



Thank you for your interest in the IPMBA EMS Cyclist Course. This document contains the following to familiarize you to the IPMBA curriculum:

**IPMBA EMS Cyclist Course Fact Sheet:** this is an overview of the various components (lectures, skills, mock scenes, etc.) which comprise the course.

**IPMBA EMS Cyclist Course Model Schedule:** this is a model schedule based on the minimum 32-hour core curriculum. It can be modified by the instructor to accommodate scheduling constraints and agency-specific concerns. It can be expanded to include additional maintenance, off-road riding, and other topics of interest. Many IPMBA Courses are 40 hours in duration, but the minimum course length is 32 hours.

**IPMBA EMS Cyclist Course Sample Required Materials & Equipment Checklist:** this provides a list of material and equipment generally required of all students enrolling in the IPMBA Police Cyclist Course.

**IPMBA Unit Plans:** this contains Unit Plans for each chapter in *The Complete Guide to Public Safety Cycling* that appears in the IPMBA EMS Cyclist Course as either a required or optional lecture. Please note that the IPMBA Course involves extensive skill practice, as indicated by the Model Schedule, but these Skill Stations do not have separate Unit Plans; rather, they are referenced within the Units of Instruction which involve skill practice.

Please visit [www.ipmba.org](http://www.ipmba.org) or contact the IPMBA office at [info@ipmba.org](mailto:info@ipmba.org) or 410-744-2400 with questions, more information, or for assistance in locating an IPMBA EMS Cyclist Course.

*IPMBA promotes the use of bikes for public safety, provides resources and networking opportunities, and offers the best, most complete training for public safety cyclists.*

## IPMBA EMS CYCLIST COURSE FACT SHEET

Course	EMS Cyclist Course
Length	32 hours excluding non-instructional time; 40 hours if optional/additional skills are added.
Intended Audience	EMS providers (BLS/ALS/paramedic), firefighters, search-and-rescue personnel, first responders
Lectures	<ul style="list-style-type: none"> <li>• Bicycles</li> <li>• Bicycle Maintenance and Repairs</li> <li>• Bicycle Response Teams</li> <li>• Clothing and Personal Protective Equipment</li> <li>• Electric Bicycles</li> <li>• EMS Equipment and Load Placement</li> <li>• EMS Scene Management and Safety</li> <li>• Hazards and Crashes</li> <li>• Low-Light Cycling</li> <li>• On-Bike Equipment</li> <li>• Vehicular Cycling</li> </ul>
Skills Practiced	<ul style="list-style-type: none"> <li>• ABC Quick Check</li> <li>• Bike Fit</li> <li>• Braking Techniques</li> <li>• Crossover Mounts</li> <li>• Crossover Dismounts</li> <li>• Curb Ascents and Descents</li> <li>• Falling Techniques</li> <li>• Helmet Fit</li> <li>• Night Ride</li> <li>• Off-Road Riding (optional)</li> <li>• Pedal Retention</li> <li>• Quick Turn</li> <li>• Rear Scan</li> <li>• Rear Tire Change</li> <li>• Road Ride</li> <li>• Rock Dodge</li> <li>• Shifting and Gear Use</li> <li>• Slow Speed and Balance</li> <li>• Stair Carries</li> <li>• Stair Climbs</li> </ul>

	<ul style="list-style-type: none"> <li>• Stair Descents</li> <li>• Starting and Stopping</li> <li>• Trackstand</li> <li>• Transitioning</li> </ul>
Mock Scenes	<ul style="list-style-type: none"> <li>• Chest Pain and Bike Positioning</li> <li>• Minor Trauma and Hostile Scene</li> <li>• Minor Trauma Logistics and Improvisation</li> </ul>
Student Equipment and Materials	<ul style="list-style-type: none"> <li>• <i>The Complete Guide to Public Safety Cycling, Third Edition</i></li> <li>• See <i>Sample Required Equipment and Materials Checklist</i></li> </ul>
Assessment Criteria	<p>To pass the class and be eligible for IPMBA certification, an individual must:</p> <ul style="list-style-type: none"> <li>• Miss no more than 10% of the class time</li> <li>• Score a minimum of 76% on the written test</li> <li>• Obtain a satisfactory rating on the on-bike tests: <ul style="list-style-type: none"> <li>• Road ride</li> <li>• Bicycle handling skills</li> </ul> </li> </ul>
IPMBA Certification	<p>IPMBA EMS Cyclist Certification is available to EMS providers/SAR personnel only.</p> <p>To obtain IPMBA certification, an individual must:</p> <ul style="list-style-type: none"> <li>• Be a member of or join IPMBA.</li> <li>• Submit the certification application and fee.</li> </ul>

