LIGHTHOUSE

Powered by N2N's illuminate

A Student Success Module for Academic Advising

Machine learning is transforming the way people work across industries, from farming to biotechnology.

However, for whatever reason, the field of higher education has largely been left out of this particular technological revolution.

It's true that higher ed has embraced basic internet age advancements like online teaching and learning—just consider the popularity of MOOCs, or Massive Open Online Courses—but when it comes to areas like admissions, registration, and advising, few institutions are taking advantage of the power of machine learning to help guide students through what can be an extremely time-consuming and confusing learning journey.

This is where N2N's **Lighthouse: A Student Success Module for Academic Advising** comes in.

Lighthouse is a predictive analytics program that's designed to help academic advisors gauge a student's progress toward their degree, see their current and expected performance in classes, and better identify risk factors for each individual student.

Using machine learning, Lighthouse can greatly improve an advisor's insights into where each of their advisees is in terms of grades, degree progression, and overall success. And this increased visibility can have significant positive effects on helping students not only stay in school, but graduate on time and in good standing.

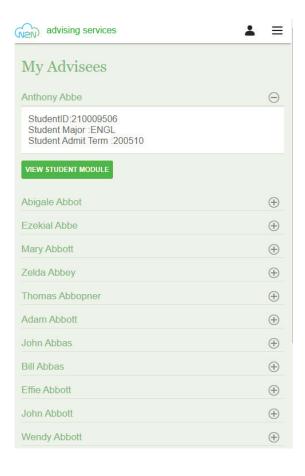Here's an overview of what Lighthouse offers.

Student Entry Profile

The Student Entry Profile is perhaps the most critical element of the Lighthouse module. It's this profile that provides the basis for the course recommendations given by Lighthouse (with a human advisor being the one to actually make those recommendations to a student, if he or she finds them to be accurate) as well as judging the risks for degree progression and success in various courses.

The Entry Profile is a profile of the student that is generated when he or she enrolls in their educational institution.

The profile is created using the following data:

1. Admissions application
2. High school transcript
3. Standardized test scores
4. Early alerts
5. Grades
6. Academic Progression
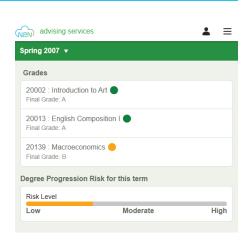7. Other behavioral indicators

This profile gives the student a risk percentage in several different subjects, from math to history to language arts. The profile is then graphically displayed in the Student Profile page in Lighthouse, along with the student's personal information, their curriculum, and their advisor contacts.

Student Grades

On the grades page, advisors can see the student's grades for each class. Additionally, advisors also see a "Degree Progression Risk" bar. This shows the impact that the student's grades for the current term are having on their overall degree progression, granting the student a risk factor of Low, Medium, or High.
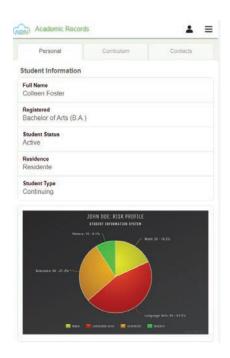
Registered Classes

Registered classes module provides a view of the courses the student is registered in the current term. The advisor can change the term to see the past or future registration terms as well.

The registered classes screen provides visible cues on potential progression risks for a student in the courses that the student is currently registered in. The progression risks are calculated based on the following

1. Student's entry profile: the profile of the student when he started with the institution. This is calculated based on the admissions application, high school transcript, standardized test scores, and other predictive indicators

2. Course complexity indicator: The complexity of a specific course or section based on the past grading history for that section, the average level of effort expected from the students, and other predictive indicators

3. Students behavioral factors: the behavior of the student in the course he/she is currently registered to. The behavioral factors include - student engagement in the classroom, student engagement in the LMS system, faculty feedback, early alerts, mid-term grades, etc.

Class Information

Advisors can drill down further in the Class Information module, which provides the student's contact information, class details, and a student summary.
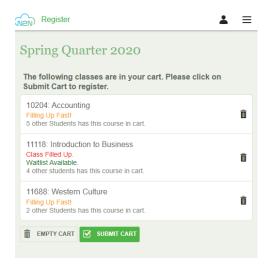
There's also another way to view the student's risk, with the Risk Summary. Depicted in pie chart form, this shows the student's overall risk, in terms of degree progression, their course-specific risk, and their predicted risk.

Shopping Cart Module

The Shopping Cart Module allows the advisor to see the courses that a student is interested in for the current term, along with their risk factors (calculated using the same data points: entry profile, course complexity indicator, and student behavioral factors).

Advisors can toggle between past, present, and future terms to get a more comprehensive view of the student's academic interests and progression.
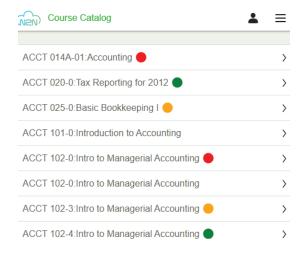

Course Catalog

The Course Catalog allows advisors to see every course being offered, with each and every course having that same visual cue to convey the level of risk for that particular student's profile.

This can be of immense help when it comes to recommending courses for students. This is not to say that students should not be taking courses that show a high- or medium-level risk, but to help advisors gain a better picture of how the student is succeeding overall, and how likely it is for them to succeed in the future.

For example, if the student is interested solely in courses that show a high level of risk, the advisor may recommend that the student switch one or two out for medium- or low-risk courses, to help prevent burnout and ensure continued degree progression. This, in turn, can increase the likelihood that the student will stay in school and graduate with a degree, rather than drop out because the courseload is too intense.

Machine Learning

The power of machine learning in higher education is something that all of us in higher ed should be considering. It's not just for advising, either—machine learning has many applications that, as with advising, can increase student retention, student success, and student graduation rates.

One inspiring story comes from a university that employed machine learning to identify a group of students who needed additional funding in order to remain enrolled.

By working with the data, the university's researchers were indeed able to identify several students that needed more scholarship funding—and even though the administration believed that keeping those students enrolled was only a slight possibility, in spite of additional funding, once the funding was deployed the retention rate for the school rose from 64 percent to about 90 percent. This was clearly a win both for those students, who otherwise wouldn't have been able to continue their education, and for the school itself.

At N2N, our mission is to help as many students as possible succeed in and complete their learning journey. Lighthouse is one of the latest tools we've created to achieve that mission.

For more information or a demo, contact N2N today!