Course Description

Accident Investigation includes a study of integrating accident or near-miss investigations as an effective, practical, and even a profitable management tool. This course incorporates systematic, procedural, determinative, and corrective applications for investigative accident management.

Course Textbook


Course Learning Outcomes

Upon completion of this course, students should be able to:

1. Identify key benefits of conducting accident investigations.
2. Describe the accident investigation process.
3. Apply accident investigation techniques to realistic case study scenarios.
4. Evaluate analytical processes commonly used in accident investigations.
5. Compare various accident causation theories and models.
6. Examine the relationship between accident investigation and hazard prevention.
7. Describe managerial practices for ensuring implementation of corrective actions.

Academic Integrity

Honesty and integrity are taken very seriously at Waldorf University. All students should be familiar with the Waldorf University Academic Integrity Policy (found in the current Student Handbook) and the consequences that will result from breaches of this policy.

Credits

Upon completion of this course, the students will earn three (3) hours of college credit.

Course Structure

1. **Study Guide**: Each unit contains a Study Guide that provides students with the learning outcomes, unit lesson, required reading assignments, and supplemental resources.
2. **Learning Outcomes**: Each unit contains Learning Outcomes that specify the measurable skills and knowledge students should gain upon completion of the unit.
3. **Unit Lesson**: Each unit contains a Unit Lesson, which discusses lesson material.
4. **Reading Assignments**: Each unit contains Reading Assignments from one or more chapters from the textbook and/or outside resources.
5. **Suggested Reading**: Suggested Readings are listed in each unit’s study guide. Students are encouraged to read the resources listed if the opportunity arises, but they will not be tested on their knowledge of the Suggested Readings.
6. **Learning Activities (Non-Graded)**: These non-graded Learning Activities are provided to aid students in their course of study.
7. **Discussion Boards**: Discussion Boards are part of all CSU term courses. More information and specifications
8. **Unit Quizzes**: This course contains three Unit Quizzes, one to be completed at the end of Units IV, V, and VI. It is suggested that the quizzes be completed before students complete the Unit Assessments. Quizzes are used to give students quick feedback on their understanding of the unit material and are composed of multiple-choice questions and written-response questions.

9. **Unit Assessments**: This course contains five Unit Assessments, one to be completed at the end of Units I-III, VII, and VIII. Assessments are composed of written-response questions.

10. **Unit Assignments**: Students are required to submit for grading Unit Assignments in Units IV-VI. Specific information and instructions regarding these assignments are provided below. Grading rubrics are included with each assignment.

11. **Ask the Professor**: This communication forum provides you with an opportunity to ask your professor general or course content related questions.

12. **Student Break Room**: This communication forum allows for casual conversation with your classmates.

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#### Unit Assignments

**Unit IV Assignment**

**Events and Causal Factors Chart Project**

Read the U.S. Chemical Safety Board (CSB) investigation report of the 2007 propane explosion at the Little General Store in Ghent, WV. The final report can be read/downloaded at the following link: [https://www.csb.gov/assets/1/20/csbfinalreportlittlegeneral.pdf?13741](https://www.csb.gov/assets/1/20/csbfinalreportlittlegeneral.pdf?13741)

Additional information on the incident, including a video summary, can be found at the following link: [https://www.csb.gov/little-general-store-propane-explosion/](https://www.csb.gov/little-general-store-propane-explosion/)

Complete the assignment as detailed below.

**Part I**: From the information in the report, create a chart listing events and causal factors for the incident in Microsoft Word, Open Office, or a similar word processing software. If you choose to use a program other than Microsoft Word, be sure to save and submit the document as a Microsoft Word document (i.e., .doc, .docx). The objective of this project is to provide you with an opportunity to use this important and very practical analytical tool. The chart does not have to be infinitely detailed, but the key sequence of events should be charted as should the key conditions surrounding the events. Keep in mind that the purpose of an events and causal factors chart is to aid in identifying which conditions could be causal factors.

Use the charting procedures on pages 72–76 of your textbook to help you with this assignment. In addition, refer to the example events and causal factors (ECF) chart in the Unit IV Lesson for an example of this type of chart.

**Part II**: On a separate page, discuss the potential causal factors that are revealed in the analysis. How do these causal factors compare to the causal factors found in the CSB’s investigation report? Do you think more analysis is needed? This part of the assignment should be a minimum of one page in length.