# IPMBA EMS CYCLIST COURSE MODEL SCHEDULE

## DAY ONE (8 instructional hours)

Check-In	Course Registration and Equipment Inspection	15 minutes
Introduction	Welcome and Course Overview	15 minutes
Lecture	Bicycles	15 minutes
	On-Bike Equipment	15 minutes
Lecture	Clothing and Personal Protective Equipment	15 minutes
	EMS Equipment and Load Placement	30 minutes
Break		10 minutes
Lecture and Video Presentation	Fundamental Cycling Skills and Vehicular Cycling	60 minutes (including 23-minute video)
Break		10 minutes
Skill Station	Skill Station 8-1 <ul style="list-style-type: none"> <li>• Helmet Fit</li> </ul> Skill Station 4-1 <ul style="list-style-type: none"> <li>• Bike Fit</li> </ul>	30 minutes
Skill Station	Skill Station 7-1 <ul style="list-style-type: none"> <li>• ABC Quick Check</li> </ul> Skill Station 9-1 <ul style="list-style-type: none"> <li>• Starting and Stopping</li> </ul>	60 minutes
Lunch		60 minutes
Skill Station	Perform <ul style="list-style-type: none"> <li>• ABC Quick Check</li> <li>• Stretching Routine</li> </ul> Skill Station 9-2A-B (Braking Techniques) <ul style="list-style-type: none"> <li>• A: Lockdown</li> <li>• B: Planned Braking</li> </ul> Skill Station 6-1 <ul style="list-style-type: none"> <li>• Pedal Retention</li> </ul> Skill Station 9-3 <ul style="list-style-type: none"> <li>• Falling Techniques</li> </ul> Skill Station 9-4 <ul style="list-style-type: none"> <li>• Shifting and Gear Use</li> </ul> Skill Station 9-2 C (Braking Techniques) <ul style="list-style-type: none"> <li>• C: Maximum Braking</li> </ul>	90 minutes
Break		10 minutes

Skill Station	Skill Station 9-5 <ul style="list-style-type: none"> <li>• Rock Dodge</li> </ul> Skill Station 9-6 <ul style="list-style-type: none"> <li>• Quick Turn</li> </ul> Skill Station 9-7 <ul style="list-style-type: none"> <li>• Slow Speed and Balance</li> </ul>	105 minutes
Skill Station	Skill Station 11-1 <ul style="list-style-type: none"> <li>• Rear Scan</li> </ul> Skill Station 11-2 <ul style="list-style-type: none"> <li>• Transitioning</li> </ul>	45 minutes

## DAY TWO (8 instructional hours)

\*Starting on Day Two, all on-bike skills are to be performed with department-mandated carrying system and equipment, or equivalent weight if actual equipment is not available.

Lecture	Hazards and Crashes	30 minutes
Lecture	Bicycle Maintenance and Repairs	60 minutes
Break		10 minutes
Skill Station	Skill Station 7-2 <ul style="list-style-type: none"> <li>• Rear Tire Change</li> </ul>	60 minutes
Skill Station	Perform <ul style="list-style-type: none"> <li>• ABC Quick Check</li> <li>• Stretching Routine</li> </ul> Skill Station 9-7 <ul style="list-style-type: none"> <li>• Slow Speed and Balance</li> </ul>	90 minutes
Lunch		60 minutes
Skill Station (with equipment and carrying system)	Perform <ul style="list-style-type: none"> <li>• ABC Quick Check</li> <li>• Stretching Routine</li> </ul> Skill Station 9-2A–C <ul style="list-style-type: none"> <li>• Braking Techniques</li> </ul> Skill Station 9-5 <ul style="list-style-type: none"> <li>• Rock Dodge</li> </ul> Skill Station 9-6 <ul style="list-style-type: none"> <li>• Quick Turn</li> </ul> Skill Station 9-7 <ul style="list-style-type: none"> <li>• Slow Speed and Balance</li> </ul>	120 minutes
Break		10 minutes
Skill Station	Skill Station 9-8 <ul style="list-style-type: none"> <li>• Curb Ascents and Descents</li> </ul>	60 minutes
Skill Station	Skill Station 11-3 <ul style="list-style-type: none"> <li>• Road Ride</li> </ul>	60 minutes

## DAY THREE (8 instructional hours)

\*Starting on Day Two, all on-bike skills are to be performed with department-mandated carrying system and equipment, or equivalent weight if actual equipment is not available.

