

```

                                Ex1HSB
options nodate nonumber ps=max linesize=75;
goptions reset=all hsize=5 vsize=4 ftext=simplex;
title;
libname BASUG "d:\my documents\presentations\BASUG_08";

proc print data=BASUG.hsb (obs=50);
  var school_id student_id math cses sector;
run;

proc mixed data=BASUG.hsb noclprint;
  class school_id;
  model math = sector cses sector*cses / notest solution ddfm=bw outpredm=predfix
outpred=predrand;
  random intercept cses / subject=school_id type=un g;
run;

*plotting predicted values obtained from fixed effects to visualize interaction;
symbol value=none i=r1 w=2;
proc gplot data=predfix;
  plot pred*cses=sector;
run; quit;

*plotting predicted values obtained from fixed AND random effects to visualize
  within sector variability in intercepts and slopes;
proc sort data=predrand; by sector school_id cses; run;
symbol value=none i=join color=black w=1 repeat=999;
axis1 order= 0 to 22 by 2;
proc gplot data=predrand; by sector;
  plot pred*cses=school_id /nolegend vaxis=axis1;
run; quit;

```