Upload Parts I and II as a single document. For Part II of the assignment, you should use academic sources to support your thoughts. Any outside sources used, including the sources mentioned in the assignment, must be cited using APA format and must be included on a references page.

Useful hints: In Microsoft Word, you can use parentheses for events (events), square brackets for conditions [conditions], and brackets for the accident {accident}; you may also use a similar convention, such as color-coded text or the shapes that are available within Microsoft Word. Whatever convention you use, be sure you provide some kind of key.

Information about accessing the grading rubric for this assignment is provided below.

**Unit V Assignment**

**Barrier Analysis Worksheet Project**

Read the U.S. Chemical Safety Board investigation report of the 2007 propane explosion at the Little General Store in Ghent, WV. The final report can be read/downloaded at the following link:
Additional information on the incident, including a video summary, can be found at the following link: https://www.csb.gov/little-general-store-propane-explosion/

NOTE: This is the same investigation report used to create the events and causal factors (ECF) chart in Unit IV.

Complete the assignment as detailed below.

Part I: From the information in the report, create a three-column barrier analysis worksheet. Use the sample form on page 173 of the course textbook as a template, and follow the instructions below:

   a. In the first column, list the barriers. Group the barriers by category (failed, not used, did not exist).
   b. In the second column, describe the intended function of each barrier.
   c. In the third column, evaluate the performance of the barrier.

Part II: On a separate page, discuss the potential causal factors that are revealed in the analysis. Are there additional causal factors that were not identified in the ECF chart you created in the Unit IV assignment? This part of the assignment should be a minimum of one page in length.

Upload Parts I and II as a single document. For Part II of the assignment, you should use academic sources to support your thoughts. Any outside sources used, including the sources mentioned in the assignment, must be cited using APA format and must be included on a references page.

Information about accessing the grading rubric for this assignment is provided below.

Unit VI Assignment

Fishbone Diagram Project

Read the U.S. Chemical Safety Board investigation report of the 2007 propane explosion at the Little General Store in Ghent, WV. The final report can be read/downloaded at the following link: https://www.csb.gov/assets/1/20/csbfinalreportlittlegeneral.pdf?13741.

Additional information on the incident, including a video summary, can be found at the following link: https://www.csb.gov/little-general-store-propane-explosion/

NOTE: This is the same investigation report used to complete the assignments in Units IV and V.

Complete the assignment as detailed below.

Part I: From the information in the report and from the information you developed for the assignments in Unit IV (events and causal factors [ECF] chart) and Unit V (barrier analysis), create a fishbone diagram that illustrates the relationship between the causal factors and the accident. In your diagram, the backbone of the fish should represent the accident, and the big bones should represent the people, procedures, environment, equipment, and policies.

Part II: On a separate page, discuss what new information about the accident is revealed in the chart, and describe how that information might be used to identify potential corrective actions. This part of the assignment should be a minimum of one page in length.

Upload Parts I and II as a single document. For Part II of the assignment, you should use academic sources to support your thoughts. Any outside sources used, including the sources mentioned in the assignment, must be cited using APA format and must be included on a references page.

Information about accessing the grading rubric for this assignment is provided below.
Submitting Course Papers/Projects

Once you have completed your papers/projects, submit your completed papers/projects by uploading through the Assignment tab in each unit. Do not e-mail your paper directly to your professor. By using the Assignment tab, your record will automatically be updated to indicate you have submitted your papers/projects and the assignment will be provided to your professor for grading. Instructions for submitting your assignment can be found under the Assignment tab in each unit.

APA Guidelines

Waldorf University requires that students use APA style for papers and projects. Therefore, the APA rules for formatting, quoting, paraphrasing, citing, and listing of sources are to be followed. Students can find Waldorf’s Citation Guide in the myWaldorf Student Portal by clicking on the “Citation Guide” link under the “Resources” heading. This document includes examples and sample papers.

Grading Rubrics

This course utilizes analytic grading rubrics as tools for your professor in assigning grades for all learning activities. Each rubric serves as a guide that communicates the expectations of the learning activity and describes the criteria for each level of achievement. In addition, a rubric is a reference tool that lists evaluation criteria and can help you organize your efforts to meet the requirements of that learning activity. It is imperative for you to familiarize yourself with these rubrics because these are the primary tools your professor uses for assessing learning activities.