Lecture	EMS Scene Management and Safety	40 minutes
Lecture	Low-Light Cycling	30 minutes
Break		10 minutes
Skill Station	Perform <ul style="list-style-type: none"> <li>• ABC Quick Check</li> <li>• Stretching Routine</li> </ul> Skill Station 9-9 <ul style="list-style-type: none"> <li>• Stair Descents</li> </ul> Skill Station 9-10A–B <ul style="list-style-type: none"> <li>• A: Crossover Dismounts</li> <li>• B: Crossover Slalom</li> </ul>	90 minutes
Break		10 minutes
Skill Station	Skill Station 13-2 <ul style="list-style-type: none"> <li>• Stair Climbs</li> </ul> Skill Station 13-3 Stair Carries	80 minutes
Dinner		60 minutes
Skill Station	Skill Station 13-1 <ul style="list-style-type: none"> <li>• Trackstand</li> </ul>	60 minutes
Scenarios	Mock Scenes (Instructor's Choice) <ul style="list-style-type: none"> <li>• Chest Pain and Bike Positioning</li> <li>• Minor Trauma and the Hostile Scene</li> <li>• Minor Trauma: Logistics and Improvisation</li> </ul>	120 minutes
Break		10 minutes
Skill Station	Skill Station 12-1 <ul style="list-style-type: none"> <li>• Night Ride</li> </ul>	60 minutes

## DAY FOUR (8 instructional hours, including testing)

\*Starting on Day Two, all on-bike skills are to be performed with department-mandated carrying system and equipment, or equivalent weight if actual equipment is not available.

Lecture	Introduction to E-Bikes	30 minutes
Lecture	Introduction to BRT	30 minutes
Group Discussion	Review/Question and Answer	15 minutes
Break		10 minutes
Skill Station	Perform <ul style="list-style-type: none"> <li>• ABC Quick Check</li> <li>• Stretching Routine</li> </ul> Practice Tested Drills (as needed)	165 minutes
Lunch		60 minutes
Examination	Practical Test Part I: Vehicular Cycling Road Ride	60 minutes
Examination	Practical Test Part II: Bicycle-Handling Skills	95 minutes
Break		10 minutes
Presentation	IPMBA: An Invitation to Join	10 minutes
Examination	Written Test	60 minutes
Lecture	Evaluations, Concluding Remarks	15 minutes

# IPMBA EMS CYCLIST COURSE

## SAMPLE REQUIRED EQUIPMENT AND MATERIALS CHECKLIST

### Duty Bicycle

- ☐ Reputable manufacturer public safety bicycle in good working order, properly fitted
- ☐ Street/combo tires (26–29 x 1.5 to 26–29 x 2.1 recommended; no knobbies)
- ☐ Pedal retention (including acceptable flat pedal/footwear systems)
- ☐ At least one water bottle cages and bottle
- ☐ Hydration delivery system (recommended)
- ☐ High-intensity headlight with 4-hour run-time
- ☐ L.E.D. steady or flashing red taillight
- ☐ Rear mount kick stand
- ☐ Derailleur guard (recommended)
- ☐ Agency-mandated carrying system (e.g., rear rack with rack bag, frame pack, panniers, etc.)
- ☐ Off-road tires (recommended if the class will ride off-road; consult instructor)

### Tools

- ☐ Patch kit
- ☐ Tire levers
- ☐ Two spare tubes
- ☐ Frame-mounted tire pump or CO<sub>2</sub> inflator with cartridges
- ☐ Allen wrenches (4-/5-/6-/8-mm)
- ☐ Wrenches (8-/10-mm)
- ☐ Bicycle lube
- ☐ Shop towel
- ☐ Disposable gloves

### Safety Equipment

- ☐ Bicycle helmet (approved by ANSI, Snell, CPSC, CSA, or equivalent)
- ☐ Eye protection (wraparound, clear and tinted)
- ☐ Padded cycling gloves (highly recommended)
- ☐ Body armor protective vest (if worn on duty)

### Attire

- ☐ Full duty uniform (*worn daily*)
- ☐ Padded cycling shorts (*highly recommended*)
- ☐ Footwear compatible with pedal retention
- ☐ Foul weather gear
- ☐ Off-road cycling clothes (*recommended if the class will ride off-road; consult instructor*)

### Duty Gear

- ☐ Agency-mandated equipment and carrying system
- ☐ Basic first aid kit

### Other

- ☐ Complete Guide to Public Safety Cycling (if not provided by instructor; [www.psglearning.com](http://www.psglearning.com), 800-832-0034)
- ☐ Note-taking materials
- ☐ Insect repellent
- ☐ Sunscreen
- ☐ Hand sanitizer
- ☐ Disinfecting wipes
- ☐ Get Active Questionnaire (GAQ) (*required*) and medical clearance sheet (*if indicated by GAQ*)

Participants will be required to sign a liability release/waiver on-site.

