Garrett College

Request for Proposals Number: RFP-1601

Provide Architectural and Engineering Services for STEM Building Renovation and Addition

Response Due Date
Monday, November 30th, 2015 at 12:00 P.M. Local Time

Vendors mailing bids shall allow sufficient carrier delivery time to ensure timely receipt of their bid prior to the deadline. Any bid received in the Business Office after the submission deadline will be returned unopened. Electronic copies will not be considered responsive to this RFP.

For additional information and assistance please contact Katie Graham
301-387-3036 or gcrfp@garrettcollege.edu

KEY INFORMATION SUMMARY SHEET

Garrett College

Request for Proposals Number: GC-1601

Provide Architectural/Engineering Services for STEM Building Renovation and Addition

RFP Issue Date:	Monday November 30th, 2015
Project Location:	200 Building 687 Mosser Road, McHenry, MD 21541
Contact:	Katie Graham Assistant to the Dean of Administration and Finance 687 Mosser Road McHenry, MD 21541 Office Phone: (301) 387-3036) E-mail: Katie.Graham@garrettcollege.edu
Documents Available at:	Respondents must visit the eMaryland Marketplace website at https://emarylandmarketplace.com or http://www.garrettcollege.edu/purchasing On campus walk-through by arrangement. Appointments by e-mail or phone must be prior to Monday 23rd November 2015 COB. Proposals are to be sent to: Katie Graham, Garrett College Business Office, 687 Mosser Road, McHenry, MD 21541
Closing Date and Time:	Monday November 30, 2015 at 12:00 p.m. local time.

RFP to Provide Architectural and Engineering Services for STEM Building Renovation and Addition

Garrett College is soliciting architectural and engineering services for the design of the 200 building renovations and additions to accommodate the science and engineering programs at the College. The 200 Building was constructed in 1979 and was originally a mining technology center, in 1980 it underwent a renovation which is reflected in the current building layout and now serves as offices and classrooms for Continuing Education and Workforce Development. The project incorporates Biology, Chemistry, Physics, Earth Science and Engineering labs and classrooms along with offices for the supporting faculty and student spaces. Design services are anticipated to begin in January 2016 and construction is expected to begin in July 2016 and is expected to be completed by June 2017.

Firms or individuals interested in providing design and engineering services must submit printed versions of **a cover letter, an original and three (3) copies of a technical proposal, and an original and three (3) copies of a cost proposal**. The technical proposal should identify person(s) acting as Project architect, civil engineer, mechanical/electrical engineer and LEED certified design professional as appropriate. The submission should fully explain your ability to meet the required design goals and values, architectural considerations, and other design criteria, a proposed time schedule, your interest in the project and your firms experience with similar projects.

Complete documentation must be **submitted to Katie Graham**, Administration and Finance Department, Garrett College, received **no later than 12:00 p.m. EST, Monday November 30, 2015**. Refer questions regarding this advertisement or project scope to gcrfp@garrettcollege.edu or 301-387-3036.

All proposals will be evaluated by a Selection Committee, and said Committee, will recommend the three (3) most qualified firms. The Committee will rank proposals and submit them to the Department of General Services for approval. Prior to the submission of the evaluation results to the Department of General Services, the College may elect to interview the three finalists in an on-site interview.

1. PROJECT SCOPE

1.1. The Existing Building 200

Building 200 was constructed in 1979 as a mining technology center. During the 1980's a renovation was executed to accommodate the current functions. The building serves as the primary location for the Continuing Education and Workforce Development (CEWD) offices, Institutional Research (IR) office, the President's Office, one (1) conference room, and nine (9) classrooms are housed in this building. Except for four (4) classrooms, which will be restored in the proposed renovation/addition, all of these functions will permanently move to other locations on campus. The CEWD office in this building will be temporarily located to the Garrett Information and Education Center (GIEC) until the second Garrett College renovation, listed in the Campus Facilities Master Plan, is complete. Two classrooms will be available in this building for CEWD's use. CEWD also has classrooms available during the day at the Career Technology Training Center (CTTC) in Accident, Maryland. The President's Office will also be temporarily housed in the GIEC for the same time frame. The IR office will be housed with the IT Department; this will be a permanent move.

