Gupta College of Science

Independent Study Support (ISS) Program

**Purpose:** Experiential learning is a strength of the Gupta College of Science. This “learning by doing” pedagogical approach is exemplified in the nationally recognized high-impact practice (HIP) of undergraduate and graduate research. Mentoring students through research experiences has been shown to be incredibly effective in helping students connect to an institution and college, leads to increased retention of students, supports progression through the major, and leads to a unique skill set and increased experiences that are highly sought by external STEM employers. At its core, mentored research develops a student’s critical thinking skills, helps a student apply the knowledge of a discipline in a concrete way, and leads to opportunities for students to present their research, which greatly improves a student’s oral and written communication skills. These skills are at the core of a strong liberal arts education.

Currently, in the Gupta College of Science, students sign up for mentored research in any of the degree programs within the College through independent study with a faculty member. Students sign up for variable credit hours through the Instructional/Course Contract for Non-Traditional Study mechanism. These courses can count towards the degree and show up on the transcript for the student.

The primary limitation is that there are more students that are interested in pursuing these research opportunities than we have faculty available that can mentor these students. In addition, and very important, there is no current mechanism at CCU to support faculty for these credit hours. These mentored experiences are extra and beyond the normal load of the faculty member.

Below are the course designations per major for these independent study experiences:

- **Biology** – BIOL 399, 499
- **Chemistry** – CHEM 399, 499
- **Computing Sciences** – CSCI 399
- **Engineering Science** – ENGR 397
- **Marine Science (UG)** – MSCI 397H, 399, 497H, 499, ENVI 399, 499, MCES 397H, 399, 497H, 499
- **Marine Science (GRAD)** – CMWS 700, 702; CMSS 700, 702, 799
- **Math** – MATH 399, 499
- **Physics** – PHYS 399, 499
- **Psychology** – PSYC 399, 498, 499
- **Statistics** – STAT 399

The **Independent Study Support (ISS) Program** offered by the Gupta College of Science aims to better support and greatly expand these mentored research opportunities for students in support of our teacher-scholar model approach. The goals of this program are to:

- Support our faculty that mentor undergraduate and graduate students through research experiences
- Better support the long-term research efforts/projects of our faculty
- Greatly increase research efforts of the University and our College
• Increase the number of credit hours for student research at both the undergraduate and graduate level and help increase the number of faculty that are mentoring students in research

• Help the campus become an “exemplar for undergraduate research” as stated in our University strategic plan, Reach

• Support CCU’s new QEP: *Belong@Coastal: Building Student Achievement Through Inclusive Engagement*

• Increase external funding for CCU through mentored research

• Maximize campus resources available to support these efforts

• Overcome the issues/problems with the past “credit banking” system

Part of this program also includes the mechanism for faculty to form **VIP (Vertically Integrated Projects) teams**, if interested. VIP teams are peer-mentored research groups (that can include freshmen to graduate students) that focus on long-term research projects.

VIP is an award-winning mentored research idea that began 25 years ago at Georgia Tech and Purdue University. ([https://www.vip-consortium.org/](https://www.vip-consortium.org/)) Over the years, VIP has grown and expanded to form a non-profit alliance among colleges and universities worldwide. Currently, there are over 40 different universities and roughly 4500+ students involved with VIP teams across the globe. VIP has been shown to increase the pace of research innovation, boost graduations rates, allow for more inclusive experiences for research, and better prepare students for the workforce. For the faculty member, these long-term research project focused teams allow the faculty member to sustain his or her research as students graduate since the teams create a pipeline of talent from freshmen to graduate students. Having a VIP team is recognized now by agencies like NSF and others. VIP teams can help greatly increase the success in securing external funding since VIPs are setup to succeed in metrics like NSF’s broader impacts.

After visiting with VIP institutions at the 2022 AAC&U Transforming STEM Conference, the Gupta College of Science at Coastal Carolina University was invited to join the VIP Consortium in spring 2023 based on the distinctive and unique STEM programs we offer. The MOU was signed in May 2023 with our first VIP Teams soft-launched in January 2024. **CCU, through the Gupta College of Science, is the first institution in South Carolina that is part of the VIP Consortium.** Our version of VIP at CCU is modeled after “best practices” at other VIP institutions and the stipulations of the signed MOU.

**ISS Program Specifics – Credit Hour Formula**

30 credit hours accrued by a faculty member = one (3 credit hour) course release or funds to be used for allowable research expenses as described below.

**Undergraduate students** – 1 c. h. of independent study enrolled = 1 c. h. accrued by faculty member

**Graduate students (M.S.)** – 1 c. h. of independent study enrolled = 1.25 c. h. accrued by faculty member

**Graduate students (Ph.D.)** – 1 c. h. of independent study enrolled = 1.5 c. h. accrued by faculty member
Example: If a Ph.D. graduate student signs up for 6 credit hours of independent research with a faculty member in a given semester, that would equate to 9 credit hours of effort accrued by that faculty member.