# CHAPTER 4: BICYCLES

## UNIT PLAN

### Learning Goal

The purpose of this unit of instruction is to introduce students to the primary types of bicycles and their uses; familiarize them with bicycle parts and components; and, in the accompanying Skill Station, teach them how to adjust a bicycle to fit the rider.

### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- List several different bicycle types.
- List and describe materials used in bike frames.
- Identify the parts of a bicycle and explain their functions.
- Select appropriate components for a public safety bicycle.
- Identify the parts of the drivetrain and explain how they work together to drive the bicycle.
- List and describe the two types of brake systems.
- List the parts that comprise the wheel assembly.
- Discuss the pros and cons of front and rear suspension in the context of public safety.
- Fit a bicycle to the rider (Skill Station 4-1: *Bike Fit*).

### Method of Instruction

Lecture, discussion, demonstration, and practice

### Time Allotted

15 minutes (not including Skill Station)

### Bibliography

Brown, Sheldon and Allen, John (n.d.). *Bicycle Rim Brakes*.  
<https://www.sheldonbrown.com/rim-brakes.html>.

Cohen, David (2019). Gears & Gadgets: One, Two Three. *IPMBA News*, Vol. 28, No. 1, pages 27–28.

May, Monte (2006). How to Buy a Public Safety Mountain Bike. *IPMBA News*, Vol. 15, No. 1, pages 5–6.

## CHAPTER 5: ELECTRIC BICYCLES

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to familiarize students with electric bicycles (e-Bikes). The addition of an electric motor to a pedal-powered bicycle affects its legal status as well as its operation. This unit will introduce e-Bike types and classes and provide an overview of the advantages, disadvantages, benefits, and hazards of operating e-Bikes in the line of duty.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- Define an e-Bike per the applicable legal system (United States or Canada).
- List the three e-Bike classes defined by the U.S. model legislation.
- List the e-Bike system components and describe how they power an e-Bike.
- Identify three types of drive units (motors) and list some advantages and disadvantages of each.
- List factors to consider when selecting an e-Bike.
- List the advantages and disadvantages of e-Bike use for public safety.
- Identify potential effects on tactics and scene safety.
- Articulate the need for e-Bike training in addition to a public safety cycling course on a conventional bicycle.

#### Method of Instruction

Lecture, discussion, visual aids

#### Time Allotted

30 minutes

#### Bibliography

Bicycle Helmet Safety Institute (n.d.). E-Bike Helmets. <https://helmets.org/ebike.htm>.

BOSCH e-Bike Systems, North America (n.d.). <https://www.bosch-ebike.com>.

DiMaio, Eric, California POST-certified Bike Patrol Instructor (2017–2018). Personal communication with Clint Sandusky.

E-Bike Tuning (n.d.). <https://www.ebiketuning.com>.

Electric Mountain Bike Network (EMBN) (n.d.). YouTube shows.  
<https://www.embn.com/category/embn-show>.

ElectricBike (2012). *Torque Arms on Hub Motor Bikes*.  
<https://www.electricbike.com/torque-arm>.

ElectricBike (2015). *Waterproofing and Basic e-bike Troubleshooting*.  
<https://www.electricbike.com/water-proofing-trouble-shooting>.

IACP National Enforcement Policy Center (April 2014). *Bicycle Patrol and Model Policy*.

International Police Mountain Bike Association (May 2019). *Use of e-Bikes by Public Safety Cyclists*.

International Police Mountain Bike Association (Revision August 2020). *IPMBA e-Bike Training Module*.

People For Bikes. *E-Bike Regulations Page*. <https://www.peopleforbikes.org/electric-bikes/policies-and-laws>.

Sandusky, Clint (2019). *How to Select A Public Safety Electric Bicycle*.  
<https://ipmba.org/blog/comments/how-to-select-a-public-safety-electric-bicycle>.

Sandusky, Clint and Pearce, Erik (2019). *Electrified: An Introduction to e-Bikes for IPMBA Instructors* workshop. IPMBA Conference, Fort Worth, Texas.

The Next Web (March 25, 2021). *Buying an e-Bike? What You Should Know About Torque and Cadence Sensors*. <https://thenextweb.com/news/buying-an-ebike-you-should-know-about-torque-and-cadence-sensors>.

Toler, Ron (2021). *Electric Bike Overview*. PowerPoint Presentation for IPMBA Instructor Course.

