



Human Factors in Traffic Crashes

*Instruction by Jeffrey
Muttart, Ph.D*

CRASH Safety Solutions LLC

ACTAR CEUs (40)

Monday, Sept. 9 – Friday, Sept. 13, 2024

Ottawa Police Service

Nepean Sports Plex – Richmond Room

1701 Woodroffe Ave. Ottawa, ON

Course Cost: \$1000.00 cdn (includes HST)



Advanced Human Factors in Traffic Crashes and Analysis of Drivers' Responses

In many crash reconstruction cases, the key questions to be answered involve some aspect of human behavior: reaction times (and delays), perception, visibility, impairment and so on. Advanced Analysis of Driver's Responses focuses on obtaining a better understanding of what needs to be done to assess the human role in the crash sequence.

Course Content

Perception-Response Time (Monday and Wednesday)

- When does it start
- When does it end
- How does it change due to methodology?
- How does it change due to environment?
- History of reaction time research
- Different approaches necessary for rear-end responses, path intrusions, and sideswipes.
- Influence of distraction, alcohol, hours of service, drug use, etc...
- Influence of age
- PRT Rules of thumb

Response to Slow moving or Stopped Vehicles on Multilane High Speed Roads (Friday)

- Looming effect - how each study measured different things and must be applied differently
- Recognition of closing (getting closer) from separating (falling behind) versus Recognition of Closing Speed

- Eye glances before a lane change

Nighttime recognition (Wednesday and Thursday)

- Influence of age
- When does an object enter the headlight beam
- Which headlight beam? (1, lux, 3 lux, or 20 lux)?
- Influence due to glare
- Influence due to tinting and dirtiness
- Influence due to weather (rain, snow, fog)
- Illumination during dawn and dusk
- Retroreflective materials on recognition
 - Pattern, Class 1, Class 2, and Class 3 vests and how each have performed
 - Bicycle pattern recognition and limitations

Drivers' decision making (Friday)

- Steering, braking, or horn use? When do drivers do each?
- What factors influence the choice to steer, brake or use the horn?
- Influence of age
- Influence of distraction

Research in IDRR (Tuesday)

- Speed choice (speed reduction) due to:

- Weather
- Sun glare
- Emergency vehicle presence
- Curves
- Hills
- Flashing lights
- Crosswalks
- Roadside vehicles, objects, or pedestrians
- Intersections
- Retro-reflective
- Lighting (lack of)

- Gap acceptance for left turns, right turns, and through movements for drivers, riders, and pedestrians

- Pedestrian walking speeds

Due to weather, crosswalks, signal violations, spatial violations (jap-walking), age, weight, height, when carrying luggage, walking a dog, when with others, etc...

- Acceleration

- Lateral acceleration (swerving) of cars, motorcycles, and commercial vehicles

- Time to swerve (emergency steer)
- Lateral g that drivers are willing to attempt
- How lateral acceleration changes throughout the steering emergency event
- Time to change lanes (routine steering)

- Forward and backward acceleration of cars, motorcycles and commercial vehicles

- Probability that a driver will attain a speed in a distance
- Acceleration choice at intersections, signals, stop signs, and when pulling out of fast food restaurants
- Acceleration choice when backing out of a parking space versus when backing farther or faster.

- Drivers' responses to green and yellow traffic signals



- Deceleration choice, reaction time and probability of stopping

Upon successful completion, each student receives licenses of "Interactive Driver Response Research" "RESPONSE" from Driver Research Institute, which provides each attendee with a license (personal use license) to use the following:

- RESPONSE (on line based human factors-based time/distance program) for one (1) month

About the Instructor

The course is taught by nationally recognized subject matter expert Dr. Jeffrey Muttart. He began his career in crash investigation and reconstruction as a police officer in Connecticut and then went on to obtain a Master's Degree in Experimental Psychology from University of Hartford and a Ph.D. in Industrial Engineering and Operations Research from the University of Massachusetts along with many accreditations and society memberships. For the past 20+ years, he has collected and conducted scientific research to determine the causes of motor vehicle crashes, specifically from the perspective of human factors. He has authored more than 50 technical book chapters and scientific studies on traffic safety topics. He is a recognized peer reviewer for the most prestigious scientific journals in the field of traffic safety and human factors and has been a sought-out speaker by safety transportation professionals throughout the world on more than 150 occasions.

	Human Factors Course Monday Spet. 9 – Friday Sept. 13, 2024 Hosted by the Ottawa Police Service	
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CLASS LOCATION & TIME

Course will be held at the Nepean Sportsplex, 1701 Woodroffe Ave. Ottawa, ON, K2G1W2, "Richmond Room" (rear of building, entrance 4) – see map below.

