### Advanced Mathematics Preparation -- Level Four

<table>
<thead>
<tr>
<th>Class Site(s)</th>
<th>Sandburg Learning Center Room 208</th>
<th>Program Area</th>
<th>GED</th>
<th>ABE</th>
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<tr>
<td><strong>Student Placement Level(s)</strong></td>
<td>Low Adult Secondary</td>
<td><strong>Class Assessment(s)</strong></td>
<td>TABE D+</td>
<td><strong>Scaled Score Range</strong></td>
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<td><strong>Class Led By</strong></td>
<td>Paid Teacher</td>
<td><strong>Delivery Style</strong></td>
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#### Class Goals

The students will be able to:
- Build solution pathways and lines of reasoning within the content below.
- Represent problems in different forms. (Algebraically, Graphically, Numerically)
- Build steps of problem solving and analyze the reasonableness of reasoning and solutions.
- Operate with mathematical fluency.
- Evaluate solutions and reasoning (recognize flaws in reasoning and counterexamples to flawed reasoning)

#### Class Content

The class will cover the areas of:
- **Data Analysis:** Permutations and Combinations calculation and interpretation. Determining line of best fit of data and interpolating and extrapolating figures based on data. Determine probability of simple and complex events.
- **Algebra:** Calculating and graphing linear and nonlinear equations. Factoring and solving polynomial expressions and equations. Solve systems of linear and non-linear equations and inequalities. Determining domain, range and key features of non-linear equations and inequalities. Determining undefined values in algebraic expressions and equations. Writing non-linear equations based on given data.
- **Geometry:** Calculating surface area and volume of regular and irregular 3D objects. Modify formulas for irregular objects.
- **Problem solving and Reasoning:** 5 step process, problem solving strategies, missing/extra information. Advanced use of the real and virtual TI-30 XS Multiview calculators. Interpretation and use of the AE symbol tool sheet for free response items.
- **Estimation:** rounding, prediction, reasonableness of answer
| Class Activities | Class will work in the environments of:  
| | - Lecture with teacher.  
| | - Small group work with discussion.  
| | - Large group discussion.  
| | - Experiments with real and virtual manipulative activities. |

| Class Text(s), Educational Technology, & Other Instructional Materials | Number Power series  
| | CCSS – Achieve Mathematics – Steck Vaughn  
| | [http://nlvm.usu.edu](http://nlvm.usu.edu) - Utah State University – National library of virtual manipulatives.  
| | [www.mathopenref.com](http://www.mathopenref.com) – Math Open Reference  
| | Varied classroom manipulatives.  
| | Teacher created materials. |