Toll, Micah (2018). *Electric Bicycle Hub Motors vs. Mid-Drive Motors: Which should be on your next e-Bike?* Electrek. <https://electrek.co/2018/06/07/electric-bicycle-hub-motors-vs-mid-drive>.

Trek Bicycle Corporation (2016). *Ride+ Electric Bicycle Owner's Manual*, pages 3 and 161.

United States Congress (2002). 116 STAT. 2776 PUBLIC LAW 107–319—DEC. 4, 2002. <https://www.congress.gov/107/plaws/publ319/PLAW-107publ319.pdf>.

Wasko, Claudia (2018). "Is an e-Bike Right for Your Bike Patrol?" *Officer.com*.  
<https://www.officer.com/vehicles-fleet/vehicles-equipment/bicycles-accessories/press-release/20991237/electronic-bikes-bosch-ebikes-systems-increase-your-bike-patrol-effectiveness-with-an-ebike-electric-bicycle>.

## CHAPTER 6: ON-BIKE EQUIPMENT

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to introduce students to some of the on-bike equipment necessary to safely and effectively perform the duties of a public safety cyclist, and provide the justification for purchasing it.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- Explain the importance of saddle selection.
- Explain the rationale for pedal retention and demonstrate how to use it (Skill Station 6-1: *Pedal Retention*).
- Discuss the purpose of lighting, audible warning devices, and emergency lights and sirens.
- Describe the different types of equipment carrying systems.
- Explain the purpose of handlebar grips and bar ends.
- List the three types of kickstands.
- Explain the practicality of water bottle cages, bar ends, and cyclo-computers/smart devices.

#### Method of Instruction

Lecture, discussion

#### Time Allotted

15 minutes (not including Skill Station)

#### Bibliography

Bouchard, Elizabeth (2019). When it Comes to Tulips, It's Not All Roses. *IPMBA News*, Vol. 28, No. 3, pages 15–18.

Brant, William et al. (2009). Does Bicycling Contribute to Erectile Dysfunction? Examining the Evidence. *The Physician and Sportsmedicine*, Vol. 37, No. 1, pages 44–53.

Gemery, John et al. (2007). Digital Three-Dimensional Modeling of the Male Pelvis and Bicycle Seats: Impact of Rider Position and Seat Design on Potential Penile Hypoxia and Erectile Dysfunction. *BJU International*, Vol. 99, No. 1, pages 135–140.

Guess, Marsha et al. (2011). Women's bike seats: a pressing matter for competitive female cyclists. *Journal of Sexual Medicine*, Vol. 8, No. 11, pages 3144–3153.

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IPMBA Board of Directors (2019). *Board Position Paper: Use of Flat Pedals by Public Safety Cyclists – May 2019*.  
[http://ipmba.org/images/uploads/IPMBA\\_Flat\\_Pedals\\_Position\\_Statement\\_Revised\\_20190423-Approved.pdf](http://ipmba.org/images/uploads/IPMBA_Flat_Pedals_Position_Statement_Revised_20190423-Approved.pdf).

Lowe, Brian et al. (2004). Effect of Bicycle Saddle Designs on the Pressure to the Perineum of the Bicyclist. *Medicine & Science in Sports & Exercise*, Vol. 36, No. 6, pages 1055–1062.

National Institute of Occupational Safety & Health (2009).

*No-Nose Saddles for Preventing Genital Numbness and Sexual Dysfunction in Occupational Bicycling*. Workplace Solutions, April 2009.

REI. *How to Choose a Bike Seat*. <https://www.rei.com/learn/expert-advice/bike-saddles.html>.

Sanford, Thomas et al. (2018). Effect of Oscillation on Perineal Pressure in Cyclists: Implications for Micro-Trauma. *Sexual Medicine*, Vol. 6, No. 3, pages 239–247.

Schrader, Steven et al. (2000). *Health Hazard Evaluation Report: City of Long Beach Police Department, Long Beach CA, HETA 2000-0305-2848*. National Institute of Occupational Safety and Health (NIOSH), Cincinnati OH.

Schrader, Steven et al. (2008). Cutting off the Nose to Save the Penis. *Journal of Sexual Medicine*, Vol. 5, No. 8, pages 1932–1940.

Spears, Iain et al. (2003). The Effect of Saddle Design on Stresses in the Perineum during Cycling. *Medicine & Science in Sports & Exercise*, Vol. 35, No. 9, pages 1620–1625.

Wilson, James. *The Flat Pedal Revolution Manifesto*.

<http://www.bikejames.com/strength/the-flatpedal-revolution-manifesto-how-to-improve-your-riding-with-flat-pedals>.