Classes will commence at 8:00 am – 4:00 pm

MEALS AND ACCOMMODATIONS

Candidates will be responsible for their meals and accommodations. Candidates are permitted to bring food and drink into the classroom. Restaurants are located nearby

Nearby Hotels:

Sandman Signature Ottawa Airport (3.1km)

<https://www.sandmanhotels.com/locations/ontario/ottawa/hotels/signature-ottawa-airport-zyow>

Holiday Inn Express & Suites Ottawa Airport (6.3km)

<https://www.ihg.com/holidayinnexpress/hotels/us/en/ottawa/yowuh/hoteldetail>

Holiday Inn & Suites Ottawa West (9.1km)

<https://www.hilton.com/en/hotels/yowowhx-hampton-ottawa-west>

DRESS CODE

The dress code for the course is business casual.

COURSE INFORMATION

See attached brochure.

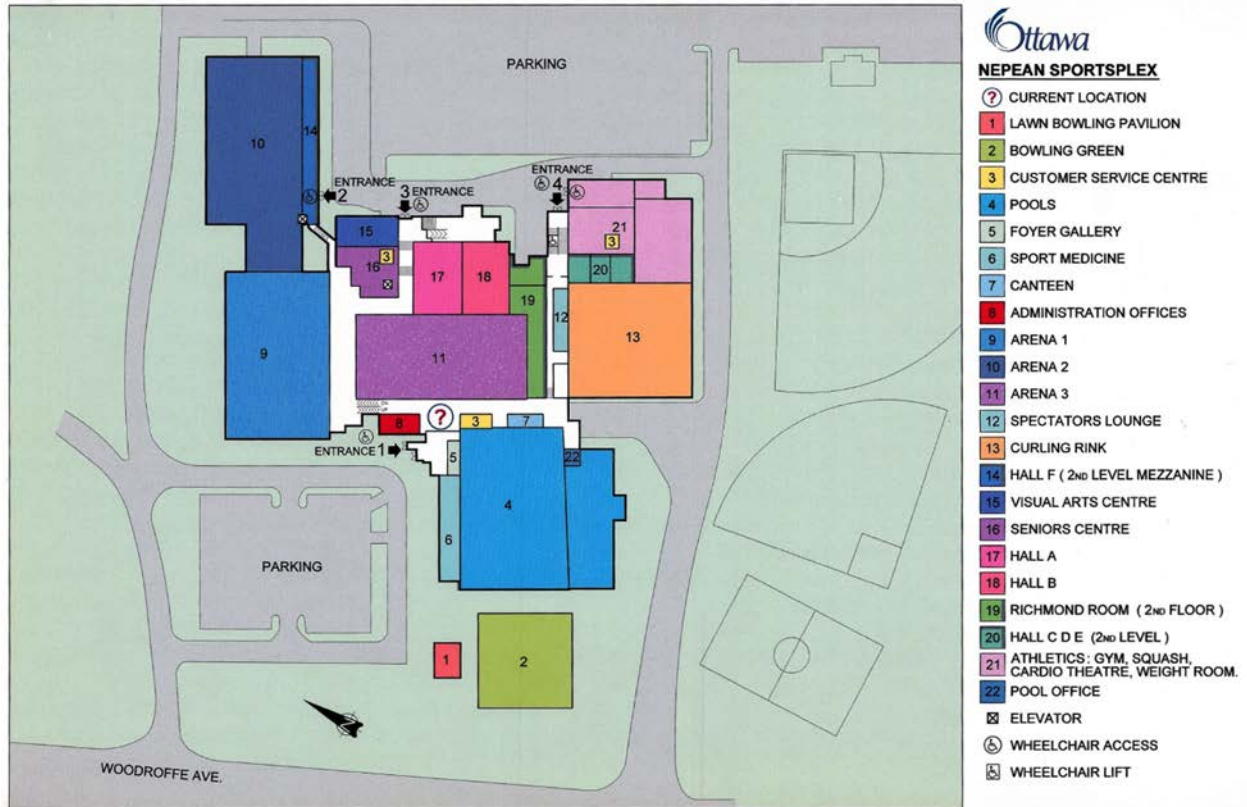
COVID-19 INSTRUCTIONS

Candidate Instruction

- Candidates must not attend the course if they are experiencing any flu-like symptoms or have been in contact with anyone being tested, self-isolating or recently returning from any other country

NEPEAN SPORTSPLEX

When attending the Nepean Sportsplex, exit off Woodroffe Avenue (south of West Hunt Club Road). Park at the rear of the building. Enter through entrance 4 as indicated by the yellow arrow.





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APPLICATION FORM

Fully completed application must be received prior to course commencement.

Human factors Course

COURSE NAME

COURSE DATE

Monday Sept 9 – Friday 13, 2024

COURSE LOCATION

OPS- Professional Development Centre – 1701 Woodroffe, Ottawa

Ontario K2G 1V8

Surname:

First Name:

Rank:

Badge number:

Current Employer:

Contact numbers:

E-Mail:

Billing address:

Fee: \$1000.00 plus HST

Please complete application form and return to: Proulx-CamireJ@ottawapolice.ca



Sgt. Mike Herasimenko BSc. Kin, CEP

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Collision Investigation Unit
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