



# Bike To Work

*A guide to safe cycling on busy roadways*

## Instructors Manual

Cycling to work offers significant challenges to both novice and experienced cyclists. This course concentrates on helping all cyclists recognise common road hazards and what to do about them.

You are a CANBIKE graduate or experienced cyclist who must, in a short duration of time, convey best practices and dispel common fears and poor practices. You must be a guide, a role model and an advocate of continued learning.

This course compliments the information found in *Bike Sense*, the British Columbia Bicycle Owners Manual. As well, this course is modelled on CANBIKE course material that was developed from John Forester's 'Effective Cycling.' Reading the Forester text and/or viewing the video of the same name will greatly enhance your knowledge and ability to convey the course material.

Leading bike courses is fun and interesting. You can ensure greater participant learning by connecting course material to previous knowledge and by giving participants time to produce or process answers. Make use of analogies, ask open-ended questions and wait patiently for responses.

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## How to use this Manual

Times at the top of the pages are approximate but try to keep on schedule. You have 2 hours in class, a half hour transition and 1.5 hours on the road.

For your benefit:

1. Underlined sentences are questions or statements you can pose to your class either orally or on display media. Use optional slides pages 20 to 28.
2. *Italicised sentences* are answers or suggested responses.
3. (Bracketed sentences) are segues to the next section of course material.

4. There are sections marked '**Note to Instructor**' to help you convey course material.

5. Make notes in the large right margin about what is working and what is not.

Things to consider:

1. Besides the material in this course, participants would benefit from an in-depth understanding of their own bikes. Encourage them to seek a guide to help familiarize them with their own bikes. Encourage participants to take a bike mechanics course, a CANBIKE course and/or ride and talk to other cyclists.
2. Add a Cycle Commuting Tips sheet to your course materials. Tips are available at [www.gonecycling.com](http://www.gonecycling.com), other cycling websites, in books and your own experiences.

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## Course Agenda

**Section I - In class exercises – 2 Hours..... 4**

1. Introductions - 20 Min ..... 4

2. The dangers facing cycle commuters - 10 Min..... 5

3. Four Types of falls - 20 Min ..... 6

4. Avoiding collisions - 30 Min ..... 9

5. Why collisions occur - 10 Min..... 11

6. 3 motorist errors - 10 Min ..... 12

7. Preventing collisions - 10 Min ..... 13

8. Reducing the severity of collisions - 10 Min ..... 15

**Section II - On Bike Exercises - 2 Hours..... 16**

Outdoor Exercises in a safe parking lot - 30 Min ..... 18

Outdoor Exercises on safe roadways - 1 Hour..... 19

**Section III – Optional Slides ..... 20-28**

Post a copy of this agenda in class  
 Advertise course contents points #2-#8  
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## Course Agenda

The Dangers facing Cycle Commuters  
 Four Types of Falls  
 Avoiding Collisions  
 Why Collisions occur  
 Three Motorist Errors  
 Preventing Collisions  
 Reducing the Severity of Collisions

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## Section I - In class exercises – 2 Hours

# 1. Introductions - 20 Min

**Note to Instructors:** Part of creating a safe atmosphere that encourages participation is getting to know everyone in the room.

Ask their names and why they are in the course.

People appreciate it when you use their name in discussions.

Introduce yourself and your experience.

Note the range of experience in the group.

Differences in opinion, interest and experiences make for great discussions and viewpoints. Do your best to summarise and restate learning points often.

Encourage participants to ask questions and to add items to the agenda and make sure you cover those items either during the session or afterwards.

**Ask for additional agenda items**

Slide p.20



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### Course Agenda

- The Dangers facing Cycle Commuters
- Four Types of Falls
- Avoiding Collisions
- Why Collisions occur
- Three Motorist Errors
- Preventing Collisions
- Reducing the Severity of Collisions

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## 2. The dangers facing cycle commuters - 10 Min

See *Bike Sense* p.28  
Dispelling rumours.

### What is the most common type of bicycle accident?

*The most common bicycle accident is falling without any cars around.*

### Where do most accidents occur?

*Most accidents occur at intersections and in residential areas.*

**(Segue: First, let's look at types of falls)**

Slide p.21



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### The Dangers Facing Cycle Commuters

Accident Types  
- Falls  
Accident Locations  
- Intersections

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## 3. Four Types of falls - 20 Min

Why they are important  
and How to prevent them.

No matter what type of incident, there are four types of falls worth understanding.

