Support Vector Machines (17 classes):

The values are in order: (C, gamma). All of them use Gaussian RBF kernel.

MODEL 1	Accuracy
100 words (10, 0.001)	76.81%
500 words (10, 0.001)	80.93%
1000 words (10, 0.001)	81.34%

MODEL 2	Accuracy
100 words (10, 0.001)	78.39%
500 words (10, 0.001)	81.12%
1000 words (1000, 0.001)	81.48%

MODEL 3	Accuracy
100 words (10, 0.001)	79.23%
500 words (10, 0.001)	81.18%
1000 words (1000, 0.001)	81.39%

Confusion Matrix for SVM (Model 2; 1000 words) 0.02 0.01 0.06 0.01 0.01 0.02 0.01 0.05 0.03 0.02 0.01 0.00 0.01 0.01 0.01 Agriculture -0.04 0.00 0.03 0.01 0.05 0.01 0.08 0.06 0.00 Botany 0.01 0.00 0.01 0.04 0.00 0.03 0.00 0.00 0.00 0.02 0.03 0.00 0.12 0.00 0.00 0.00 0.73 Church 0.00 0.00 0.01 0.00 0.20 0.01 0.01 0.02 0.00 0.02 0.00 0.01 0.13 0.00 0.01 0.01 Commerce 0.01 0.00 0.01 0.00 0.91 0.01 0.00 0.00 0.01 0.00 0.00 0.00 0.04 0.01 0.00 Drama 0.00 0.01 0.00 0.00 0.91 0.02 0.00 0.00 0.00 0.00 0.00 0.02 0.01 Fiction 0.03 0.75 0.01 0.01 0.00 0.02 0.06 0.01 0.00 0.00 0.01 0.04 0.00 0.01 History 0.00 0.00 0.01 0.11 0.68 0.00 0.01 0.06 0.02 0.01 0.01 0.00 0.00 History Natural 0.04 0.00 0.01 0.02 0.00 0.76 0.00 0.01 0.01 0.01 0.05 0.01 0.00 0.07 0.00 0.00 0.01 0.00 0.01 0.82 0.01 0.06 0.03 0.02 0.02 **Mathematics** 0.00 0.00 0.01 0.00 0.02 0.00 0.91 0.00 0.01 0.01 0.00 0.01 Medicine 0.05 0.01 0.00 0.01 0.03 0.03 0.02 0.10 0.06 0.62 0.02 0.02 0.01 0.01 0.02 Physics 0.01 0.01 0.01 0.00 0.00 0.00 0.00 0.00 0.91 0.01 0.01 Poetry 0.03 0.00 0.06 0.00 0.00 0.00 0.03 0.78 0.00 0.01 0.00 0.01 Politics 0.01 0.03 0.02 0.04 0.00 0.01 0.01 0.01 0.07 0.01 0.71 Rhetoric 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.01 0.01 0.00 0.91 0.06 Sermons 0.02 0.02 0.00 0.02 0.00 0.02 0.02 0.00 0.04 0.06 0.01 0.01 0.00 0.02 0.00 Travels Agriculture Botany Church Commerce Drama Fiction History Matural Law Mathematics Physics Poetry Politics Streeting Semons Lawers

- 0.8

0.6

0.4

0.2

0.0

Predicted lab