Deland High School  
Course Syllabus  
2022-2023

Teacher Name: Mr. Manning  
Term: Full year  
Course Name: Probability & Statistics w/ Applications Honors  
Course Number: 1210300

Teacher Email: jmanning@volusia.k12.fl.us

Materials Needed: Notebook section, paper, pencil

Course Objectives:  
This course is designed to explore the concept of probability and elementary statistics. The content will include random experiments, probability concepts, permutations, combinations, and statistical applications. Students will learn essential techniques for producing data (surveys, experiments, observational studies), analyzing data (graphical & numerical summaries), modeling data (probability, random variables, sampling distributions), and drawing conclusions from data (inference procedures – confidence intervals and significance tests). Calculators and computers will serve as instructional tools in concept development.

Major Units/Topics/Themes:
- Descriptive Statistics
- Probability
- Random Variables
- Simulation and Design
- Statistical Inference

Methods of Assessment:
- Diagnostic (Pre-Tests)
- Formative (Classwork, Individual & Group Activities, Daily Review)
- Summative (Tests, Quizzes, Projects)
Probability & Statistics w/ Applications Honors  
Student Guide  
Mr. Manning

All make-up work is the student’s responsibility. Please see me the day you return to receive any work that you have missed.

**Grading**

<table>
<thead>
<tr>
<th>District grading categories:</th>
<th>District grading scale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Assessment: 0%</td>
<td>A: 90 – 100</td>
</tr>
<tr>
<td>Formative Assessment: 40%</td>
<td>B: 80 – 89</td>
</tr>
<tr>
<td>Summative Assessment: 60%</td>
<td>C: 70 – 79</td>
</tr>
<tr>
<td></td>
<td>D: 60 – 69</td>
</tr>
<tr>
<td></td>
<td>F: below 60</td>
</tr>
</tbody>
</table>

Always be ready for a short, unannounced quiz. Quizzes provide feedback, allowing you to monitor your progress. I take quiz and test security very seriously. Academic dishonesty will not be tolerated and will result in a score of zero. Additional steps may be taken when warranted.

**Class Rules**

1. Please be on time.  
2. Please come prepared for class.  
3. Be respectful of others and of others’ property.  
4. Be open to others’ ideas.  
5. Follow all school rules and policies.  

**Consequences**

<table>
<thead>
<tr>
<th>First offense</th>
<th>Second offense</th>
<th>Third offense</th>
<th>Fourth offense</th>
</tr>
</thead>
<tbody>
<tr>
<td>warning</td>
<td>change of seat</td>
<td>phone call home</td>
<td>referral to office</td>
</tr>
</tbody>
</table>

In the event of a severe disturbance, the referral will be immediate.

Teacher’s Authority to Override Final Grade: A teacher may override the final grade if a student’s overall performance warrants it. Before the grade override is finalized, the teacher must notify the parent/guardian concerning the student’s performance if the override may result in a lower final grade. The teacher may issue a failing grade override based on the student’s overall performance only with the approval of the principal. This refers to the final grade of the grading period, or the final grade for the course.

Tutoring can be available most mornings from 7:45 to 8:15 or can possibly be arranged at other times such as during lunch or after school by appointment.
DeLand High School  
Course Syllabus  
2022-2023

Teacher Name:  Mr. Manning  
Term:  all year

Course Name:  IB Mathematics: Analysis and Approaches SL (Junior)  
Course #:  1201325P

Textbook(s) Used:  Mathematics: Analysis and Approaches  
Oxford IB Diploma Programme  
resource) Mathematics for the international student; Haese & Harris

Other Materials Needed:  paper, pencil, notebook, graphing calculator recommended

**Course Objectives:**  The ultimate aim of this course is to prepare students for the IB exam during their senior year in the Mathematics SL area. This is the first year of the two year body of work.

**Major Units/Topics/Themes:**  (Two year course)

**Topic 1—Number and Algebra**  
Number and algebra allow us to represent patterns, show equivalencies and make generalizations which enable us to model real-world situations. Algebra is an abstraction of numerical concepts and employs variables which allow us to solve mathematical problems. The aim of the SL content of the number and algebra topic is to introduce students to numerical concepts and techniques which, combined with an introduction to arithmetic and geometric sequences and series, can be used for financial and other applications. Students will also be introduced to the formal concept of proof.