- Graduate students typically sign-up for more credit hours per term than undergraduate students, especially Ph.D. students. This calculation allows for an even greater accrual for the faculty member to help recognize the level of involvement required to successfully mentor a graduate student. As this program matures, this calculation will be re-evaluated to help support the highest possible level of mentorship.

**1 credit hour enrolled by the student = 48-50 hours of work/term**

*The ISS Program is available for all faculty at all ranks (NTT and TT).*

Each spring semester, a faculty member will be notified by the Dean’s Office if he or she has passed the 30-credit hour (c. h.) accrual point for independent studies. With that notification, the faculty member will be provided the following options.

The two options are:
- **One 3-credit hour course release***
  - To be considered/applied in the following spring semester or subsequent fall semester. For example, if the faculty member chooses this option after being notified in the spring 2024 semester, the dean and chair will work with the faculty member to see if this can be implemented in spring 2025 or fall 2025.
- **$2000 – to be used for allowable research expenses** (i.e., research supplies, research equipment, publication costs, student salary to conduct research in the faculty member’s lab, student travel, faculty travel) – funds will be deposited into a “17” account for the faculty member.
  - If this option is selected, the funds should be able to be applied to the faculty member’s account in the same spring semester. For example, if the faculty member chooses this option after being notified in the spring 2024 semester, the funds can be moved into the faculty member’s account in spring 2024.

*Per the Faculty Manual, teaching load is determined by the Dean in consultation with the department chair. In some cases, if a load reduction cannot be met in a given academic year (i.e., due to lack of available teaching associates or other faculty to teach the course, or if the faculty member is already at the lowest teaching load allowed), the faculty member must choose the research funds. It should also be noted that faculty can only reduce their teaching load in the Gupta College of Science down to a 2:2 load for a given academic year through this program or any additional means such as the course buy-out process. This allows us to maintain our primary focus, which is on teaching, while also supporting excellent scholarship. Reductions in teaching load due to administrative duties are separate from this calculation.
VIP Teams – Specifics and Benefits

- Minimum of 6 undergraduate/graduate students in a research group per semester.
  - Projects can be multidisciplinary, should be team-based, and can include freshmen to graduate students.
  - Teams can have multiple faculty advisors. In this arrangement, per semester, there will be one faculty member that is the instructor of record to enter the grades for the research experience. The faculty co-advisors will meet at the beginning of the semester with the Associate Dean for Experiential Learning and/or the Dean to determine the percentage of effort for all the students mentored in a given semester. Based on those percentages, the credit hours accrued from the mentored students for the semester will be multiplied by these effort percentages for each faculty member and tabulated.

- Maintaining this level of mentored research will allow faculty to accrue at a lightning pace the maximum of independent study hours possible in a given semester thus allowing the faculty member to fully utilize the ISS Program, its benefits, and the additional benefits of the VIP program.

- VIP Teams will be highlighted on a featured College VIP website and will be marketed regularly on social media and in student orientations, etc., to aid in the continual recruitment of students for the VIP faculty mentors and to bring recognition to the outstanding research of the VIP faculty in our College. The GCOS VIP website will also appear on the VIP Consortium website, presently hosted at partner institution Georgia Tech.
  - GCOS will maintain our VIP website similar to other VIP institutions. (i.e., https://www.boisestate.edu/vip/). Scroll down the Boise State site to see how research groups are marketed.
  - Being featured on VIP website will provide ease of access for interested students (as early as freshmen) to apply and contact faculty member(s) to join the group according to faculty member’s requirements.

- VIP students and faculty mentors will be formally recognized at key College events and/or ceremonies as being a part of a VIP team (e.g., graduations, end of the year College celebration events).

- Students and faculty mentors will receive a special VIP pin to wear on academic regalia at formal events.
  - Students must have participated in a VIP team for at least three semesters and have been given increased responsibility by the mentor as they mature in their research skills to earn the honor of receiving the VIP pin and designation.

- Faculty will be recognized as leading a VIP team on their annual faculty activity reports for this significant research mentoring effort in scholarship/research.

- VIP faculty member(s) may request to receive a classroom for a group meeting and set time of week for meetings (if desired) – may be listed in course schedule as well, if desired.

- Faculty members will be provided VIP faculty resources that will help the faculty members have established support items like syllabi that lay out how larger research teams are managed (These have been developed by other VIP programs in the VIP consortium).

- VIP faculty members will be provided with resources from the VIP consortium including a chance to attend the VIP annual meeting at least every other year for professional development.
• Additionally, the College plans to bring in VIP speakers from other VIP institutions in the consortium to share best practices and to meet with VIP faculty and the general faculty.
• VIP teams will also be connected to other VIP teams within the consortium.
• On the IS contract, VIP will be written in the title of the project so that it shows up on the student’s transcript. This is a great conversation starter for graduates interviewing for jobs and graduate programs, allowing them to describe skills gained while making an independent contribution to a larger, long-term, team-based project.
• Students in VIP groups must follow an established VIP syllabus that requires students to actively participate in the team-based research during the enrolled semester.
• Every effort will be made to ensure that there is basically no administrative burden placed on faculty for participation as a VIP team. We may need VIP team leaders to help provide great student stories and research outcomes so that this can be shared more broadly with various audiences and with donors. All marketing and recruitment advertising, etc. will be managed by the dean’s office.

