effectiveness: The accuracy and completeness with which users achieve specified goals. Compare efficiency (ISO 9241-11).

Efficiency: The resources used in relation to the results achieved (ISO 9241-11).

Empathy map: A visual summary of what the user hears, sees, thinks and feels within the context of use.

Ethnography: The scientific description of people and cultures with their customs, habits and mutual differences.

Eye tracking: A technique used to measure either the point of gaze (where the user is looking) or the motion of the user’s eye relative to the head.

Fidelity: When used to refer to a prototype, this refers to the degree of exactness with which the prototype reproduces the final design. Note that a prototype can have high visual fidelity but low interactive fidelity (for example, static screens created in a graphics program), and low visual fidelity but high interactive fidelity (for example, a paper prototype).

Fitts’ law: The time taken to move to a target is a function of the target size and the distance to the target.

Fixation: The pause of an eye movement on a specific area of the visual field.

Formative usability test: A type of iterative usability testing that aims to find problems with a system so they can be fixed.

Functional properties: Inherent properties of a software product that determine what the software is able to do: generally concerned with transformation of input data to output data (ISO/IEC 25010).

Functional requirement: A requirement specifying functional properties of a system.

Gaze plot: A moment-by-moment representation of a user’s eye movement across the screen.
Goal: An intended outcome (ISO 9241-11).

Heat map: A representation of the different areas of the screen where the user has spent the most time looking.

Heuristic: A guideline for evaluating the usability of a user interface.

Hick’s law: The time taken to make a decision increases as the number of choices is expanded.

High-fidelity prototype: A prototype that appears very similar to the final system.

Implementation model: The view of the system from the developers’ point of view, often with system models and so on.

Indirect user: A person who receives output from a system, but does not interact with the system (ISO/IEC 25010).

Information architecture: The discipline that ensures users can find the functions, features or content they need to achieve their tasks.

Interaction design: The practice of identifying design solutions and creating prototype user interfaces.

Interactive system: A combination of hardware and/or software and/or services and/or people that users interact with in order to achieve specific goals (ISO 9241-11).

Interface control: An element of interaction in a graphical user interface, such as a button or scroll bar.

Interface pattern: See design pattern.

Iterative design: A design method based on a cyclical process of prototyping, testing, analysing and refining a system. Based on the results of testing the most recent iteration of a design, changes and refinements are made.

Leading question: An interview question phrased in such a way that it tends to suggest the desired answer.

Longitudinal research: Research that collects data from the same individual(s) over an extended period of time.

Low-fidelity prototype: A prototype that has some characteristics of the target system but is otherwise simple, usually in order to produce the prototype and test broad concepts quickly.

Mental model: The internal, mental representation that a user has about how an interactive system works.

Microcopy: Text labels that appear on buttons, dialog names, form fields and tooltips.
**Moderated usability test:** A usability test where a test administrator is with a test participant in real time (whether physically present or not), for example, to remind the participant to think aloud.

**Moderator:** The person who runs a usability test. The moderator is responsible for ensuring the smooth running of the session and for ensuring that the test objectives are addressed.

**Monothetic agglomerative cluster analysis:** A statistical method of analysing results of a card sorting session.

**Multivariate testing:** Generalised version of A/B testing, where there are more than two alternatives.

**Negative persona:** A persona representing users whom the service is specifically not designed to serve.

**Non-functional requirement:** A requirement specifying properties of a system that are not functional properties.

**Observation:** In the context of a usability test, this is something the participant says or does (as distinguished from an ‘interpretation’, which is the observer’s belief about the cause).

**Open card sort:** A card sort where users can create their own grouping scheme.

**Open question:** A question that cannot be answered ‘Yes’ or ‘No’ but requires the participant to answer with a sentence or two.

**Paper prototype:** A prototyping technique that involves creating drawings (often roughly drawn) of a user interface that can be used to test out design ideas with end users. There is often the ability to ‘interact’ with the prototype.

