

LOCALLY DEVELOPED COURSE OUTLINE

Forensic Studies (2021)35-5

Submitted By:

The Chinook's Edge School Division

Submitted On:

Jun. 30, 2021

Course Basic Information

<u>Outline Number</u>	<u>Hours</u>	<u>Start Date</u>	<u>End Date</u>	<u>Development Type</u>	<u>Proposal Type</u>	<u>Grades</u>
35-5	125.00	09/01/2021	08/31/2025	Acquired	Authorization	G12

Course Description

In Forensic Studies 35 (5-credit), students will investigate and evaluate the processes involved in the collection and preservation of crime scene evidence. This course allows students to study scientific concepts, technologies, and methods relating to the investigation of crimes leading to solving active cases and cold cases, and overturning wrongful convictions. As students delve into forensic studies, they will investigate and analyze the strengths and limitations of forensic evidence analysis. This course encourages an engaging and interdisciplinary approach to learning.

Forensic Studies (2021) Course Sequences:

Sequence 1:

- Forensic Studies (2021) 25-3 developed by The Edmonton School Division, prerequisite(s): Science 10 or 14

- Forensic Studies (2021) 35-5 developed by The Pembina Hills School Division, prerequisite: Forensic Studies (2021) 25-3

OR

Sequence 2:

- Forensic Studies (2021) 25-3 developed by The Edmonton School Division, prerequisite(s): Science 10 or 14

- Forensic Studies (2021) 35-3 developed by The Edmonton School Division, prerequisite: Forensic Studies (2021) 25-3

Students may not earn credits in both versions of Forensic Studies 35-3 (3credits) and Forensic Studies 35-5 (5 credits).

Note: Front matter is different between Forensic Studies 25-35 (3-credits) and Forensic Studies 35 (5 credits).

Course Prerequisites

Sequence 1:

- Forensic Studies (2021) 25-3 developed by The Edmonton School Division, prerequisite(s): Science 10 or 14

- Forensic Studies (2021) 35-5 developed by The Pembina Hills School Division, prerequisite: Forensic Studies (2021) 25-3

OR

Sequence 2:

- Forensic Studies (2021) 25-3 developed by The Edmonton School Division, prerequisite(s): Science 10 or 14

- Forensic Studies (2021) 35-3 developed by The Edmonton School Division, prerequisite: Forensic Studies (2021) 25-3

Sequence Introduction (formerly: Philosophy)

Forensic Studies 35 (5-credit) offers students an opportunity to study scientific principles and techniques in a highly engaging manner. Learning in this course will begin by students acquiring basic scientific knowledge applicable to forensic science. These scientific principles will then be applied and authenticated by discussing realistic scenarios and by engaging in concrete learning activities. Students will use reasoned approaches to analyze forensic evidence and to examine the ethical considerations surrounding the collection and application of forensic evidence. This course supports many of the elements of the Ministerial Order on Student Learning. In particular, through the investigation of forensic case studies, students develop science process skills and other key competencies, such as critical thinking and managing information. Forensic Studies 35 also fosters problem solving, discovery through inquiry, and collaboration. Forensic Studies 35 draws on a students' existing curricular knowledge and challenges them to look at problems in a new way, thereby creating unique pathways of thought. Through the study of forensics, students will recognize the importance of having both an open mind and the intellectual flexibility to change their opinions and positions when necessitated by evidence.

Student Need (formerly: Rationale)

Forensic Studies 35 (5-credit) will allow students to learn more about this unique and growing field of scientific research. It provides students with a broadened perspective of the field by exposing them to a variety of different types of forensic investigative techniques. It is intended to be accessible to both science-minded and creative-thinking students who would like to apply scientific principles in real-world settings. Forensic Studies 35 (5-credit) presents students with an opportunity to take an elective course that is of interest to them, while also developing a realistic understanding of forensic evidence-gathering techniques and the ethical complexities that confront experts who use forensic evidence. Through the exploration of possible career pathways in forensics, students in Forensic Studies 35 will develop an accurate and realistic picture of the rigour of the discipline of forensics.

Scope and Sequence (formerly: Learner Outcomes)

Essential Understanding 1: Logical procedures and breaking problems into smaller or simpler parts enables us to draw inferences, make predictions, or form conclusions that are reliable and credible.

Essential Understanding 2: Effective collaborative practices and clear organization and presentation of information result in successful and effectual societal processes.

Essential Understanding 3: Choices and actions are affected by cultural or political context and impact the dignity and well-being of individuals or communities.