Rubric categories include: (1) Discussion Board, (2) Assessment (Written Response), and (3) Assignment. However, it is possible that not all of the listed rubric types will be used in a single course (e.g., some courses may not have Assessments).

The Discussion Board rubric can be found within Unit I’s Discussion Board submission instructions.

The Assessment (Written Response) rubric can be found embedded in a link within the directions for each Unit Assessment. However, these rubrics will only be used when written-response questions appear within the Assessment.

Each Assignment type (e.g., article critique, case study, research paper) will have its own rubric. The Assignment rubrics are built into Blackboard, allowing students to review them prior to beginning the Assignment and again once the Assignment has been scored. This rubric can be accessed via the Assignment link located within the unit where it is to be submitted. Students may also access the rubric through the course menu by selecting the “Grades” link.

Again, it is vitally important for you to become familiar with these rubrics because their application to your Discussion Boards, Assessments, and Assignments is the method by which your instructor assigns all grades.

Communication Forums

These are non-graded discussion forums that allow you to communicate with your professor and other students. Participation in these discussion forums is encouraged, but not required. You can access these forums with the buttons in the Course Menu. Instructions for subscribing/unsubscribing to these forums are provided below.

Click here for instructions on how to subscribe/unsubscribe and post to the Communication Forums.

Ask the Professor

This communication forum provides you with an opportunity to ask your professor general or course content questions. Questions may focus on Blackboard locations of online course components, textbook or course content elaboration, additional guidance on assessment requirements, or general advice from other students.

Questions that are specific in nature, such as inquiries regarding assessment/assignment grades or personal accommodation requests, are NOT to be posted on this forum. If you have questions, comments, or concerns of a non-
public nature, please feel free to email your professor. Responses to your post will be addressed or emailed by the professor within 48 hours.

Before posting, please ensure that you have read all relevant course documentation, including the syllabus, assessment/assignment instructions, faculty feedback, and other important information.

**Student Break Room**

This communication forum allows for casual conversation with your classmates. Communication on this forum should always maintain a standard of appropriateness and respect for your fellow classmates. This forum should NOT be used to share assessment answers.

**Grading**

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Discussion Boards (8 @ 2%)</td>
<td>16%</td>
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<tr>
<td>Quizzes (3 @ 3%)</td>
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<tr>
<td>Assessments (5 @ 9%)</td>
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<td>Assignments (3 @ 10%)</td>
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<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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</tbody>
</table>

**Course Schedule/Checklist (PLEASE PRINT)**

The following pages contain a printable Course Schedule to assist you through this course. By following this schedule, you will be assured that you will complete the course within the time allotted.
By following this schedule, you will be assured that you will complete the course within the time allotted. Please keep
this schedule for reference as you progress through your course.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Introduction to Accident Investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review</td>
<td>☐ Unit Study Guide</td>
</tr>
<tr>
<td></td>
<td>☐ Learning Activities (Non-Graded): See Study Guide</td>
</tr>
<tr>
<td>Read</td>
<td>☐ Chapter 1: What is an Accident?</td>
</tr>
<tr>
<td></td>
<td>☐ Chapter 2: An Accident Happens: What Do You Do? How Long Do You Do It?</td>
</tr>
<tr>
<td></td>
<td>☐ Additional Reading Assignment(s): See Study Guide</td>
</tr>
<tr>
<td></td>
<td>☐ Suggested Reading: See Study Guide</td>
</tr>
<tr>
<td>Discuss</td>
<td>☐ Discussion Board Response: Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)</td>
</tr>
<tr>
<td></td>
<td>☐ Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time)</td>
</tr>
<tr>
<td>Submit</td>
<td>☐ Assessment by Tuesday, 11:59 p.m. (Central Time)</td>
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</tbody>
</table>

Notes/Goals:

<table>
<thead>
<tr>
<th>Unit</th>
<th>Accident Causation Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review</td>
<td>☐ Unit Study Guide</td>
</tr>
<tr>
<td></td>
<td>☐ Learning Activities (Non-Graded): See Study Guide</td>
</tr>
<tr>
<td>Read</td>
<td>☐ Chapter 3: A Short History of Accident Theory</td>
</tr>
<tr>
<td></td>
<td>☐ Additional Reading Assignment(s): See Study Guide</td>
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Notes/Goals:
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<tr>
<th>Unit III</th>
<th>Investigative Techniques</th>
</tr>
</thead>
</table>
| **Review:** | □ Unit Study Guide  
□ **Learning Activities (Non-Graded):** See Study Guide |
| **Read:** | □ Chapter 4: Using the Analytical Approach to Investigate Accidents  
□ Chapter 5: Investigative Techniques  
□ Additional Reading Assignment(s): See Study Guide  
□ Suggested Reading: See Study Guide |
| **Discuss:** | □ **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
□ **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| **Submit:** | □ **Assessment** by Tuesday, 11:59 p.m. (Central Time) |
| Notes/Goals: | |

<table>
<thead>
<tr>
<th>Unit IV</th>
<th>Events and Causal Factors Charting</th>
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<tbody>
<tr>
<td><strong>Review:</strong></td>
<td>□ Unit Study Guide</td>
</tr>
</tbody>
</table>
| **Read:** | □ Chapter 6: The Analytical Process  
□ Chapter 7: Events and Causal Factors Analysis  
□ Additional Reading Assignment(s): See Study Guide  
□ Suggested Reading: See Study Guide |
| **Discuss:** | □ **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
□ **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| **Submit:** | □ Quiz by Tuesday, 11:59 p.m. (Central Time)  
□ Assignment by Tuesday, 11:59 p.m. (Central Time) |
| Notes/Goals: | |
# OSH 4601, Accident Investigation

## Course Schedule

### Unit V: Analytical Techniques I

<table>
<thead>
<tr>
<th>Review:</th>
<th>Unit Study Guide</th>
</tr>
</thead>
</table>
| Read: | - Chapter 8: Change Analysis  
- Chapter 9: Barrier Analysis  
- Additional Reading Assignment(s): See Study Guide  
- Suggested Reading: See Study Guide |
| Discuss: | - Discussion Board Response: Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
- Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| Submit: | - Quiz by Tuesday, 11:59 p.m. (Central Time)  
- Assignment by Tuesday, 11:59 p.m. (Central Time) |

### Notes/Goals:

## Unit VI: Analytical Techniques II

<table>
<thead>
<tr>
<th>Review:</th>
<th>Unit Study Guide</th>
</tr>
</thead>
</table>
| Read: | - Chapter 10: Tree Analysis  
- Chapter 11: Cause and Effect Analysis  
- Chapter 12: Specialized and Computerized Techniques  
- Additional Reading Assignment(s): See Study Guide  
- Suggested Reading: See Study Guide |
| Discuss: | - Discussion Board Response: Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
- Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| Submit: | - Quiz by Tuesday, 11:59 p.m. (Central Time)  
- Assignment by Tuesday, 11:59 p.m. (Central Time) |

### Notes/Goals:
<table>
<thead>
<tr>
<th>Unit VII</th>
<th>Recommending Corrective Actions</th>
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</thead>
<tbody>
<tr>
<td>Review:</td>
<td>□ Unit Study Guide</td>
</tr>
</tbody>
</table>
| Read: | □ Chapter 6: The Analytical Process  
         □ Chapter 13: Recommending Corrective Actions  
         □ Additional Reading Assignment(s): See Study Guide  
         □ Suggested Reading: See Study Guide |
| Discuss: | □ Discussion Board Response: Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
          □ Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, 11:59 p.m. (Central Time) |
| Submit: | □ Assessment by Tuesday, 11:59 p.m. (Central Time) |

Notes/Goals:

<table>
<thead>
<tr>
<th>Unit VIII</th>
<th>Reporting and Follow-Up</th>
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<tbody>
<tr>
<td>Review:</td>
<td>□ Unit Study Guide</td>
</tr>
</tbody>
</table>
| Read: | □ Chapter 14: Reporting and Follow-up  
       □ Chapter 15: Learning from Accidents  
       □ Additional Reading Assignment(s): See Study Guide  
       □ Suggested Reading: See Study Guide |
| Discuss: | □ Discussion Board Response: Submit your response to the Discussion Board question by Saturday, 11:59 p.m. (Central Time)  
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