**Persona:** A fictitious person created to model and describe the goals, needs and characteristics of a specific type or group of users.

**Primary persona:** The main target for the design of the service.

**Primary user:** A person who interacts with the product (ISO 25010).

**Progressive disclosure:** An interaction design technique that helps to maintain the focus of a user’s attention by reducing clutter, confusion and cognitive workload. This improves usability by presenting only the minimum information required for the task at hand.

**Prototype:** Representation of all or part of an interactive system that, although limited in some way, can be used for analysis, design and evaluation (ISO 9241-210); to create and use such representations.

**Proximity:** A visual design technique used to organise and group the various parts of a user interface.
Qualitative research: Analysis of motivations, patterns of thought, opinion, attitude, assessment or behaviour (ISO 20252).

Quantitative research: The numerical representation of observations for the purpose of describing and explaining phenomena that those observations reflect (ISO 20252).

Recall question: A question that requires the participant to remember an event that has happened in the past.

Repetition: A visual design technique used to create consistency and to add visual interest.

Requirement: (1) A condition or capability needed by a user to solve a problem or achieve an objective. (2) A condition or capability that must be met or possessed by a system or system component to satisfy a contract, standard, specification or other formally imposed documents. (3) A documented representation of a condition or capability as in (1) or (2) (IEEE 610.12-1990).

Saccade: The movement of the eye from one part of the visual field to another.

Sample size: The number of participants interviewed or observed and so on in a given research study.

Satisfaction: The extent to which the user’s physical, cognitive and emotional responses that result from the use of a system, product or service meet the user’s needs and expectations (ISO 9241-11).


Signifier: An indicator of how something is designed to be interacted with to get an intended result. Compare affordance.

Sketch: A design concept or solution not intended for testing with users.

Stakeholder: An individual or organisation having a right, share, claim or interest in a system or in its possession of characteristics that meet their needs and expectations (ISO 15288).

Summative usability test: A type of usability testing that aims to measure usability metrics, such as effectiveness, efficiency and satisfaction.

System: A combination of interacting elements organised to achieve one or more stated purposes (ISO 25010).

Task: Physical or cognitive activities required to achieve a goal (ISO 9241-11).

Thinking aloud: A technique from cognitive interviewing where a participant describes his or her thought processes when engaged in an activity.

Unmoderated usability test: A usability test where the test participant works alone on the test tasks, for example, from their home computer.
Usability: The extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use (ISO 9241-11).

Usability inspection: A usability evaluation process where an expert evaluates a design against a set of usability principles or standards.

User: Person who interacts with a product (or system or service) (ISO 9241-11); individual or group that interacts with a system or benefits from a system during its utilisation (ISO 25010).

User acceptance test: A test conducted to determine if the functional requirements of a specification have been met.

User-centred design: A design process in which the needs, wants and limitations of the end users of a product, service or process are considered at each stage of design.

User experience: A person’s perceptions and responses resulting from the use or anticipated use of a product, system or service (ISO 9241-210).

User group: A subset of intended users who are differentiated from other intended users by characteristics of the users, tasks or environments that could influence usability (ISO 9241-11).

User interface: All components of an interactive system that provide information and controls for the user to accomplish specific tasks with the interactive system (ISO 9241-110).

User journey map: A diagram showing the steps in a scenario in which a user interacts with a system or service.

User need: In UK government terminology, a user objective expressed in user story format.

User research: The process of uncovering user needs, goals and motivations.

User story: User stories are part of an agile approach that helps to shift the focus from writing about requirements to talking about them. All Agile user stories include a written sentence or two and, more importantly, a series of conversations about desired functionality. The most common general format is ‘As a [user role] I need/want to [do this task] so that [I can achieve this goal].’

Validated learning: A form of iterative design where the design team test design hypotheses with users.

Visual design: The practice of devising grids, laying out pages, choosing colour palettes and developing icons.