**Topic 2—Functions**  
Models are depictions of real-life events using expressions, equations or graphs while a function is defined as a relation or expression involving one or more variables. Creating different representations of functions to model the relationships between variables, visually and symbolically as graphs, equations and tables represents different ways to communicate mathematical ideas. The aim of the SL content in the functions topic is to introduce students to the important unifying theme of a function in mathematics and to apply functional methods to a variety of mathematical situations. Throughout this topic students should be given the opportunity to use technology, such as graphing packages and graphing calculators to develop and apply their knowledge of functions, rather than using elaborate analytic techniques.

**Topic 3—Geometry and Trigonometry**  
Geometry and trigonometry allows us to quantify the physical world, enhancing our spatial awareness in two and three dimensions. This topic
provides us with the tools for analysis, measurement and transformation of quantities, movements and relationships. The aim of the SL content of the geometry and trigonometry topic is to introduce students to geometry in three dimensions and to non right-angled trigonometry. Students will explore the circular functions and use properties and identities to solve problems in abstract and real-life contexts. Throughout this topic students should be given the opportunity to use technology such as graphing packages, graphing calculators and dynamic geometry software to develop and apply their knowledge of geometry and trigonometry.

**Topic 4—Statistics and Probability**

Statistics is concerned with the collection, analysis and interpretation of data and the theory of probability can be used to estimate parameters, discover empirical laws, test hypotheses and predict the occurrence of events. Statistical representations and measures allow us to represent data in many different forms to aid interpretation.

Probability enables us to quantify the likelihood of events occurring and so evaluate risk. Both statistics and probability provide important representations which enable us to make predictions, valid comparisons and informed decisions. These fields have power and limitations and should be applied with care and critically questioned to differentiate between the theoretical and the empirical/observed. Probability theory allows us to make informed choices, to evaluate risk, and to make predictions about seemingly random events.

The aim of the SL content in the statistics and probability topic is to introduce students to the important concepts, techniques and representations used in statistics and probability. Students should be given the opportunity to approach this topic in a practical way, to understand why certain techniques are used and to interpret the results. The use of technology such as simulations, spreadsheets, statistics software and statistics apps can greatly enhance this topic.

It is expected that most of the calculations required will be carried out using technology, but explanations of calculations by hand may enhance understanding. The emphasis is on understanding and interpreting the results obtained, in context.

**Topic 5—Calculus**

Calculus describes rates of change between two variables and the accumulation of limiting areas. Understanding these rates of change and accumulations allow us to model, interpret and analyze real-world problems and situations. Calculus helps us to understand the behaviour of functions and allows us to interpret the features of their graphs.

The aim of the SL content in the calculus topic is to introduce students to the concepts and techniques of differential and integral calculus and their applications. Throughout this topic students should be given the opportunity to use technology such as graphing packages and graphing calculators to develop and apply their knowledge of calculus.

*** Make-up Work Policy: students should refer to the school policy as found in the handbook for acquiring and receiving credit for all make-up work. It is the student’s responsibility to request work from when they were absent.
IB Analysis and Approaches (Junior)
Student Guide
Mr. Manning

Email: jmanning@volusia.k12.fl.us

Materials:
Student materials needed every day: organized notebook, paper, pencil and/or pen

Make-Up Work:
All make-up work is the student’s responsibility. Please see me the day you return to receive any work that you have missed.

Grading
District grading categories:
Diagnostic Assessment: 0%
Formative Assessment: 40%
Summative Assessment: 60%

District grading scale:
A: 90 - 100
B: 80 - 89
C: 70 - 79
D: 60 - 69
F: below 60

Always be ready for a short, unannounced quiz. Quizzes provide feedback, allowing you to monitor your progress. I take quiz and test security very seriously. Academic dishonesty will not be tolerated and will result in a score of zero. Additional steps may be taken when warranted.

