



### **Group Semester Assignment (GSA): Case Study: VA Condos**

**This assignment worth 20% of your summative assessment for the course or 200/1000 presented as 100 Points.**

#### **Please pay close attention**

- Answer all the questions within a business report. In your report, make sure not only all the questions are answered and addressed explicitly but also critical evaluation of the situation and the analysis method used to answer these questions are addressed.
- You are required to work in groups of two but no more than three students. You also need to make a statement about the contribution of each team member and sign that all the team members contributed equally.
- One submission per team in pdf format.
- You are required to use no more than 10 pages for the report (excluding appendix)

**This assignment is due on 23rd of April 2021.**

### ***CASE 1: VA Condos***

Clark Construction is building a set of new condos in the Virginia Beach. The project consists of 18 buildings, each housing 12 condominiums. Each building will border the Virginia Beach Golf Course designed by J. M. Architects. The minimum price for a condominium unit is \$300,000, and buyers expect a high-quality project. Response to the initial promotion was so great that CLARK Construction pre-sold all 216 units based solely on an architect's conception and schematic plans of the project. One reason for the quick sell-out may have been the -YOU CAN MOVE IN BY OCTOBER- campaign. As part of this campaign, CLARK promised rebates of \$20,000 cash to all 216 buyers if all the facilities, buildings, and other amenities were not completed by October 15.

As of mid-January, the project is well underway. The following PERT/CPM network details the precedence for the activities of the tasks remaining to be completed in the project. R and T will be subcontracted.

Three-time estimates (in days) for each of the other activities needed for each condo have been determined and are given in the following table (Note: all the condos will be constructed concurrently) You are required to use a full day as the smallest unit for scheduling the activities:

<i>ACTIVITY CODE AND DESCRIPTION</i>	<i>Estimated Activity Duration (a, m, b) Dependencies</i>			
	<i>optimistic</i>	<i>most likely</i>	<i>pessimistic</i>	
<i>A1. Land measurements</i>	<i>5</i>	<i>8</i>	<i>11</i>	<i>-</i>
<i>B2. Layout of measurement stakes</i>	<i>7</i>	<i>12</i>	<i>17</i>	<i>A</i>
<i>C3. Analysis of surrounding environment</i>	<i>10</i>	<i>17</i>	<i>24</i>	<i>A</i>
<i>D4. Building of foundation</i>	<i>12</i>	<i>22</i>	<i>32</i>	<i>B</i>
<i>E5. Approval of construction papers</i>	<i>6</i>	<i>13</i>	<i>20</i>	<i>C</i>
<i>F6. Layout of building framework</i>	<i>11</i>	<i>15</i>	<i>19</i>	<i>C</i>
<i>G7. Gas line instalment</i>	<i>9</i>	<i>18</i>	<i>27</i>	<i>C</i>
<i>H8. Electrical wiring</i>	<i>25</i>	<i>27</i>	<i>29</i>	<i>B, G</i>
<i>I9. Interior plumbing</i>	<i>18</i>	<i>20</i>	<i>22</i>	<i>E, B</i>
<i>J10. Wall construction</i>	<i>12</i>	<i>25</i>	<i>38</i>	<i>D, H</i>
<i>K11. Insulation</i>	<i>10</i>	<i>23</i>	<i>36</i>	<i>I, F</i>
<i>L12. Drywall</i>	<i>15</i>	<i>20</i>	<i>25</i>	<i>F, I</i>
<i>M13. Roofing</i>	<i>3</i>	<i>10</i>	<i>17</i>	<i>K, J</i>
<i>N14. Restaurant construction</i>	<i>25</i>	<i>40</i>	<i>55</i>	<i>G</i>
<i>O15. Swimming pool</i>	<i>9</i>	<i>20</i>	<i>31</i>	<i>J, K, L, G</i>
<i>P16. Fencing</i>	<i>6</i>	<i>10</i>	<i>14</i>	<i>J, K, L, G</i>
<i>Q17. Telephone lines</i>	<i>12</i>	<i>22</i>	<i>32</i>	<i>M, O</i>
<i>R18. Completion of underground</i>				<i>M, O</i>
<i>S19. Snack bar</i>	<i>10</i>	<i>20</i>	<i>30</i>	<i>N</i>
<i>T20. Stream building</i>				<i>N</i>
<i>U.21 Outside lighting</i>	<i>8</i>	<i>12</i>	<i>16</i>	<i>P, S</i>
<i>V22. Parking lots</i>	<i>3</i>	<i>5</i>	<i>7</i>	<i>P, S, Q,</i>
<i>W23. Drainage construction</i>	<i>5</i>	<i>10</i>	<i>15</i>	<i>P, S, Q, T</i>
<i>X24. Safety inspection</i>	<i>9</i>	<i>15</i>	<i>21</i>	<i>U, W</i>
<i>Y25. Landscaping</i>	<i>6</i>	<i>24</i>	<i>42</i>	<i>R, V</i>
<i>Z26. Final permits/releases</i>	<i>10</i>	<i>15</i>	<i>20</i>	<i>X, Y</i>