Guiding Questions (formerly: General Outcomes)

- 1 How can techniques and processes be effectively applied to forensic evidence at crime scenes?**
- 2 How can analytical techniques be effectively applied to forensic evidence?**
- 3 How can techniques and processes be effectively applied to forensic evidence during an autopsy?**
- 4 How can analytical techniques be effectively applied to forensic evidence that has been collected from a secondary crime scene?**
- 5 How can canine forensics be used in an investigation?**

- 6 How can techniques and processes be effectively applied to digital forensic evidence?**
- 7 How can criminal profiling and geographic profiling aid in criminal investigations?**
- 8 How can forensic evidence be used to reconstruct a crime?**

- 9 How can individuals use forensic countermeasures to hinder investigations?**
- 10 With advancements with science and technology, what are some of the emerging technologies that may be used in future forensic analyses?**
- 11 How can forensic evidence be used to persuade outcomes in legal proceedings?**
- 12 Why is it important to consider a variety of perspectives on ethical issues in the field of forensics?**
- 13 How can a field of study evolve over time?**

- 14 How can I expand my knowledge of career opportunities in the field of forensics?**

Learning Outcomes (formerly: Specific Outcomes)

1 How can techniques and processes be effectively applied to forensic evidence at crime scenes?	35-5
1.1 Students apply techniques and processes used to secure, document, and preserve a variety of crime scenes	X
1.2 Students recall techniques and processes used to locate and collect forensic evidence found at a variety of crime scenes	X
1.3 Students apply techniques and processes used to locate and collect forensic evidence found at a variety of crime scenes	X

2 How can analytical techniques be effectively applied to forensic evidence?	35-5
2.1 Recall the type of evidence that can be collected at a crime scene	X
2.2 Students apply a variety of analysis techniques to forensic evidence	X
2.3 Students describe testable inferences (hypotheses) about a crime by applying a variety of forensic analysis techniques	X
2.4 Students compare the effectiveness of a variety of analytical methods used to process forensic evidence	X

3 How can techniques and processes be effectively applied to forensic evidence during an autopsy?	35-5
3.1 Students examine a variety of techniques used to analyze the different types of forensic evidence that is gathered during an autopsy	X
3.2 Students apply a variety of analysis techniques used during an autopsy to predict cause of death	X
3.3 Students apply a variety of analysis techniques used during an autopsy to determine time of death	X

4 How can analytical techniques be effectively applied to forensic evidence that has been collected from a secondary crime scene?	35-5
4.1 Students will differentiate between a primary crime scene and a secondary crime scene	X
4.2 Students will identify and apply forensic evidence that is collected at a secondary crime scene to help identify the location of the primary crime scene	X

5 How can canine forensics be used in an investigation?	35-5
5.1 Students examine techniques and processes used by canine forensics at a variety of crime scenes	X

6 How can techniques and processes be effectively applied to digital forensic evidence?	35-5
6.1 Students examine and apply a variety of techniques used to analyze different types of digital forensic evidence	X
6.2 Students investigate the right to privacy regarding digital materials	X

7 How can criminal profiling and geographic profiling aid in criminal investigations?	35-5
7.1 Students examine and explain the value that criminal profiling and geographic profiling serves in criminal investigations	X

8 How can forensic evidence be used to reconstruct a crime?	35-5
8.1 Students examine relevant forensic evidence and apply a variety of analysis techniques to reconstruct a crime	X

9 How can individuals use forensic countermeasures to hinder investigations?	35-5

9.1 Students critically analyze a variety of scenarios to determine what measures an individual could take to hinder a forensic investigation	X
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10 With advancements with science and technology, what are some of the emerging technologies that may be used in future forensic analyses?	35-5
10.1 Students will research emerging forensic techniques	X

11 How can forensic evidence be used to persuade outcomes in legal proceedings?	35-5
11.1 Students evaluate how forensic evidence is used effectively in legal proceedings	X
11.2 Students explain the role of forensic evidence in solving active cases, cold cases, and in overturning wrongful convictions	X
11.3 Students investigate the reliability of various forensic techniques	X

12 Why is it important to consider a variety of perspectives on ethical issues in the field of forensics?	35-5
12.1 Students discuss ethical considerations in the analysis of forensic evidence	X
12.2 Students discuss a variety of perspectives regarding the ethics of using biometrics and other investigative techniques	X

13 How can a field of study evolve over time?	35-5
13.1 Students describe the evolution of the field of forensic science	X

14 How can I expand my knowledge of career opportunities in the field of forensics?	35-5
14.1 Students research a career of their choice in the field of forensics that would allow them to participate in a crime scene	X

14.2 Students research a career of their choice in the field of forensics that would allow them to participate in an autopsy	X
14.3 Students research a career of their choice in the field of forensics that would allow them to participate in a digital forensic investigation	X

Facilities or Equipment

Facility

No specific facilities required

Facilities:

Equipment

No specific equipment required

Learning and Teaching Resources

No specific resources required

Sensitive or Controversial Content

Issues of a sensitive or controversial nature may be encountered or explored in this course. Teachers are advised to use their discretion and take the needs of individual students and the local community context into consideration when addressing sensitive or controversial topics or issues.