## CHAPTER 7: BICYCLE MAINTENANCE AND REPAIRS

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to provide students with information and skills necessary to perform preventive maintenance on and make minor repairs to their duty bicycles.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- Identify and explain the two types of maintenance.
- Perform an ABC Quick Check (Skill Station 7-1: *Bike Fit*).
- Cite IPMBA's three basic rules of maintenance.
- Assemble and use a basic bicycle tool kit.
- Clean and lubricate a bicycle.
- Repair and change a flat tire (Skill Station 7-2: *Rear Tire Change*).
- Adjust cable tension.
- Check for chain elongation and remove/install a chain.
- Determine when repair by a professional/bike shop is appropriate.
- Explain the importance of regular maintenance and record-keeping to ongoing fleet management.

#### Method of Instruction

Lecture, video, demonstration, and class participation

#### Time Allotted

60 minutes (not including Skill Stations)

## Bibliography

Jones, Calvin (2019). *Big Blue Book of Bicycle Repair*, 4th edition. Park Tool Company, Saint Paul, MN.

Zinn, Lennard (2018). *Zinn and the Art of Mountain Bike Maintenance*, 6th edition. Velo Press, Boulder, CO.

Selected text by Lennard Zinn and illustrations by Todd Telander and Mike Reisel appear in *Zinn and the Art of Mountain Bike Maintenance*, 6th edition (VeloPress, 2018), and are used here with permission of the publisher.

## CHAPTER 8: CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to provide students with the information they need to select appropriate uniforms and personal protective equipment. If equipment and clothing do not meet industry standards, the safety, productivity, and performance of the public safety cyclist may be negatively impacted.

#### Learning Objectives

After completing this unit of instruction, students will be able to:

- Describe the features of bicycle-specific uniforms and explain why they should be worn.
- List mandatory and optional safety equipment, according to IPMBA standards.
- Explain the importance of each item of personal protective equipment.
- Describe and demonstrate the proper way to wear a bicycle helmet (Skill Station 8-1: *Helmet Fit*).
- Explain why external vest carriers are often preferable for public safety cyclists.

#### Method of Instruction

Lecture, discussion, and visual aids

#### Time Allotted

15 minutes (not including the Skill Station)

#### Bibliography

Beck, Kirby (2002). Bike Uniforms: We've Come a Long Way, Baby. *Law & Order Magazine*, April, pages 76–82.

Beck, Kirby (2003). Dressing for Success. *Law & Order Magazine*, May, pages 76–82.

Beck, Kirby (2005). Trends in Bike Patrol, *Law & Order Magazine*, April, pages 77–84.

Berthiaume, Judy (2018). *Blugold Research Aims to Improve Police Officers' Health and Quality of Life*. University of Wisconsin-Eau Claire, October 28.

<https://www.uwec.edu/news/news/uw-eau-claire-research-leads-to-equipment-change-for-police-officers-3294/>.

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Friese, Greg (2016). Body Armor: Is it Time for Every Medic to Wear a Ballistic Vest? *EMS1.com*. <https://www.ems1.com/body-armor/articles/body-armor-for-ems-is-it-time-for-every-medic-to-wear-a-ballistic-vest-fHnVfB7MJ90>

King, Ken (2003). Helmet Safety: Separating Fact from Fiction. *IPMBA News*, Vol. 12, No. 1, pages 15–16.

Trujillo, Mitch & Reed, Donald (2003). Bike Patrol Health & Safety: Equipment Implications for You and Your Employer. *IPMBA News*, Vol. 12, No. 3, pages 5–7.

Virginia Tech Helmet Rating System (2011). <https://www.helmet.beam.vt.edu/>.

## CHAPTER 9: FUNDAMENTAL CYCLING SKILLS

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to teach students the fundamental cycling skills necessary for performing their jobs confidently, comfortably, safely, and effectively. In this unit, students will develop proficiency with basic bicycle-handling skills through effective instruction, progression, and practice of the skill stations. Development of these skills is essential to ensure rider safety and effectiveness and is necessary for the acquisition of more advanced skills.

Mastery of basic riding skills is important because riders must have absolute confidence that they have acquired the fundamental skills before they can progress to more advanced skills. That confidence is the foundation that will enable the rider to attempt new things. Basic skills are at the core of even the most difficult and complex maneuvers.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to demonstrate proficiency in the following skills:

- 9-1: *Starting and Stopping*
- 9-2: *Braking Techniques*
- 9-3: *Falling Techniques*
- 9-4: *Shifting and Gear Use*
- 9-5: *Rock Dodge*
- 9-6: *Quick Turn*
- 9-7: *Slow Speed and Balance*
- 9-8: *Curb Ascents and Descents*
- 9-9: *Stair Descents*
- 9-10: *Crossover Dismounts*

#### Method of Instruction

Explanation, demonstration, and practice

**Instructor Note:** There are no lecture outlines or PowerPoint presentations for Chapter 9.

## Time Allotted

Varies based on class size, existing skill level, and speed at which the skills are mastered

## Bibliography

Allen, John (2019) *Bicycling Street Smarts, Cycling Savvy Edition*. American Bicycling Education Association, Orlando, FL.

