The implementation of the LMS algorithm, presented in *Lecture 5* (page 3), is:

```
1. function [e] = LMS(d, u, mu, M)
2. n_max = length(d);
3. if (n_max ~= length(u)) return; end
4. u = [zeros(M-1, 1); u];
5. w = zeros(M,1);
6. y = zeros(n_max,1);
7. e = zeros(n_max,1);
8. for n=1:n_max
9.    uu = u(n+M-1:-1:n);
10.   y(n) = w'*uu;
11.   e(n) = d(n) - y(n);
12.   w = w + mu*e(n)*uu;
13.end
```

where:

- d is the vector of desired signal samples;
- u is the vector of input signal samples;
- mu is μ parameter;
- M is the number of taps;
- e is the output error vector.