This research will investigate the problem of examination timetabling by implementing an established timetabling algorithm, while at the same time leveraging historical academic outcomes to improve retention. Potential academic outcome and retention predictors such as the timing & location of exams, the recovery period between exams, historical grades, year of study, accommodations, participation in intramural recreation, and use of sporting facilities, will be investigated for correlation to retention. Those factors most likely to improve retention will be incorporated into the quality score of candidate exam schedules for the purposes of selecting the globally optimal schedule while still adhering to traditional scheduling constraints. By leveraging the success of existing algorithms, and adding a wrinkle of complexity without overburdening the system, an improved examination timetable will be produced that is aimed at improving student success.