Wireframe: An image, or set of images, which displays the functional elements of a website or page, typically used for planning a site’s structure and functionality.
INTRODUCTION

This book introduces the professional discipline of user experience (UX) at a foundational level. It describes what UX professionals do, why they do it and why it works. The book is designed as a companion guide to the BCS Foundation Certificate in User Experience, and its structure is closely modelled on the certificate’s syllabus, available at: bcs.org/ux

As well as explaining the most important techniques and practices of UX, I discuss the field’s underlying principles, and we look at the ways in which UX fits in with other disciplines and project approaches.

This book is for anyone who wants to develop their understanding of user experience. People who will find this book useful might include:

- Experienced UX professionals who want to acquire the BCS Foundation Certificate in User Experience, and need a quick guide to its scope and philosophy.
- UX professionals at an early stage of their career who would value a clear and simple overview of the field.
- People at the beginning of their career who are considering UX as a career option.
- IT professionals who are currently working within a non-UX field of specialisation, such as software development, testing, business analysis or project management, and who are considering a move into UX.
- Non-IT professionals who are considering a move into UX.
- Non-UX IT professionals who are not considering a career move, but who would like to understand the field better so that they can work more effectively with UX specialists.
- Non-UX IT professionals who are not considering a career move, but who would like to extend and enrich their practice by learning about UX.

UX is a comparatively young discipline. Like other young disciplines, it is characterised by a lack of uniformity in principles, terminology and methods. To some extent this is a positive sign of a lively and diverse professional community that is constantly developing and reflecting on its practice. Sometimes, however, there is a risk that inexperienced readers will find themselves misled or confused by material on the web or elsewhere that repeats misconceptions and fallacies about UX, or which overstates partisan positions on certain issues. This book aims to provide readers with a solid base for the development of their knowledge about the field. In cases where there is
doubt or disagreement, the book relies on the following sources, in order of decreasing importance:

2. The concepts and terminology incorporated in the syllabus for the BCS Foundation Certificate in User Experience and in its associated exam questions.
3. Generally accepted good practice in the professional UX community.
4. The author’s own experience and opinions.

THE BCS FOUNDATION CERTIFICATE IN USER EXPERIENCE

In 2015, BCS, The Chartered Institute for IT, introduced a Foundation Certificate in User Experience.

The syllabus for the exam is available on the BCS website. It is organised into the following sections, with learning objectives for each:

1. Guiding principles
2. User research
3. Illustrating the context of use
4. Measuring usability
5. Information architecture
6. Interaction design
7. Visual design
8. User interface prototyping
9. Usability evaluation

The organisation of this book from Chapters 3 to 11 follows this structure exactly. Additionally, supplementary chapters (1, 2 and 12) have been included at the beginning and end to provide some orientation and further useful information, particularly with a view to the needs of the groups of prospective readers mentioned above. For readers who are thinking of taking the Foundation Certificate exam, it is important to realise that the supplementary chapters do not form part of the syllabus and are not ‘examinable’. There are also some sections in Chapters 3 to 11 containing non-examinable material. These are clearly marked (see the ‘Visual cues in this book’ section, below).

The Appendix provides some more information on the Foundation Certificate examination. Appendix A1 describes the K level scheme, which governs the allocation of a specified level to each learning objective.

Each chapter starts with an introductory section indicating the topics covered, followed by a table that lists the learning objectives for the chapter as defined by the syllabus.
Each learning objective is at one of three levels: Remember (the most basic), Understand or Apply (the most advanced). At the end of each examinable chapter are some sample questions, with answers and explanations.

**There’s more to UX than what’s in this book!**

Each section of the syllabus for the BCS Foundation Certificate in User Experience defines several learning objectives relating to the area in question. To maintain its focus, this book restricts itself to covering the subject matter of the given learning objectives for each area, and providing contextual information around them. In practice, the scope of each area is wider than is suggested by the learning objectives; the book therefore omits a great deal of information.