1. Stopping
2. Skidding
3. Diverting
4. Insufficient speed

Slide p.22
 <p>Bike To Work <i>A guide to safe cycling on busy roadways</i></p> <h3>Four Types of Falls</h3> <ul style="list-style-type: none"><li>Stopping</li><li>Skidding</li><li>Diverting</li><li>Insufficient speed</li></ul>
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**1. STOPPING** falls occur when you hit a blunt object. Trees, curbs, parked cars, walls, gates, bollards and getting 'doored' will all cause cyclists to fly over their handlebars.

## **How do you prevent Stopping falls?**

*To prevent stopping falls, keep your eyes on the road. Too many cyclists ride with their head down for reasons such as concentrating on pedalling, rain or sun in their eyes. Stay away from parked cars and the possibility that their doors will open. See Bike Sense p.10 and 13*

**2. SKIDDING** falls occur on sand, oil, ice, leaves, metal bridge decking, wood bridge decking or walkways, thermo-plastic lane markings. Essentially, be wary of any surface other than pavement.

## **How do you prevent Skidding falls?**

*To prevent skidding falls be aware that sand accumulates in low points on the road, often where cyclists are expected to ride. Rain makes many surfaces slippery; test your braking power before you need it. Ride as upright as possible over skidding hazards.*

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**3. DIVERTING** falls occur when the front wheel is forced onto another path. Angled railway tracks, pavement ripples, cracks or poorly laid patches, cat eye markers, other cyclists rear wheel, service covers and debris can all deflect the wheel.

## **How do you prevent Diverting falls?**

*To prevent diverting falls slow down when you recognise the hazard. Cross railway tracks perpendicular to the rail or get off and walk. Bike Sense p. 20. When changing lanes make note of the cat eye marker placement, ride slowly over poor pavement and construction areas. Ride further out from the curb to avoid debris and road drainage service covers. Don't ride through puddles if you can avoid it.*

**4. INSUFFICIENT SPEED** type falls occur when the cyclist slows faster than they are capable of preparing for. Most often associated with inability to remove a foot from a pedal system, it also occurs after braking hard or trying to start out in too tough a gear.

## **How do you prevent Insufficient Speed falls?**

*To prevent insufficient speed type falls, gear down when you slow down and unclip one foot well before coming to a stop.*

**(Segue: Now let's look at predictability in traffic and how to avoid collisions)**



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## 4. Avoiding collisions - 30 Min The 5 Traffic Principles.

**Note to Instructors:** Most people intuitively know the principles described below but haven't connected them with their cycling behaviour. For motorists who have become cyclists, an effective bridge to communicate the five principles is to pose questions that relate to their knowledge of motor traffic and connect it to cycling behaviour. "What would you do if you were driving?" and "Is that what you would do if you were driving?" are effective ways to stimulate and connect existing knowledge with new circumstances.

### The best way to handle traffic is by following the rules of the road and the Five Principles of Traffic.

- 1. Ride on the right** - this is the basis of our road system. We predict and expect all road users be on the right side of the road. When they are not on the right side we are distracted or confused until the users intent is clear.
- 2. Yield to cross traffic** – our road system is based on a hierarchy of roadways. If you are in a back lane, you yield to road users. Drivers on lesser roads (2 lane) yield to drivers on greater roads (4 lanes). Predictability on the roads means correctly assessing roadway hierarchy and who yields to whom. *Bike Sense* p.28 reminds us that 57% of collision sites had no traffic controls at all.

Slide p.23	 <b>Bike To Work</b> <i>A guide to safe cycling on busy roadways</i>  <h3>How to Avoid Collisions</h3> <p>Follow the Rules of the Road And the Five Traffic Principles</p>
Slide p.24	 <b>Bike To Work</b> <i>A guide to safe cycling on busy roadways</i>  <h3>The Five Traffic Principles</h3> <p>Ride on the Right Yield to Cross Traffic Yield to New Lane Traffic Destination Positioning Speed Positioning</p>
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## The 5 traffic principles continued.