The existing Building 200 encompasses 15,000 GSF with 10,022 NASF devoted to primary functions. Other than a roof replacement in 2002, the building has not been improved for two decades and is in need of a complete modernization. The building will not be occupied during the renovation.

Figure 1-1: Existing Building 200 Floor Plan

Building 200 is a one-story structure consisting of concrete footings, concrete slab on grade, steel columns, exterior bearing walls and pitched steel joists. The building envelope is comprised of a brick masonry veneer with 2 inches of rigid insulation and 8 inch CMU backup. The roofing is a built-up roof system over rigid insulation on metal deck. There is an enclosed, conditioned passageway that connects building 200 and 300 (see the Existing Building 200 Floor Plan). This element may or may not be incorporated into the new project depending on design.

1.2. Purpose and Function of the Project / Renovation & Addition

The purpose of the project is to provide Garrett College with a 21st Century learning environment for career-ready science, technology, engineering, and math (STEM) education and training. The project involves renovations and additions to Building 200 to accommodate the science and engineering programs at the College. Functions include teaching labs for Biology, Chemistry, Physical Sciences and Engineering; classrooms; administrative space; and student lounge / collaboration space typical of contemporary collegiate STEM facilities. The overall project scope includes 12,630 net assignable square feet and 21,500 gross square feet. Major functional elements are as follows:

- One Biology teaching lab and associated prep and storage space
- One Chemistry/Microbiology teaching lab and associated prep and storage space
- One Engineering/Robotics teaching lab and associated prep and storage
- One Physical Science/Earth Sciences teaching lab and associated prep and storage space
- Four classrooms and storage
- Faculty offices for twelve (12) positions and associated administrative support space
- Student lounge

It is the intent of Garrett College to create an inspirational, functional, maintainable, and attractive facility that will serve the College for at least the next 30 years. The College requires innovative design that also provides the best economy both in design, sustainability and construction as well as providing flexibility to adapt the building for future changing needs.

Sizes for the individual functional components were established by the projected student capacity and the application of best practices in the design of contemporary learning environments for STEM education. Such learning environments (labs and classrooms) demand a degree of flexibility to accommodate appropriate furnishings, emerging technologies and pedagogical approaches requiring a combination of recitation and project based, small group learning sometimes within the same instructional period. Proposed sizes for this project are adequate for Garret College and slightly below the standards recommended by the National Science Foundation via programs such as Project Kaleidoscope and the Learning Spaces Collaboratory (LSC), as well as other standards such as the Whole Building Design Guide. In addition, sizes proposed are consistent with many recently completed capital projects within the Maryland Community College system.

Given the condition of Building 200 and the incorporation of spaces for science, the scope of the project includes the complete replacement of all architectural and engineering systems with the exception of the superstructure and the envelope. The architectural/engineering consultant will perform an assessment of the structure and the envelope to assure their integrity and recommend any necessary repairs. New roofing will be likely be required and new window openings are desired by the college to increase natural

light, and the existingcampus boiler plant has capacity to provide hot water for heating. Otherwise completely newinterior architecture, HVAC, plumbing, fire suppression and protection; electrical service, distribution and lighting; and communications systems infrastructure is required. A 6,100 gross square foot addition will be required to accommodate all required functions. This addition, by virtue of its location, will house the new entry and associated spaces. The architectural/engineering consultant will otherwise work with the college to best distribute functions betweenthe existing and new construction

1.3. Site Development

The college has created a new campus vision that establishes the North edge of the campus along Bumblebee Road as the primary arrival point and "front door" of the campus. Buildings 200, 400, 600 and 800 all have a presence on Bumblebee Road and are all slated for renovations and additions per the FY 2016–2020 master plan. These projects taken together will transform the physical image of the campus. Building 200 is the first project undertaken as part of this plan. At the time this vision was created, an addition to Building 200 was not anticipated. Given the addition and in keeping with the new campus vision, the College wishes to establish a new entry for Building 200 at its northeast corner. This area of the site offers adequate room for an addition as well as the opportunity to establish a new image for the building addressing the existing parking lot and Bumblebee Road. Therefore site development includes the building addition with walkways and landscape architecture and features appropriate for the main entry to the building and connections to parking. In addition, site development should anticipate the renovations planned for the other buildings, and create appropriate high quality outdoor spaces and pedestrian connections befitting a college campus. No additional parking is required and the utilities serving the existing building will accommodate the proposed renovation and addition.