Overall Program Requirements and Important Exceptions:

• If 399 or 499 courses above are used for internships, these do not count toward this ISS program. The ISS Program is only for faculty mentored research experiences.
• Capstone courses with regular enrollment taught by faculty in-load are not part of this program. Examples are courses like MATH 390 or 490, ENGR 399, 499, PSYC 497/L, MSCI 498
• 399 or 499 courses that are mentored research will not count as in-load for the faculty member. Independent study credit hours generated from these courses will count using the formula above for the ISS program.
• 399 and 499 course enrollments in the summer do not count towards a faculty member’s total accrued credit hours. Only faculty mentored independent studies that take place while the faculty member is on contract (fall and spring semesters) will count. This is because these hours are extra and above the normal load of faculty. It is more typical that faculty support their research in the summer through grants and often faculty will have grant funds to support their individual salary in the summer. Students may sign up for an independent research course in the summer if needed for degree progression/graduation and the faculty member could be compensated for this course according the Provost’s policy for summer teaching.
• Students can be hired in the summer as research assistants and funds from the ISS Program could be used to support student researchers in the summer.
• Course releases, if selected by the faculty member, will be reviewed and granted by the Dean in consultation with the respective department chair. If teaching associates (TAs) are required, these funding requests will be submitted to the Provost’s Office for approval.
• If a faculty member chooses the course release option and no TA is able to be located and hired to fill this release, the faculty member that has earned the release could be paid as an overload to teach the class, if that person is willing, instead of receiving the research funds for that year. This is only approved once for every three times a faculty member crosses over the 30-c. h. threshold.
• If a faculty member chooses the course release option and no TA is able to be located and hired to fill the release, other faculty in the department can be offered the course and paid as an overload.
• Any student registered for a course must meet the 1 credit hour = 48-50 hours of work/term. Therefore, if a student signs up for 3 credit hours of independent study, that would equate to 144-150 hours of work/term. The faculty member must be mindful to sign up students appropriate to the effort expected and needed.
• **Special requirement for VIP team continuation based on membership:** If a VIP team drops below 6 students in either a fall or spring semester of a given academic year, the faculty member’s group will still be listed as a VIP on all marketing websites for the subsequent academic year (fall and spring semesters) to aid in helping that group reach or pass the 6-student mark. After that additional year, if the group remains under 6 students, the VIP link for that research group will be temporarily disabled until the membership of that team is above the student minimum.

**Program Implementation**

• A record of independent study hours per faculty member will be maintained by the GCOS Dean’s Office based on yearly data provided by IRAA.
• This program will be implemented and supported by the GCOS Dean’s Office.
• Program specifics can be changed at any point by the GCOS Dean’s Office in consultation with College Council and the Provost’s Office to help ensure this program is sustainable.
• All students that plan to be registered for any 399 or 499 IS course must be signed up at the beginning of each semester (fall and spring) within 3 weeks after the first day of classes to be counted towards the ISS program.

**Scenarios: Potential Groups (these illustrations are provided to show how quickly a faculty member could rise to the 30-credit hour threshold)**

• **Group A: 3 undergraduates mentored (Not VIP)**
  o Each undergraduate does 2 c. h. courses in fall and spring semester. That is 6 c. h. accrued by faculty member after each term and 12 c. h. total for year. If that group size continues, it would take a faculty member 2.5 academic years to hit the 30-credit hour threshold.

• **Group B: 2 PhD students, 1 MS student, 3 undergrad students (VIP Team)**
  o For a given fall semester, the students signed up for credit hours as follows:
    • 1 Ph.D. student – 4 credit hours research x 1.5 = 6 credit hours accrued
    • 1 Ph.D. student – 6 credit hours research x 1.5 = 9 credit hours accrued
    • 1 MS student – 3 credit hours research x 1.25 = 3.75 credit hours accrued
    • 1 UG student – 1 credit hour research = 1 credit hour accrued
    • 1 UG student – 1 credit hour research = 1 credit hour accrued
    • 1 UG student – 1 credit hour research = 1 credit hour accrued
    • Total hours for fall semester = 21.75
• In this scenario, if this continued after the spring semester, this faculty member would cross the threshold and have a balance of 13.5 credit hours towards the next 30-c. h. threshold.

• **Group C: 10 UG students (VIP Team)**
  o Each student signs up for 1 c. h. of research = 10-c. h. accrued in one semester, 20 c. hours for an academic year. It would take 1.5 academic years to pass the threshold if that level continued into year 2.