Class Rules
1. Please be on time.
2. Please come prepared for class.
3. Be respectful of others and of others’ property.
4. Be open to others’ ideas.
5. Follow all school rules and policies.

Consequences
First offense - warning
Second offense - change of seat
Third offense - phone call home
Fourth offense - referral to office

In the event of a severe disturbance, the referral will be immediate.

Teacher’s Authority to Override Final Grade: A teacher may override the final grade if a student’s overall performance warrants it. Before the grade override is finalized, the teacher must notify the parent/guardian concerning the student’s performance if the override may result in a lower final grade. The teacher may issue a failing grade override based on the student’s overall performance only with the approval of the principal. This refers to the final grade of the grading period, or the final grade for the course.

Tutoring can be available most mornings from 7:45 to 8:15 or can possibly be arranged at other times such as during lunch or after school by appointment.
DeLand High School
Course Syllabus
2022-2023

Teacher Name: Mr. Manning Term: all year

Course Name: IB Mathematics: Analysis and Approaches SL (Senior) Course #: 1201330P

Textbook(s) Used: Mathematics: Analysis and Approaches Oxford IB Diploma Programme (resource) Mathematics for the international student; Haese & Harris

Other Materials Needed: paper, pencil, notebook, graphing calculator recommended

Course Objectives: The ultimate aim of this course is to prepare students for the IB exam during their senior year in the Mathematics SL area. This is the second year of the two year body of work.

Major Units/Topics/Themes: (Two year course)

Topic 1—Number and Algebra
Number and algebra allow us to represent patterns, show equivalencies and make generalizations which enable us to model real-world situations. Algebra is an abstraction of numerical concepts and employs variables which allow us to solve mathematical problems. The aim of the SL content of the number and algebra topic is to introduce students to numerical concepts and techniques which, combined with an introduction to arithmetic and geometric sequences and series, can be used for financial and other applications. Students will also be introduced to the formal concept of proof.

Topic 2—Functions
Models are depictions of real-life events using expressions, equations or graphs while a function is defined as a relation or expression involving one or more variables. Creating different representations of functions to model the relationships between variables, visually and symbolically as graphs, equations and tables represents different ways to communicate mathematical ideas. The aim of the SL content in the functions topic is to introduce students to the important unifying theme of a function in mathematics and to apply functional methods to a variety of mathematical situations. Throughout this topic students should be given the opportunity to use technology, such as graphing packages and graphing calculators to develop and apply their knowledge of functions, rather than using elaborate analytic techniques.

Topic 3—Geometry and Trigonometry
Geometry and trigonometry allows us to quantify the physical world, enhancing our spatial awareness in two and three dimensions. This topic provides us with the tools for analysis, measurement and transformation of quantities, movements and relationships. The aim of the SL content of the geometry and trigonometry topic is to introduce students to geometry in three dimensions and to non-right-angled trigonometry. Students will explore the circular functions and use properties and identities to solve problems in abstract and real-life contexts. Throughout this topic students should be
given the opportunity to use technology such as graphing packages, graphing calculators and dynamic geometry software to develop and apply their knowledge of geometry and trigonometry.

**Topic 4—Statistics and Probability**  Statistics is concerned with the collection, analysis and interpretation of data and the theory of probability can be used to estimate parameters, discover empirical laws, test hypotheses and predict the occurrence of events. Statistical representations and measures allow us to represent data in many different forms to aid interpretation.

Probability enables us to quantify the likelihood of events occurring and so evaluate risk. Both statistics and probability provide important representations which enable us to make predictions, valid comparisons and informed decisions. These fields have power and limitations and should be applied with care and critically questioned to differentiate between the theoretical and the empirical/observed. Probability theory allows us to make informed choices, to evaluate risk, and to make predictions about seemingly random events.

The aim of the SL content in the statistics and probability topic is to introduce students to the important concepts, techniques and representations used in statistics and probability. Students should be given the opportunity to approach this topic in a practical way, to understand why certain techniques are used and to interpret the results. The use of technology such as simulations, spreadsheets, statistics software and statistics apps can greatly enhance this topic. It is expected that most of the calculations required will be carried out using technology, but explanations of calculations by hand may enhance understanding. The emphasis is on understanding and interpreting the results obtained, in context.