Figure 1-2: Garrett Campus Vision

2. BUILDING DESIGN AND SPACE CHARACTERISTICS

2.1. Design Goals and Architectural Values

The design of this project shall be undertaken with the objective of providing a fully functional facility. Generally, design solutions shall be based on the followingvalues:

- Provide leading edge, technology rich learning environments for Garrett College students and faculty which are informed by the science of learning and responsive to the evolving trends in science education by accommodating multiple modes of learning and varieties of pedagogical methods and strategies
- Support interdisciplinary interaction and engagement among students and faculty within programs housed in the facility as well as with the broader community
- Create an inspiring, welcoming and appropriate image and identity for STEM and programs at Garrett College by celebrating science and encouraging exploration and innovation
- Enhance the surrounding campus environment with outdoor spaces and pedestrian connections that integrate with the fabric of buildings and spaces
- Support STEM programs at Garrett College for years to come via facilities which are durable, maintainable, sustainable and flexible

2.2. Architect/Engineer (A/E) Responsibilities

The Architect/Engineer (A/E) shall be governed by the Procedures Manual for Professional Services, issued by the Maryland Department of General Services. In case of conflict pertaining to code and regulatory compliance the most stringent code and compliance regulations shall apply and be based on the latest editions. The A/E shall be responsible for compliance with program requirements, building codes, completeness and accuracy of construction documents, and the adequacies of details for constructability/suitability; regardless if the College has signed the drawings or not. Prior to design the A/E shall meet with the College to review and fully understand all campus design standards of the project.

2.2.1. Consultant

Due to the rapid changes in telecommunications and information technologies, the A/E may make recommendations on items which may not have been considered in this program.

2.2.2. Code and Regulatory Compliance

The project design shall comply with all provisions of the Building Codes of the State of Maryland and the National Mechanical Code. These codes are defined to be inclusive of the current International Building Code, the NFPA national fire protection codes, MOSHA regulations for environmental health and safety, all regulations governing construction of facilities for the handicapped including Section 504 and ADA requirements, and ASHRAE standards for energy conservation in new building design. Specifically, the architect shall be familiar with Article I, Administration and Enforcement, issued by the Department of General Services, and all other applicable codes, regulations and laws including any that are due to become effective in the immediate or nearfuture.

Requirements of the State of Maryland for fair wage rates, use of steel manufactured in the United States, minority enterprise participation, and any other State, Federal, or Local government regulatory mandates associated with the use of State or Federal funds shall be clearly communicated to the contractor in the bid and construction documents. Compliance checklists will be prepared by the contractor and

submitted to the A/E and College with the project schedule at the beginning of the project.

2.2.3. Permits

All permit requests and required approvals, including Health Department inspections and approvals, shall be applied for and obtained by the A/E or contractor on the College's behalf, and the costs for these permits shall be included in the A/E fee or the contractor's fee.

2.2.4. Existing Drawings

All known existing information on the site, existing facility, and utilities is available for review at the Facilities Management Office of the College. The accuracy of this information is not guaranteed and ultimately the A/E is responsible for verification of all critical information.

2.2.5. Preparation of Drawings and Plans

The A/E shall provide all schematic and design development drawings with labels for each space indicating the NASF programmed and the NASF actually provided by the design. In addition, the architect shall provide a summary comparison of programmed and provided spaces, separate from the drawings. These summaries shall be kept up-to-date and current at each review through the approval of design development. In addition, the architect shall add a cumulative log listing of all spaces with the construction documents to the summaries provided with the approved design development plans, so that a comparison can be made of the area of each programmed space at each stage of the design from schematics through construction documents. Room numbering on drawings shall be in accordance with State standards and be approved by the College.

2.2.6. Building Space Efficiency

The net assignable square feet in the design of the complex may not exceed the total net assignable square feet specified in the program when approved by the Department of Budget and Fiscal Planning, and building net-to gross efficiency shall be within the limits prescribed by the Department of General Services. The approved program represents the maximum space allocation for NASF that the State of Maryland will permit for this facility. The A/E must make every effort to execute a design solution within this limitation. Exceptions to this requirement are allowed under some circumstances and must be approved by the College and the Department of Budget and Management.