Allen, John & Brown, Sheldon (n.d.). *Starting and Stopping*.  
<https://www.sheldonbrown.com/starting.html>.

IPMBA (1996). *The Complete Guide to Police Cycling*. International Police Mountain Bike Association, Baltimore, MD.

Yeager, Selene (2018). *Climb! Conquer Hills, Get Lean, and Elevate Every Ride*. Hearst Publishing, New York, NY.

## CHAPTER 10: HAZARDS AND CRASHES

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to introduce students to the cycling-related hazards that they are likely to encounter and provide strategies for recognizing and avoiding them, thus reducing the risk of crashes and injury.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- List the three types of hazards commonly encountered by cyclists.
- List at least five surface hazards.
- List at least three visual hazards.
- List at least three moving hazards.
- Define and describe the “door zone” and explain how to avoid getting “doored.”
- List the three most common motor vehicle/bicycle crashes involving adult cyclists.
- Define and describe the “moving blind spot.”
- List measures a cyclist can take to avoid being hit by a turning truck or other oversized vehicle.

#### Method of Instruction

Lecture, discussion

#### Time Allotted

30 minutes

#### Bibliography

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# CHAPTER 11: VEHICULAR CYCLING

## UNIT PLAN

### Learning Goal

The purpose of this unit of instruction is to provide students with an understanding of the rules as road as they pertain to cyclists, who operate among other users of the transportation system, including motorists, pedestrians, and other cyclists. Cyclists travel on roads alongside automobiles, motorcyclists, commercial trucks, and other cyclists; therefore, they must learn to ride in a safe, legal, and cooperative manner.

### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- Explain the rules of the road and the importance of adhering to them.
- Define vehicular cycling, cite its basic tenet, and list key principles.
- Demonstrate safe and legal vehicular cycling techniques (Skill Station 11-2: *Road Ride*).
- Explain the dangers associated with wrong-way riding.
- Demonstrate hand signals and explain why using them is important.
- Explain the lane positioning principle.
- Define “Far Right as Practicable Laws” and list exceptions to the requirement to stay right.
- Explain riding mindfully, defensively and assertively.
- Explain how and when to employ the “control and release” technique.
- Describe how cyclists should approach intersections and make turns.
- Explain how to safely merge and change lanes.
- Explain and demonstrate how to perform a rear scan (Skill Station 11-1: *Rear Scan*).
- Demonstrate partner and group riding (Skill Station 11-3: *Transitioning*).
- List different types of bicycle, pedestrian, and multi-use facilities, and explain the cyclist's responsibilities when operating on them.

### Method of Instruction

Lecture, discussion

## Time Allotted

60 minutes, including video presentation (not including Skill Stations)

## Bibliography

Allen, John (2001). *Bicycling Street Smarts*, 2nd edition. Rubel BikeMaps/Rodale Inc., Cambridge, MA.

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## CHAPTER 12: LOW-LIGHT CYCLING

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to familiarize students with the hazards of low-light cycling. The student will be exposed to techniques for reducing the risks of riding during low-light conditions, be introduced to the concepts of detection and recognition, and become familiar with basic lighting technology.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- Identify the hazards of low-light cycling.
- Explain the various techniques for increasing their ability to be detected and recognized as a cyclist.
- Explain the difference between illumination and visibility.
- Identify the differences between active and passive lighting.
- List factors to consider when selecting front and rear lights for public safety use.
- Explain the difference between detection and recognition.
- Identify techniques for creating a “signature image” to increase recognition.
- Demonstrate how to operate a bicycle safely during low-light conditions (Skill Station 12-1: *Night Ride*)

#### Method of Instruction

Lecture, demonstration

#### Time Allotted

30 minutes (not including the Skill Station)

#### Bibliography

Average Joe Cyclist (2016). *How to Choose the Best Bike Light*.

