

## Lab 4 rubric

### Overview

- 100 points possible
- Grade basis: Completeness, clarity, and correctness
- Assign partial credit when appropriate.

Problem	Item
1 (b)	Block diagram of circuit is recorded, with signals labeled.
	Spectrum analyzer display of circuit output is recorded.
2 (a)	Properly identify each message as either DSBSC or AM.
(b)	Properly identify the message amplitude, frequency on each signal.
3 (b)	Oscilloscope plot is included that contains both <ul style="list-style-type: none"> <li>- The modulated DSBSC signal</li> <li>- The demodulated message</li> </ul>
(c)	Effect of phase difference <ul style="list-style-type: none"> <li>- Empirical</li> <li>- Theoretical</li> </ul>
(d)	Effect of frequency difference <ul style="list-style-type: none"> <li>- Empirical</li> <li>- Theoretical</li> </ul>
5.1	Block diagram of Costas loop is given.
	... with signals labeled.
5.2	How does Costas loop determine phase error?
5.3	How does VCO implement negative phase feedback?