2.2.7. Furniture and Equipment Layouts

The A/E shall provide drawings with complete layouts for furniture, equipment, and the location of critical items such as utility trenches. Drawings should be provided as required to insure/confirm proper fit. The space sizes established in the Part II Facility Program place constraints on the size and quantity of furniture and equipment that the spaces can accommodate. At the design development phase the A/E shall show each space as equipped and resolve with the College all discrepancies regarding function and fit. Any changes, after the design development phase, effecting physical layout of furniture and equipment will require updated layouts. Room sizes may be adjusted as required with the approval of the College and DBM.

2.3. ARCHITECTURAL DESIGN CONSIDERATIONS

The design should have distinctive qualities, yet be compatible with existing campus architectural motifs. The general style and appearance of the building should be compatible with the existing campus architecture, but with the quality level exhibited by the new Recreation Center. The goal should be to

design an attractive and functional building for the campus which is prominent, and improves the general image of the college. The internal appearance of the facility shall present a pleasant and inviting atmosphere. The architect should consider the value of varying textures and colors in interior design as well as transparency into classrooms and labs from corridors. In developing the building design, the A/E shall provide plans and specifications including structure, roofs, building envelope, accessibility, environmental health, circulation, interior fitness, acoustics, rest rooms, hardware, electrical water coolers, signage, and custodial spaces.

2.3.1. Structure

The A/E will evaluate the existing structural system and make any repairs or modifications necessary to accommodate the proposed functions.

2.3.2. Roofs

Given the likelihood of considerable new penetrations for ventilation, an entirely new roofing system may be required. The A/E will provide a roof system of a design and material approved by the College and the Department of General Services. The A/E will specify roofing materials with these characteristics: (1) long life, (2) high insulation values, and (3) high wind-lift rating, (4) built-up roof, 4-ply system applied with a high-quality bitumen adhesive, and (5) a 30-year guarantee of the entire system including all flashings/sheet metals, as well as the roofing material. The A/E will give particular consideration to a roofing system design that compliments the building's structure. The design shall require protecting roofs with walkways and concrete pads around and under roof top equipment, as appropriate, providing easy access to the roof for maintenance personnel. The design should provide interior mechanical spaces for system equipment if cost is feasible, or screening for exterior site (location to be approved by the College).

2.3.3. Building Envelope

The A/E will provide interior foyers and vestibules at building entrances for energy efficiency and weather protection. The A/E will provide waterproofing and weatherproofing of all exterior doors including weather stripping, sill weatherguard, water proof threshold, lock guard, heavy duty hardware, and heavy duty overhead door stop. The A/E will provide new windows where appropriate to provide natural light to occupied spaces. The A/E will replace existing windows. The College requires windows of double pane thermal glass, with insulated aluminum frames containing sliding or double-hung operable lite panels, and with self-storing screens. The design shall provide for window treatments providing sunlight control and room darkening as appropriate for the internal functions. Alternate glazing or window types may be considered for use with the approval of the College. The A/E will maximize building thermal efficiency by providing insulation on perimeter walls and roof. The A/E will assure watertight building above and below grade.

2.3.4. Accessibility

The design will meet all criteria of the Americans with Disabilities Act, including but not limited to: side transfer, rest rooms, entrances, doorways, elevators, connecting corridors, classrooms, and offices, furnishings and equipment. In some areas ramps may be used in place of stairs to accommodate level separation between the building and exterior ground level. The design shall provide accessibility for the visually and aurally impaired. The A/E team shall provide a certification of ADA compliance at the project's completion.

2.3.5. Environmental Health

The architect shall take care to utilize sustainable design practices and to create a design that achieves LEED Silver Certification.

2.3.6. Circulation

The functional objectives of the major components of the complex must each separately be served, and the overall objectives of the complex must be served by the circulation patterns established in the design. The corridors shall be appropriately sized and located to provide ease of movement throughout the complex. Careful attention shall be paid to the varying circulation patterns of different constituencies including students, staff, and visitors. Storerooms and other similar facilities should be located with consideration for delivery of heavy materials and equipment as required by the function of the room and its relationship to shipping and receiving facilities. In addition, these areas shall be designed with due consideration for the maximum ratio of net assignable to gross square feet.