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## CHAPTER 13: CONTINUING SKILL DEVELOPMENT

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to provide students with opportunities to develop and refine their riding skills. The skills introduced in this unit build upon the skills acquired in Chapter 9, *Fundamental Cycling Skills*. These more advanced skills are equally important for the safe and effective operation of a public safety bicycle.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to demonstrate proficiency in the following skills:

- 13-1: *Trackstand*
- 13-2: *Stair Climbs*
- 13-3: *Stair Carries*
- 13-4: *Crossover Mount*
- 13-5: *Off-Road Riding* (optional)

#### Method of Instruction

Explanation, demonstration, and practice

#### Instructor Notes:

- There are no lecture outlines or PowerPoint presentations for Chapter 13.
- Remind students that it is necessary to master the basic cycling skills prior to attempting more advanced ones.
- Explain to students that most intermediate to advanced skills are simply basic skills carried to extremes or executed in rapid succession; it is necessary to master basic cycling skills before attempting more advanced ones.
- When introducing more advanced skills, advise students to walk the bicycle through the obstacle or maneuver prior to attempting to ride it.
- If students become frustrated, have them return to the basic skill, which they have already mastered, in order to enable them to build confidence.
  - Frustration results in bad decisions.
  - Do not try going faster or making extreme moves; focus on proper technique.
  - Always ride under control, even on a failed attempt.

## Time Allotted

Varies based on class size, existing skill level, and speed at which the skills are mastered

## Bibliography

Looney, Sonya (2019). *How to Get Your Mountain Bike Tire Pressure Juuuust Right*.  
<https://www.sonyalooney.com/how-to-get-your-mountain-bike-tire-pressure-juuuust-right/>.

## CHAPTER 17: BICYCLE RESPONSE TEAMS

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to provide students with an overview of how Bicycle Response Teams (BRTs) can be utilized in a wide variety of crowd situations. BRTs are effective for communicating with and monitoring crowds as well as serving as temporary barriers for containing and moving crowds in the desired direction. While typically associated with police, EMS personnel are sometimes embedded in a manner similar to tactical medics, and security personnel may also serve as BRT members.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- Define and describe a Bicycle Response Team.
- Describe crowd management basics.
- Explain the importance of professionalism and discipline.
- List the five levels of crowd demeanor.
- List situations in which Bicycle Response Teams can be deployed.
- List characteristics of Bicycle Response Team members.
- Identify the equipment necessary for deploying a Bicycle Response Team.
- Explain the necessity of mission-specific training and practice.
- Describe the IPMBA Bicycle Response Team model.
- Explain the role of EMS personnel within the Bicycle Response Team.
- List reasons bicycle officers are beneficial in crowd operations.

#### Method of Instruction

Lecture

#### Time Allotted

30 minutes

## Bibliography

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- Offer, Chris and Rainey, Bert (1998). Police Bikes Controlling Demonstrations: Keeping Things in Balance. *Blue Line Magazine*, February, pages 10–11.
- Police Executive Research Forum (2018). *Police Response to Mass Demonstrations: Promising Practices and Lessons Learned*. Pages 4, 8, 11, 26, 69, and 71.

## CHAPTER 20: EMS EQUIPMENT AND LOAD PLACEMENT

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to introduce students to EMS equipment selection for bike teams and the various methods for loading, carrying, and storing it. It will address the importance of conducting a needs assessment as well as customization based upon the deployment circumstances.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- List the factors affecting equipment selection.
- List and discuss the pros and cons of several carrying options.
- List the guidelines for load placement when using panniers.
- List the guidelines for load placement when using backpacks.
- Demonstrate the organization and care of medical equipment.
- Identify typical EMS bike team equipment.
- List the mass-casualty incident supplies that bike medics should carry and explain why.

#### Method of Instruction

Lecture and discussion

#### Time Allotted

30 minutes

## Bibliography

Cypress Creek EMS (2019). Bike Team Inventory. *CCEMS Standard Operating Guidelines*.

IPMBA (2014). Use of Backpacks by EMS Cyclists. IPMBA News, Board Position Paper, May 2014. <https://ipmba.org/blog/comments/use-of-backpacks-by-ems-cyclists-position-paper-may-2014>.

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## CHAPTER 21: SCENE MANAGEMENT AND SAFETY

### UNIT PLAN

#### Learning Goal

The purpose of this unit of instruction is to introduce students to scene safety and incident stabilization as it relates to EMS bicycle operations. They will learn the importance of assessing a medical scene upon approach, establishing and maintaining scene safety, and being prepared to protect themselves if a scene becomes hostile.

#### Learning Objectives

Upon completing this unit of instruction, students will be able to:

- Safely approach a scene while conducting a “handlebar survey.”
- Explain how to position their bicycles in order to establish scene safety and administer patient care.
- Explain the importance of leaving a clean scene.
- Employ defensive techniques if a scene becomes hostile.

#### Method of Instruction

Lecture and discussion

#### Time Allotted

40 minutes