**Topic 5—Calculus**  Calculus describes rates of change between two variables and the accumulation of limiting areas. Understanding these rates of change and accumulations allow us to model, interpret and analyze real-world problems and situations. Calculus helps us to understand the behaviour of functions and allows us to interpret the features of their graphs.

The aim of the SL content in the calculus topic is to introduce students to the concepts and techniques of differential and integral calculus and their applications. Throughout this topic students should be given the opportunity to use technology such as graphing packages and graphing calculators to develop and apply their knowledge of calculus.

*** Make-up Work Policy: students should refer to the school policy as found in the handbook for acquiring and receiving credit for all make-up work. It is the student’s responsibility to request work from when they were absent.
Email: jmanning@volusia.k12.fl.us

**Materials:**
Student materials needed every day: organized notebook, paper, pencil and/or pen

**Make-Up Work:**
All make-up work is the student’s responsibility. Please see me the day you return to receive any work that you have missed.

**Grading**

<table>
<thead>
<tr>
<th>District grading categories</th>
<th>District grading scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Assessment:</td>
<td>A: 90 - 100</td>
</tr>
<tr>
<td>Formative Assessment:</td>
<td>B: 80 - 89</td>
</tr>
<tr>
<td>Summative Assessment:</td>
<td>C: 70 - 79</td>
</tr>
<tr>
<td></td>
<td>D: 60 - 69</td>
</tr>
<tr>
<td></td>
<td>F: below 60</td>
</tr>
</tbody>
</table>

Always be ready for a short, unannounced quiz. Quizzes provide feedback, allowing you to monitor your progress. I take quiz and test security very seriously. Academic dishonesty will not be tolerated and will result in a score of zero. Additional steps may be taken when warranted.

**Class Rules**
1. Please be on time.
2. Please come prepared for class.
3. Be respectful of others and of others’ property.
4. Be open to others’ ideas.
5. Follow all school rules and policies.

**Consequences**
- First offense - warning
- Second offense - change of seat
- Third offense - phone call home
- Fourth offense - referral to office

In the event of a severe disturbance, the referral will be immediate.

Teacher’s Authority to Override Final Grade: A teacher may override the final grade if a student’s overall performance warrants it. Before the grade override is finalized, the teacher must notify the parent/guardian concerning the student’s performance if the override may result in a lower final grade. The teacher may issue a failing grade override based on the student’s overall performance only with the approval of the principal. This refers to the final grade of the grading period, or the final grade for the course.

Tutoring can be available most mornings from 7:45 to 8:15 or can possibly be arranged at other times such as during lunch or after school by appointment.
DeLand High School
Course Syllabus
2022-2023

Teacher Name: _Mr. Manning_________ Term: _all year________

Course Name: _IB Mathematics Applications and Interpretations (Junior)_____
Course #: 1209300P

Textbook(s) Used: Mathematics: Applications and Interpretations Oxford IB Diploma Programme (resource) Mathematics for the international student; Haese & Harris

Other Materials Needed: paper, pencil, notebook, graphing calculator recommended

Course Objectives: The ultimate aim of this course is to prepare students for the IB exam during their senior year in the Mathematics Studies SL area. This is the first year of the two year body of work.

Major Units/Topics/Themes: (Two year course)

Topic 1—Number and Algebra
Number and algebra allow us to represent patterns, show equivalencies and make generalizations which enable us to model real-world situations. Algebra is an abstraction of numerical concepts and employs variables which allow us to solve mathematical problems. The aim of the SL content of the number and algebra topic is to introduce students to numerical concepts and techniques which, combined with an introduction to arithmetic and geometric sequences and series, can be used for financial and other applications. Students will also be introduced to the formal concept of proof.