2.3.7. Interior Finishes

The A/E will provide ceilings as identified in the room data sheets. Consideration can be given to exposing roof structure provided that code requirements are met and that acoustics are appropriate in the teaching spaces. The A/E should select flooring materials to permit easy cleaning as well as for functionality, acoustical properties, long useful life, and aesthetic qualities. The design shall provide for all interior spaces, including mechanical and utility areas, to be painted and/or provided with other appropriate wall coverings, completely finished. Materials and finishes, both interior and exterior, shall be selected to meet the following five criteria: (1) aesthetic considerations, (2) durability, (3) acoustical requirements, (4) ease of maintenance, and (5) conservation of energy. Special attention shall be paid to areas that are likely to experience high traffic (corridors), water or chemicals (labs), and other special use areas. Special care shall be taken to include design solutions at building entrances for the removal of dirt, sand, salt, and moisture from rain or snow.

The A/E team shall provide a complete color scheme for the project during the construction document phase. Minimum specifications for any carpet used shall include static protection, satisfactory Radiant Panel and Smoke Chamber test results, satisfactory Steiner Tunnel test results (ASTM E84), and light-fastness.

2.3.8. Acoustics

The A/E will give careful thought design of the building regarding the acoustical properties of each functional space. The architect shall seek to provide optimal hearing conditions with means provided to preclude unwanted sounds from entering the space, or of disrupting the desired acoustical environment. Separation of noisy from quiet spaces shall be provided in the design. The architect will specifically consider the transmission of sound through ceiling spaces, over partitions, and through mechanical systems; and provide dampening devices needed to achieve acceptable noise levels. The A/E will comply with ADA requirements for the hearing impaired, including TDY for pay phones, hearing loops, etc.

2.3.9. Rest Rooms

The College requires interior finishes of ceramic tile for floors and walls. It requires that adequate space be provided to accommodate heavy-use traffic flows, with specific attention to placement and number of towel dispensers, soap dispensers, wash basins, sound insulation, and accessibility for the disabled. The mechanical engineer shall design a system with exhaust fans for adequate air replacement in each rest

room, with a control point for the Energy Management System and/or with sensing devices. Occupancy sensors for energy savings are to be provided for room lighting control. The College requires that all toilet spaces be provided with self-priming floor drains and floors appropriately sloped to the drains that meet all State and County code requirements, and comply with ADA requirements for handicapped access including stalls that accommodate side transfer.

2.3.10. Hardware

The A/E will select exterior and interior door hardware for consistency and compatibility with the College's standards. Keying shall be per College standards - exterior and interior to be keyed to the existing systems. The design shall comply with ADA standards for door handle styles and textures and provide for hardware of aesthetically consistent and high commercial/ institutional quality. Lever doorknobs shall be of a heavy duty grade. All items in public spaces shall be secured with tamper proof screws.

2.3.11. Electrical Water Coolers

The A/E will provide for electrical water coolers (accessible to the handicapped) for drinking water in the corridor areas near each restroom.

2.3.12. Signage

All signage shall be consistent with campus standards. The A/E will provide exterior signage with decorative lighting to identify the building. The A/E shall provide for an internally-lighted campus directory map graphic sign (art work provided by the College). The A/E will specify the requirement for a bronze building dedication plaque and interior signage that shall include ADA required raised-letter room identifications located next to all space entrances (per ADA specifications). The A/E shall design all interior signage to be of a consistent aesthetic quality and style that is clearly readable and obvious to first-time visitors to the campus and that is consistent with College standards. The signage shall provide a systematic method of determining the location of functions housed in the building. It shall include fire evacuation signage, directions to major functional areas, as well as numbers for each room having egress from circulation space. Adequate space shall be provided for the attractive display of building directories at the entrance to the building. The directories shall include floor plans. Also, the A/E shall include an appropriate area in the main lobby for exhibits and donor plaques.

2.3.13. Custodial Spaces

The A/E shall design a facility that provides rooms included in the building's GSF, but not NASF, that are dedicated to janitorial or custodial equipment and supplies storage and maintenance. These janitorial closets shall be provided for each floor, minimum and shall contain the following features: cold and hot water, floor-mounted mop sink and drain, space to store buffer, vacuum cleaner, custodial cart, two (2) folding tables and four (4) folding chairs, shelving for cleaners, paper supplies, light tubes, and related custodial supplies, mop hooks, easily cleaned wall and floor surfaces, and an exhaust fan with an appropriate control. In addition, a storage space for custodial supplies shall be located near each loading dock/service entrance.