- 3. Yield to new lane traffic** – if you want to change lanes, you must seek permission from the current lane user to do so.
- 4. Destination positioning** – place yourself in the lane, or part of the lane, that serves your destination. This position can also communicate intent to other road users. Cyclists must place themselves in the right most lane that serves their destination. *Bike Sense* p.14-15
- 5. Speed positioning** – place yourself in the lane, or part of the lane, that suits your speed. The faster you travel on bike, the more you should control the lane. Controlling the lane allows you to control traffic behind you and prevent motorists from sharing the lane at unsafe speeds. Riding further out from the right allows motorist at corners to see you sooner and prevents being ‘doored.’ *Bike Sense* p.13

**(Segue: If there is a set of traffic principles, why are Car/Bike collisions occurring?)**



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## 5. Why collisions occur - 10 Min

- Cyclists riding without due care
- Motorists is failure to yield right of way

*Bike Sense p.28*

**Car/Bike collisions occur because road users are not observing or obeying traffic principles, laws and signage.**

**The most common error attributed to cyclists is driving without due care.**

**What does this mean?**

*Ignoring laws and signage.*

**The most common error attributed to motorists is failure to yield right of way.**

**What does this mean?**

*The motorist crosses the cyclist path without permission.*

**(Segue: What are the most common motorist caused errors a cyclist should be aware of?)**

Slide p.25



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**Why do Collisions occur ?**

1. Cyclists riding without due care
2. Motorists fails to yield right of way

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## 6. 3 motorist errors - 10 Min

*Bike Sense p.28*

**The three most common errors motorists make are:**

- **An oncoming driver turns left in front of the cyclist**
- **A driver on a cross street stops and then pulls out directly in front of the cyclist**
- **A driver barely passes the cyclist and then turns right**

**(Segue: What can a cyclist do to reduce the likelihood of a collision?)**

Slide p.26



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### Three Motorist Errors

- Motorist turns left
- Motorist restarts
- Motorist turns right

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## 7. Preventing collisions - 10 Min

What are some ways we can prevent the three most common motorist caused errors?

**Note to Instructors:** Ask the above question and brainstorm with the group. Display their suggestion on flipcharts or whiteboard etc.

*Here are some ways you can prevent collision.*

*Observe all traffic laws and principles*

*Learn from your mistakes, stay alert and develop good road sense*

*Be visible- wear bright colours and use lights and reflectors*

*Ride safely- in the best place for you on the road*

*Ride predictably – don't swerve in and out of traffic or parked cars*

*Shoulder check constantly so you always know where traffic is around you*

Slide p.27



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What can we do to  
Prevent Collisions ?

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**Note to Instructors:** This is an excellent time to have everyone open Bike Sense and reinforce the information already discussed. You may wish to read aloud the bolded headings, or contents of the orange bars, to connect the contents of the book with suggestions made by participants in the previous section.

- p.8 - Position yourself where motorists are looking*
  - Do not pass on the right*
- p.9 - Turn on your lights*
  - Consider increasing the strength of your lights*
  - Wear brightly coloured clothing*
  - Put reflective material on your bicycle and clothing*
  - Be aware of limits to your visibility*
- p.10 - Cycling in a straight line*
- p.12 - Think and plan your next 30 seconds*
- p.13 - How far to the right should you ride*
  - Road surface hazards*
  - Parked cars*
- p.15 - (note the diagram and lane positions)*
- p.16 - (note diagrams and lane positions)*

**(Segue: If all else fails, how can cyclists reduce the severity of collisions?)**



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## 8. Reducing the severity of collisions - 10 Min


### What can cyclists do to reduce the severity of collisions?

*The most effective way to reduce the severity of a collision is to reduce speed.*

*Wear a well-fitted helmet and check it before every ride. Bike Sense p.5*

*Wear gloves, safety glasses and consider foot retention on pedals.*

*Make sure your bike is always in excellent condition, especially brakes and tires.*

Slide p.28
 <p>Bike To Work <small>A guide to safe cycling on busy roadways</small></p> <p>What can we do to Reduce the Severity of Collisions ?</p>
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## Section II - On Bike Exercises - 2 Hours

0.5 Hours transition time for a break and first objective below

1.5 Hours outdoor exercises

### Objectives

- Mechanical check, Helmet Check, Hand Signals review  
    Helmet fit *Bike Sense* p. 5  
    Hand signals. *Bike Sense* p. 11  
    Mechanical check. See Equipment *Bike Sense* p. 4-5  
    If time permitting, also discuss seat height, tires, chains
- Outdoor exercises in parking lot will build skills
- Outdoor exercise on safe streets will build success

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## **Note to Instructors:**

- The objective of the mechanical check, helmet check, hand signals review is to create an awareness of other aspects needed for successful bike commuting and to draw further attention to *Bike Sense* as a resource manual.
- The objective of the outdoor exercises in the parking lot is to build the skills of participants who lack them AND reinforce good practice and technique of those participants who already have good skills.
- Create environments where it is OK to help the people who need the most help while already skilled cyclists can do something meaningful. Use expertise in the group.