For example, the chapter on information architecture does not discuss search strategy in detail; the chapter on interaction design does not explore the range of input and output methods and devices that are currently available; and the chapter on visual design barely scratches the surface of practical graphic design. Arguably, there are some entire top-level areas that could have been added, on content design, for example.

The further reading section at the end of each chapter provides signposts to additional useful information.

**INTERNATIONAL STANDARDS**

As well as giving guidance on methods, international standards provide commonly agreed definitions of basic terms and concepts. We will use them as a reference point in this book to help us find our way through the sometimes conflicting or unclear terminology used by different practitioners.

**ISO 9241**

The most important standard in the field of user experience is ISO 9241, whose overall title is, at the time of writing, ‘Ergonomics of human-system interaction’. This is in fact a family of interrelated documents, each of which evolves over time. Many of them have been given new numbers in recent years, or will soon be given new numbers.

The two parts of ISO 9241 most relevant to this book are ISO 9241-210 (2019), ‘Human-Centred Design for Interactive Systems’, which sets out the principles and process described in Chapter 3, and ISO 9241-11 (2018), ‘Usability: definitions and concepts’, which contains operational definitions of usability and its components. We will also refer to several other standards from the International Organization for Standardization (ISO) and other bodies in passing.
VISUAL CUES IN THIS BOOK

Terms defined in the Glossary

Where a word other than a heading or subheading is printed as **bold text** in this book, this means that the term is defined in the Glossary.

Boxes

On many pages you will see ‘box-outs’, shaded areas with an icon in the margin. The intention of the box-outs is to draw your attention to particularly important points. The icons are used as follows:

**Golden Rule**
An important UX rule or principle that you need to know in order to achieve the BCS Foundation Certificate in UX.

**Definition**
A definition that you need to know in order to achieve the BCS Foundation Certificate in UX. The definitions are all contained in the Glossary, but some of the most important are repeated in the main body of the book.

**Bright Idea**
A particularly noteworthy practical tip.

**Danger**
This alerts you to a possible misconception that could cause confusion. These are often to do with potentially misleading use of terminology. Special attention is paid to ‘false friends’ – terms that may be familiar to readers from other contexts, but which are used in a different sense in UX.

**Remember**
Something you need to pay attention to in order to get the best out of the book.

**Extra information**
Information that you do not need to know in order to achieve the BCS Foundation Certificate in UX. This material supplements the syllabus but does not form part of it.

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USER EXPERIENCE FOUNDATIONS

Nick de Voil

User experience (UX) is about how interaction with a product, service or system is perceived by its users. Are their needs met or exceeded? Do they enjoy the experience? Will they return? Making UX central to development of a product, service or system enhances customer satisfaction, resulting in higher conversion rates and a stronger brand presence. Applying the same techniques to internal business systems brings improved efficiency and job satisfaction.

This book provides a reasoned and authoritative description of what UX is, why it works and what tools and techniques are involved, in line with the BCS Foundation Certificate in User Experience, based on ISO 9241-210.

- Understand what user experience (UX) design and research are and why UX works.
- Explore the principles, tools and techniques of UX.
- Discover how UX fits in with software development, business analysis and software testing.
- Learn about the BCS Foundation Certificate in User Experience and try out sample questions.

ABOUT THE AUTHOR
Nick de Voil has been helping organisations to design and evaluate digital products, services and systems for over 30 years. He developed the world’s first training course in User Experience for business analysts and now specialises in helping organisations to optimise customer experience by designing business processes ‘from the outside in’.

Nick de Voil has done a great job condensing the vast subject of UX into this book for those new to the field, current practitioners and experts alike.

Paul Wilshaw, Head of UX and UI, Blue Prism Ltd

This book gives all the steps needed to ensure products and services are useful, usable and actually used.

Kate Tarling, Director of Digital, Design & Research, Services Work

I highly recommended this book as a pragmatic, easy to read introduction to the fascinating but often misunderstood field of UX.

Chris Rourke, Founder and CEO, User Vision

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