2.4. ELECTRIC & LIGHTING DESIGN CRITERIA

2.4.1. General

The design of the building electrical systems shall comply with all applicable codes, standards, and good engineering practices such as International Energy Conservation Code, ASHRAE, and the National Electric Code. The building shall be designed with provisions for lighting, emergency, receptacle and HVAC power, and life safety. Building power shall be segregated to the separate load classes and sized in accordance with ASHRAE. All electrical power systems shall be encased in galvanized steel conduit and properly supported from the overhead structural steel. Conduits shall not be buried in the slab of the building unless it is the primary underground feed from the building transformer to the main distribution panels. Underground electrical conduits shall be Schedule 40 PVC encased in concrete. Motors shall be premium efficiency and meet IEEE standards for Variable Frequency Drive compatibility.

2.4.2. Emergency Power System

The emergency power system shall include a status monitoring system with annunciation at the building's management system. Emergency power and protection equipment will be provided to support the life safety, emergency, and fire protection requirements. An emergency generator should be provided that is sized to handle emergency loads; i.e., fire pumps, emergency and egress lighting, fire alarm requirements, telephone, and security systems. A sub-base, diesel fuel tank, automatic transfer switch with provisions for manual bypass, weatherproof housing, and residential grade muffler should be specified.

In areas where it is expected that computer use will be intensive, the Consultant shall evaluate the requirement for the provision of an Uninterruptible Power Supply (UPS) system to protect any non-interruptible loads designated by the College. An equipment list and power requirements of any critical loads that should be on the generator needs to be established with approval of CAP and during the early stages of design development.

2.4.3. Lighting

Design of the lighting shall be in accordance with the latest engineering practices and IES recommendations to meet the standards for quality and energy efficiency. The lighting layouts shall be coordinated with the architectural design so as to control interior and exterior brightness and glare.

The building lighting systems shall meet the requirements of International Conservation Code and ASHRAE, point-by-point lighting analysis is required for most spaces. The contractor shall optimize the use of natural daylight and provide appropriate lighting controls. Occupancy sensors are required for lighting control in most areas and shall include auxiliary dry contacts for connection to the spare auxiliary dry terminals on the DDC terminal equipment controllers. The actual building lighting loads shall be used to size the electrical system and HVAC system.

In general, fixtures shall be located with regard to predictable or unpredictable position or orientation of desks, location of chalkboards, location and proximity of windows, existence of visual display units and photometric characteristics of the luminaries. Learning resource areas shall be accommodated in a similar manner in accordance with IES recommended design practice. The lighting systems in these areas shall also be designed so that lighting levels can be adjusted for audio/visual presentations. Rooms with high ceiling spaces shall be provided with suspended direct/indirect

luminaries. Exit signage shall be illuminated with LED fixtures. Lighting power densities for the various areas of the building shall comply with applicable guidelines.

In addition to energy efficient lighting fixtures the selected contractor shall consider the use of automatic lighting controls, exterior and interior time controls, and occupancy sensors. The contractor shall also analyze the applicability of day lighting controls to turn lights off in response to natural light availability.

2.4.4. Lightning Protection System

A risk assessment will be performed in accordance with NFPA 780 to determine whether a lightning protection system is recommended. The lightning protection system, if provided, will be designed and installed in accordance with NFPA 780, and be certified with a UL Master Label.

2.5. TELECOMMUNICATIONS SYSTEM DESIGN CRITERIA

Today's high-technology buildings have increasingly sophisticated users with ever expanding communications systems requirements. These information technology users need faster and wider access to a variety of media for the exchange of information. Today's cabling system requirements include high speed optical fiber and unshielded twisted pair (UTP) copper transmission systems; voice communications systems requirements supporting data transport systems utilizing Fast Ethernet, and Gigabit Ethernet; and audio, video, and audiographic teleconferencing systems utilizing state-of-the-art cameras, projection, sound systems, and other multimedia equipment. In general—ubiquitous connectivity via wired and wireless systems are required with the capability for flexibility and to accommodate changes over time.

Design includes the incorporation of readily accessible cable distribution system which includes pathways from all wiring hubs to all appropriate locations in the facility as determined by the College. Cable access from the campus distribution system to the main telecommunications/data room in the new facility is to be considered as part of the distribution design. The scope of this responsibility shall include the actual elements providing pathway and access of the distribution system as well as any cabling, terminations or equipment required to connect the Distribution Center to the new spaces.