Issue Management Strategy

Health and Safety

Issues of a sensitive or controversial nature may be encountered or explored in this course. Teachers are advised to use their discretion and take the needs of individual students and the local community context into consideration when addressing sensitive or controversial topics or issues.

Risk Management Strategy

Statement of Overlap with Existing Programs

Provincial Course with Overlap and/or Similarity: Science 6

Identified Overlap/Similarity: Topic D: Evidence and Investigation of Science 6 --General Learner Expectations 6-8 and 6-9 require students to recognize that evidence found at the scene of an activity may have unique characteristics, and they will potentially investigate evidence such as footprints, ink, handwriting, fabric, and fingerprints. This may be seen as overlap with outcomes 1.1, 1.2, 1.3, and 2.2 of Forensic Studies 35.

Reasoning as to Why LDC is Necessary: Elementary students are looking at evidence from simple scenes of human activity, while high school students in Forensic Studies 35 are examining and analyzing evidence found at crime scenes and considering the ethical use of the evidence gathered.

Provincial Course with Overlap and/or Similarity: Science 24

Identified Overlap/Similarity: In Unit C: Disease Defence and Human Health (Science, Technology and Knowledge) Outcome 4 mentions examination of DNA. DNA would be covered in some way in Forensic Studies 35.

Reasoning as to Why LDC is Necessary: None of the Science 24 course is focused on using forensics to examine crime scenes; therefore, Forensic Studies 35 takes an approach that is not covered in Science 24. Forensic Studies 35 focuses on the analysis and comparison of DNA, not on the structure of DNA as is covered in Science 24

Provincial Course with Overlap and/or Similarity: Biology 30

Identified Overlap/Similarity: In Biology 30, there is a genetics/DNA unit, and DNA would certainly come up in Forensic Studies 35.

Reasoning as to Why LDC is Necessary: The DNA discussion in Biology 30 is a study of the structure and replication of DNA and is not focused on its application for solving crimes, whereas that is the cornerstone of Forensic Studies 35.

Provincial Course with Overlap and/or Similarity: Science 30

Identified Overlap/Similarity: In Science 30, there is an examination of DNA, and DNA certainly come up in Forensic Studies 35

Reasoning as to Why LDC is Necessary: The DNA discussion in Science 30 is a study of the structure and replication of DNA and is not focused on its application for solving crimes, while that is the cornerstone of Forensic Studies 35.

Provincial Course with Overlap and/or Similarity: LGS1020, Public Law

Identified Overlap/Similarity: In LGS1020, there is an examination of the laws that protect rights and responsibilities (1.2). Because the ethical use of forensic evidence is discussed in Forensic Studies 35, some discussion of legislation would ensue. As well, in LGS1020, there is the description of the criminal process, which may tangentially be focused on as criminal

cases are examined in Forensic Studies 35.

Reasoning as to Why LDC is Necessary: The intention of LGS1020 Public Law is to explore the relationship between the government and the citizen, which is not the intention of Forensic Studies 35. Forensic Studies 35 aims to hone students' critical thinking through the examination of forensic evidence.

Provincial Course with Overlap and/or Similarity: LGS3080 Criminal Law

Identified Overlap/Similarity: Some minor overlap was identified. In LGS3080 (3.7.9), students examine the criminal process and, as part of this, look at some issues related to evidence. The examples are given as "hearsay, prior bad acts". In Forensic Studies 35, students examine forensic evidence that could be used in criminal cases.

Reasoning as to Why LDC is Necessary: Forensic Studies 35 examines the science of forensics and the ethics surrounding the use of evidence, which is not the focus of LGS3080 Criminal Law.

Locally Developed Courses with Overlap and/or Similarity: Forensic Studies 25/35 (3 credit)

Identified Overlap/Similarity: The 5-credit Forensic Studies 35 and the 3-credit course series of Forensic Studies 25/35 certainly do have overlap as they are both concerned with examining forensic evidence.

Reasoning as to Why LDC is Necessary: Forensic science is a vast area of knowledge including, but not limited to, primary crime scenes, secondary crime scenes, psychological forensics, cyber forensics, physical evidence including forensic toxicology autopsy, arson, explosives, forensic ballistics, forensic anthropology, forensic entomology, impressions and marks. Forensic studies 35 (3-credit) has half of the hours, so fewer topics can be covered. A 5-credit course will allow more time so that more forensic topics can be studied. Students with a keen interest in this topic are afforded the opportunity to delve into more topics, such as cyber forensics, which is a burgeoning field that has direct implications to Alberta students current and future lives. The Forensic 25/35 (3-credit) program of studies is very general where any or none of those topics may be studied.

Student Assessment

No specific required assessments

Course Approval Implementation and Evaluation