Activity R, the underground sewer activity, consists of installing pipes and connections to join all 18 buildings to the main city sewer system. CLARK Construction selected the Comey Construction alternative for this activity.

Comey Construction has submitted a bid of \$300,000 for the design and construction of the required sewer project. It estimates a most likely completion time of 25 days, with a difference of plus or minus two days for the optimistic and pessimistic time estimates.

Activity T, the stream building activity, involves building a stream that runs throughout the project and connects the western and eastern boundaries. CLARK has selected the Lakeport Inc. alternative:

CLARK has received a bid of \$400,000 from Lakeport, Inc. to design and build a meandering stream that will most likely be finished in 30 days, give or take five days.

Each activity is estimated to need 3 people with a cost of \$150/day per person. The indirect cost of the project is estimated to be \$3500/day. Assume that today is January 14, and that all the work is to be done on a five-day-per-week basis including holiday periods. Prepare a report for this project within which you address the followings:

- **A1-**Develop tentative (preliminary) target start and completion dates for each activity. A Gantt Chart, list of critical activities, and a tabular schedule is required.
- **A2-**Assuming unlimited resources optimize the schedule.
- **B-**Give a date by which you are 85, 90 and 95% sure that the entire project will be completed based on your preliminary schedule. Complete analysis and discussion are needed.
- **C-**Provide a risk management plan including a contingency budget and contingency duration for 90% confidence or reliability. For your suggested budget and duration. Complete analysis and discussion are needed.
- **D-**Recommend whether to spend \$25,000 for additional legal assistance that would reduce the most likely time to attain the final permits and releases (activity Z) from 15 to 12 days and its pessimistic time from 25 to 18 days. Discuss.
- **E-**Develop a budget for the project based on your recommended plan. And provide any financial analysis you can provide.

- **F-Analyse the proposed project plan from planning perspective and identify pros and cons of the recommended project plan.**

**Assessment Criteria:**

<b>Section</b>	<b>Points</b>	<b>Criteria</b>
<b><i>A1 and A2</i></b>	<b><i>30</i></b>	Findings and answer to question(s), critical evaluation of the findings, comments, and discussions and presentation.
<b><i>B</i></b>	<b><i>20</i></b>	Findings and answer to question(s), critical evaluation of the findings, comments, and discussions and presentation.
<b><i>C</i></b>	<b><i>10</i></b>	Findings and answer to question(s), critical evaluation of the findings, comments, and discussions and presentation.
<b><i>D</i></b>	<b><i>10</i></b>	Findings and answer to question(s), critical evaluation of the findings, comments, and discussions and presentation.
<b><i>E</i></b>	<b><i>20</i></b>	Findings and answer to question(s), critical evaluation of the findings, comments, and discussions and presentation.
<b><i>F</i></b>	<b><i>10</i></b>	Findings and answer to question(s), critical evaluation of the findings, comments, and discussions and presentation.
<b><i>Total</i></b>	<b><i>100</i></b>	

**All the best....:**  
**hkh**