2.6. MECHANICAL SYSTEMS DESIGN CRITERIA

2.6.1. HVAC Systems

All HVAC design shall conform to the requirements, recommendations, and standards established by NFPA, ASHRAE, and SMACNA. Code requirements or BOCA shall apply. Indoor design conditions shall be based on each space's use requirements and its class of occupancy. Year round thermal, humidity, and air quality control of the various multipurpose and meeting environments will be provided, including ventilation and exhaust capacities consistent with applicable codes and standards. HVAC systems are to be adequately zoned, providing controls appropriate to space uses and systems should provide the flexibility to accept future changes in the configuration of spaces and space use.

2.6.2. Ductwork

Ductwork shall be designed in accordance with the International Energy Conservation Code, ASHRAE, and SMACNA. The ductwork shall be of appropriate class, thickness, sound lined and insulated to minimize fan horsepower, minimize sound transmission, meet the leakage requirements for the class of duct and minimize moisture and heat transfer. The ductwork shall be provided with access doors for inspection and duct cleaning. The ductwork shall be galvanized steel from the air handling unit to the terminal devices.

Insulated flexible ductwork may be used on the low side of the terminal devices to the diffusers provided the runs are limited to providing flexibility in diffuser to ceiling grid alignment. Return air shall generally flow through ceiling plenums and into return air ducts. The return air ducts shall be extended into the plenums in order to provide balanced flows throughout the building. Air flow at the diffusers shall be at a minimum or no noise level. In addition, the design drawings shall identify the CFM at each diffuser and the final testing of the system shall meet these design levels.

2.6.3. Ventilation

Ventilation shall be provided in accordance with International Energy Conservation Code and ASHRAE. The ventilation rates shall be based upon the prescriptive standards with the appropriate diversities applied. Ventilation fan systems shall be designed to provide quiet and appropriate exhaust flows. All ventilation systems shall have dampers with motor operators that are interlocked to the motor starter circuits. The dampers shall be low leakage, tightly fitting with stainless steel perimeter and lip seals. All exhaust fans shall be connected to the Energy Management Control System and interlocked with their respective air handling system.

2.6.4. Building Plumbing and Fire Protection Systems

All plumbing shall comply with College standards, National Plumbing Code, BOCA, and as applicable, ADA compliance. All devices specified shall be low flow to minimize water consumption. The building shall have separate master water meter unless a master water meter is provided by local jurisdiction having authority. The building shall be provided with sub-meters for landscaping hose-bibs and other uses.

2.7. SITE DEVELOPMENT

If required by State or local regulations, the A/E will provide the College with the results of engineering analysis undertaken to evaluate the site for storm drainage or other environmental requirements, paying particular attention to water runoff, sediment and erosion control. The site shall be provided with an exterior entrance plaza, as the focus of the building entry, constructed of a decorative paving material, with appropriate building identification signage, lighting, seating, and landscaping.

2.7.1. General Site Work

Pedestrian and service vehicle access roads, disturbed by new construction, are required. All pedestrian walkways, entrances, road crossings shall comply with ADA requirements. Particular attention should be given to the integration of new walks and roadways into existing circulation systems. Corrections are to be made as required. Site lighting, security lighting, and landscaping shall be provided. A design for the location of underground utilities and their integration with existing campus utility systems is required. The A/E will extend or upgrade all utilities as required and provide new utilities as required. The A/E will remove any abandoned utilities or similar items. The A/E will provide lockable freeze proof hydrants on all sides of the building complex.

2.7.2. Delivery Entrance

The need for delivery of materials and the removal of wastes from the building dictates that consideration be given early in the schematic phase of the design to designation of a primary delivery entrance, to the location of trash receptacle dumpsters from which refuse can be conveniently collected, and to the location of a primary emergency vehicle access point.

2.7.3. Temporary Sediment Control

The A/E shall provide for appropriate temporary storm water, drainage, and sediment control through the period of construction, as well as for permanent solutions for these utilities.

