## **Contents**

Preface Acknowledgments Author Biography			xi xiii xv
1	Intı	1	
	1.1	Review of Basic Photographic Concepts	2
	1.2	Stops of Light and Light Evaluation	5
	1.3	Creating a Lasting Impression	9
	1.4	Thinking Outside of the Box	10
	1.5	Advanced Crime Scene Photography	13
	1.6	Basic Photography Concepts Review Test	14
	1.7	Photography Assignment	17
2	Pho	21	
	2.1	Cameras	21
		2.1.1 Lenses	27
		2.1.1.1 Lens Filters and Attachments	28
		2.1.2 Tripods and Other Camera Supports	30
	2.2	Identification Markers	34
	2.3	Electronic and Strobe Flashes	36
	2.4	Cable and Remote Shutter Releases	39
	2.5	Hard Cases, Soft Cases, and Backpacks	40
	2.6	Conclusion	41
	2.7	End of Chapter Questions	41
	2.8	44	
	Add	45	
3	Crime Scene Photography		
	3.1	Preparation and General Photography Tips	47
	3.2	Capturing the Impossible Shot	50
	3.3	Kodak's Top 10 Tips for Better Photographs	54
	3.4	Bracketing	69
	3.5	Overall Crime Scene Photography	70
	3.6	Panoramic View Compositions	73
	3.7	Midrange or Evidence Establishing Photography	75

viii	Contents
------	----------

	3.8	Depth of Field	75	
	3.9	Adding Artistic Flair	80	
	3.10	Close-Up Photography	82	
	3.11	Close-Focused Images Recorded at the Crime Scene	82	
	3.12	Close-Up Images Captured after Leaving the Crime Scene	87	
	3.13	Lighting Close-Focused Subjects	90	
	3.14	Conclusion	94	
	3.15	End of Chapter Questions	94	
	3.16	Photography Assignments	97	
	Addi	tional Readings	98	
4	Examination Quality Photo			
	4.1	RAW and Digital Imaging	99	
	4.2	Scales	103	
	4.3	Fingerprint Photography	106	
	4.4	Footwear and Tire Wear Impressions Photography	118	
		4.4.1 2-Dimensional Impressions	119	
		4.4.2 3-Dimensional Impressions	123	
	4.5	Painting with Light on a Macro Scale	129	
	4.6	Conclusion	136	
	4.7	End of Chapter Questions	136	
	4.8	Photography Assignments	139	
	Addi	tional Readings	139	
5	Nighttime and Low-Light Photography			
	5.1	Attributes of Light	142	
	5.2	Reciprocity Failure: Film versus Digital	155	
	5.3	Working Low-Light and Nighttime Crime Scenes	159	
	5.4	Conclusion	169	
	5.5	End of Chapter Questions	170	
	5.6	Photography Assignments	173	
	Additional Readings			
6	Flash Photography			
	6.1	Guide Numbers	178	
	6.2	Flash Operation	185	
	6.3	Built-In or Pop-Up Flashes	187	
	6.4	Off-the-Camera Electronic Flash Photography	189	
	6.5	Benefits of Flash Photography	189	
	6.6	High-Speed Flash Photography	194	
	6.7	Challenges of Flash Photography	199	
	6.8	Using Electronic Flash in a Variety of Low-Light Conditions	202	

Contents	ix

	6.9	Directionality of Light from Electronic Flashes	205			
	6.10	Conclusion	213			
	6.11	End of Chapter Questions	214			
	6.12	Photography Assignments	217			
	Addi	tional Readings	219			
7	Painting with Light					
	7.1	Types of Lighting	222			
		7.1.1 Painting with Light Using Electronic Flashes	223			
		7.1.2 Painting with Light Using Flashlights	234			
		7.1.3 Painting with Light Using ALS	243			
	7.2	Conclusion	246			
	7.3	End of Chapter Questions	247			
	7.4	Photography Assignments	250			
	Addi	tional Readings	251			
8	Bloodstain Photography					
	8.1	Complete Scene Documentation	253			
	8.2	Photography Tools and Aids Used in Bloodstain Photography				
	8.3	Laser Levels and Bloodstain Documentation				
	8.4	Quadrant Mapping of Bloodstain Evidence	261			
	8.5	Necessary Tools	262			
	8.6	Photographing Bloodstains on Difficult Surfaces	272			
	8.7	Electronic Flash and Bloodstain Evidence	275			
	8.8	Glass and Blood	276			
	8.9	Magically Disappearing Bloodstains				
	8.10	Close Focusing				
	8.11	Luminol, Bluestar®, and Other Chemiluminescent				
		Blood Reagents	283			
		8.11.1 Necessary Equipment	283			
		8.11.2 Bloodstains and Colored Substratum	290			
	8.12	Conclusion	292			
	8.13	End of Chapter Questions	293			
	8.14	Photography Assignments	295			
	Additional Readings					
9	Photography of Shooting Incidents					
	9.1	General Photographic Concepts When Documenting Shooting Scenes 9.1.1 Examination Quality Photography of				
		Gunfire Incidents	304			
	9.2	Rods, Strings, and Lasers	315			
		9.2.1 Trajectory Rods	316			

X	Contents
---	----------

		9.2.2	U		320
		9.2.3	Lasers 9.2.3.1	Daytime Laser Reconstruction	323 337
	9.3	Conclu		Day time Baser reconstruction	341
	9.4			Questions	341
	9.5			signments	344
	Addi	345			
10	Ultraviolent and Infrared Photography			347	
	10.1 Ultraviolet Light Photography				348
	10.1.1 Forgery and Document Alterations				354
				nd Other Trace Evidence	355
			_	vder Residue Blood, and Other Bodily Fluids	357 358
				and Bite Marks	360
				rint Enhancements	366
			Osseous		368
	10.2	Infrare	ed Photogi	raphy	369
			Tattoo E		375
			-	es and Document Alterations	384
				ain Documentation	385
	10.2		Gunsho	t Residue	385
		Conclu		Ou actions	386
	10.4 10.5			Questions	388 391
		tional Re		signments	391
11			C		
11	Photographing Fire Scenes			393	
	11.1	Conclu		_	403
	11.2		f Chapter (		404
	11.3	•		signments	405
	Additional Readings				406
12	Photography and the Courtroom			407	
	12.1	Testify	ing in Co	urt	414
	12.2	What (	One Can I	Expect in Court	415
	12.3		419		
	12.4				420
	12.5 End of Chapter Questions			421	
	Addi	tional Re	eadings		423
Ans	swer :	Key to	End of	Chapter Questions	425
Index			433		