Topic 2—Functions
Models are depictions of real-life events using expressions, equations or graphs while a function is defined as a relation or expression involving one or more variables. Creating different representations of functions to model the relationships between variables, visually and symbolically as graphs, equations and tables represents different ways to communicate mathematical ideas. The aim of the SL content in the functions topic is to introduce students to the important unifying theme of a function in mathematics and to apply functional methods to a variety of mathematical situations. Throughout this topic students should be given the opportunity to use technology, such as graphing packages and graphing calculators to develop and apply their knowledge of functions, rather than using elaborate analytic techniques.

Topic 3—Geometry and Trigonometry
Geometry and trigonometry allows us to quantify the physical world, enhancing our spatial awareness in two and three dimensions. This topic provides us with the tools for analysis, measurement and transformation of quantities, movements and relationships. The aim of the standard level content of the geometry and trigonometry topic is to introduce students to appropriate skills and techniques for practical problem solving in two and three dimensions. Throughout this topic students should be given
the opportunity to use technology such as graphing packages, graphing calculators and dynamic geometry software to develop and apply their knowledge of geometry and trigonometry.

**Topic 4—Statistics and Probability**  
Statistics is concerned with the collection, analysis and interpretation of data and the theory of probability can be used to estimate parameters, discover empirical laws, test hypotheses and predict the occurrence of events. Statistical representations and measures allow us to represent data in many different forms to aid interpretation.

Probability enables us to quantify the likelihood of events occurring and so evaluate risk. Both statistics and probability provide important representations which enable us to make predictions, valid comparisons and informed decisions. These fields have power and limitations and should be applied with care and critically questioned to differentiate between the theoretical and the empirical/observed. Probability theory allows us to make informed choices, to evaluate risk, and to make predictions about seemingly random events.

It is expected that most of the calculations required will be carried out using technology, but explanations of calculations by hand may enhance understanding. The emphasis is on choosing the most appropriate technique, and understanding and interpreting the results obtained in context.

**Topic 5—Calculus**  
Calculus describes rates of change between two variables and the accumulation of limiting areas. Understanding these rates of change allows us to model, interpret and analyze real-world problems and situations. Calculus helps us understand the behaviour of functions and allows us to interpret the features of their graphs. The aim of the standard level content in the calculus topic is to introduce students to the key concepts and techniques of differential and integral calculus and their use to approach practical problems.

Throughout this topic students should be given the opportunity to use technology such as graphing packages and graphing calculators to develop and apply their knowledge of calculus.

*** Make-up Work Policy: students should refer to the school policy as found in the handbook for acquiring and receiving credit for all make-up work. It is the student’s responsibility to request work from when they were absent.
IB Applications and Interpretations (Junior)
Student Guide
Mr. Manning

Email: jmanning@volusia.k12.fl.us

Materials:
Student materials needed every day: organized notebook, paper, pencil and/or pen

Make-Up Work:
All make-up work is the student’s responsibility. Please see me the day you return to receive any work that you have missed.

Grading
District grading categories:                                     District grading scale:
Diagnostic Assessment:    0%                                       A: 90 – 100
Formative Assessment:      40%                                     B: 80 – 89
Summative Assessment:     60%                                      C: 70 – 79

Always be ready for a short, unannounced quiz. Quizzes provide feedback, allowing you to monitor your progress. I take quiz and test security very seriously. Academic dishonesty will not be tolerated and will result in a score of zero. Additional steps may be taken when warranted.

Class Rules
1. Please be on time.
2. Please come prepared for class.
3. Be respectful of others and of others’ property.
4. Be open to others’ ideas.
5. Follow all school rules and policies.

   In the event of a severe disturbance, the referral will be immediate.

Consequences
First offense - warning
Second offense - change of seat
Third offense - phone call home
Fourth offense - referral to office

Teacher’s Authority to Override Final Grade: A teacher may override the final grade if a student’s overall performance warrants it. Before the grade override is finalized, the teacher must notify the parent/guardian concerning the student’s performance if the override may result in a lower final grade. The teacher may issue a failing grade override based on the student’s overall performance only with the approval of the principal. This refers to the final grade of the grading period, or the final grade for the course.

Tutoring can be available most mornings from 7:45 to 8:15 or can possibly be arranged at other times such as during lunch or after school by appointment.