The objective of the outdoor exercises on safe streets is to build confidence. Start easy and build in complexity but continue to offer alternatives for those participants who are not used to traffic.

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<b>Outdoor Exercises in a safe parking lot - 30 Min</b>		
<b>Name of Exercise</b>	<b>Objective</b>	<b>Procedure</b>
Straight line riding	Determine if all participants are capable of riding a straight line while performing hand signals and shoulder checks.	Have participants ride a straight line and demonstrate their knowledge and ability to ride one handed while demonstrating hand signals and shoulder checks.
Low body position	Demonstrate low body position needed for straight line hard braking.	Have participants ride a straight line and coast, level their feet, push their weight back over the rear wheel keeping the body low.
Rear braking	Demonstrate and practice rear braking and determine the limits of its usefulness.	Have participants ride up to a line on pavement, level their feet push their weight back over the rear wheel keeping the body low and apply rear brake only. Mark on pavement where participant stops. No skidding.
Straight line hard braking	Encourage understanding of brakes, body position during hard braking, types of skidding and need for well-adjusted brakes.	Warn participants about the hazards of front brake only braking. Demonstrate relation between weight moving forward off rear wheel and potential for resultant rear wheel skid (because lack of weight). Have participants ride up to a line on pavement, level their feet push their weight back over the rear wheel keeping the body low and apply both brakes. Mark on pavement where participant stops. No skidding. Compare to marking for rear only braking.
 <p><b>Both brakes</b></p>		 <p><b>Rear brake only</b></p>
<b>Stopping distances</b>		



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Name of Exercise	Objective	Procedure
Figure 8	Develop awareness of up position for tight turns and demonstrate slow speed skills. Learning to keep the inside leg up during a turn will help reduce crashes when turning quickly.	Have participants find a section of parking lot in which to perform Figure 8's. Participants are asked to keep the leg, on the inside of the turn, up. Slowing the figure 8 helps develop slow speed skills needed to avoid Insufficient Speed turns falls.

## Outdoor Exercises on safe roadways - 1 Hour

Name of Exercise	Objective	Procedure
Getting used to surrounding area  <b>Time remaining: 55 minutes</b>	To familiarise participants with patterns of traffic in the vicinity to guarantee them comfort and success when they must do it alone. Demonstrate how far to ride from edge of roadway and how far to ride from parked cars. Wherever possible demonstrate best practices for dealing with special local hazards.	Find a series of safe roadways of increasing difficulty. Lead participants through the roadways to demonstrate and model behaviour. Stop and discuss situations as they develop. If there are particularly difficult local hazards, pull over to a safe location to observe the traffic pattern. Discuss cycling scenarios for all levels of riders. Demonstrate scenarios and discuss.
	Demonstrate road positions for speed and destination positioning.	Find a series of safe roadway intersections to demonstrate speed and destination positioning for left turns, right turns and straight through.
Review <b>Time remaining: 5 minutes</b>	Review major points of outdoor activities  Review major points of indoor session	Recall or request the learning objectives of straight-line riding, low body position, braking and skidding. Collisions, Traffic Principles, Motorist errors



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# Course Agenda

## The Dangers facing Cycle Commuters

### Four Types of Falls

### Avoiding Collisions

### Why Collisions occur

### Three Motorist Errors

### Preventing Collisions

### Reducing the Severity of Collisions



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# The Dangers Facing Cycle Commuters

## Accident Types - *Falls* Accident Locations - *Intersections*



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## Four Types of Falls

- Stopping
- Skidding
- Diverting
- Insufficient speed



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# How to Avoid Collisions

## Follow the Rules of the Road

## And the Five Traffic Principles



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# The Five Traffic Principles

**Ride on the Right**  
**Yield to Cross Traffic**  
**Yield to New Lane Traffic**  
**Destination Positioning**  
**Speed Positioning**



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## Why do Collisions occur ?

1. Cyclists riding without due care
2. Motorists fails to yield right of way



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## Three Motorist Errors

Motorist turns left

Motorist restarts

Motorist turns right



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# What can we do to Prevent Collisions ?



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# What can we do to Reduce the Severity of Collisions ?