2.8. UTILITY CONNECTIONS

A connecting duct bank structure for data, voice, video MATV, energy management, fire alarm, and other signal lines shall be provided between the building and existing systems on campus by the most direct run for the connection of these utilities. The conduit structure shall be encased in concrete and contain one appropriately-sized conduit for the campus voice (telephone) system fiber optic cable, as well as four 4-inch diameter spare conduits with pull wires. The structure shall also contain one 4-inch electronic signal conduit with interduct for the campus' future EMS/Security/Fire system cable, the campus video network, and the campus data network, as well as four spare 4-inch diameter conduits with one-inch interducts and pull wires. An electric power conduit structure shall also be provided and it shall be physically separated from the electronic signal conduit structure to assure no interference with electronic signals.

2.8.1. Fiber Optic Cable

Use of single and multi-mode fiber-optic cable is required where extending the campus' existing fiber-optic network (e.g., for the EMS/Security/Fire system, telephone system, video transmissions, and the College data network connections). Strand count and cable types shall be per College standards.

2.8.2. Electrical Power

The building shall be separately metered for electric power consumption monitoring. Power surge conditioning and spike protection is required throughout the building. Voice and data lines will have lightning protection to protect computer and voice switching equipment both from disruptions through power lines and signal lines.

2.8.3. Water Service

The design shall reuse and upgrade the existing water distribution system as required to serve the purpose of the facility and its proposed functions.

2.8.4. Sanitary Sewer and Storm Water

The A/E will provide an economical design for connection to the existing sanitary system and for providing new systems as required. The storm water drainage system design shall be consistent with the campus standards and be integrated with the campus' aesthetics. The College does not encourage open drain or surface systems.

2.9. SPACE REQUIREMENTS

The following program spreadsheets and Room Data Sheets provide a summary of the space requirements for this project. The consultant shall confirm this information at beginning of the design phases and make any necessary adjustments.

PROPOSED FACILITY PROGRAM TABULATION

PAGE	HEGIS	CAP	UNITS	FUNCTION	NASF / UNIT	TOTAL NASF	TOTALS
2.2	110	24	2	Classroom	720	1440	
2.3	110	40	2	Classroom	800	1600	
2.4	115	2	1	Classroom Storage	200	200	
					Sub-total -	***Hegis 100***	***3,240***
2.5	210	24	1	Biology	1200	1200	
2.7	210	23	1	Chemistry/Microbiology	1150	1150	
2.9	210	23	1	Engineering/Robotics	1150	1150	
2.11	210	24	1	Physics/Earth Science	1200	1200	
2.13	215	2	1	Biology Prep/Storage	250	250	
	215	2	1	Chemical Storage	120	120	
2.14	215	2	1	Chemistry/Microbiology Prep/Storage	400	400	
2.15	215	2	1	Engineering/Robotics Storage	250	250	
2.16	215	2	1	Physics/Earth Science Prep/Storage	250	250	
	215	2	1	Cold Room	80	80	
2.17	215	2	1	General Laboratory Storage	250	250	
					Sub-total -	***Hegis 200***	***6,300***
2.18	310	3	1	Director	150	150	
2.19	310	3	7	Faculty	120	840	
2.20	310	2	5	Part-time Faculty (Adjunct)	100	500	
2.21	315	2	1	Reception	100	100	
2.22	315	2	1	Work Room	200	200	
2.23	350		1	Conference Room	250	250	
					Sub-total -	***Hegis 300***	***2,040***
2.24	630	15	1	Lounge	300	300	
2.25	630	10	1	Vending Room	150	150	
					Sub-total -	***Hegis 600***	***450***
2.26	730	2	1	Storage Room	300	300	
2.27	750	1	1	Custodial	100	100	
2.27	750	1	2	Waste/Recycling, Hazardous Waste	100	200	
					Sub-total -	***Hegis 700***	***600***
						Total NASF-	***12,630***
						Total GSF-	***21,500***

Space Requirements

PAGE	HEGIS	CAP	UNITS	FUNCTION	NASF / UNIT	TOTAL NASF	TOTALS
2.2	110	24	2	Classroom	720	1440	
2.3	110	40	2	Classroom	800	1600	
2.4	115	2	1	Classroom Storage	200	200	
					Sub-total -	***Hegis 100***	***3,240***
2.5	210	24	1	Biology	1200	1200	
2.7	210	23	1	Chemistry/Microbiology	1150	1150	
2.9	210	23	1	Engineering/Robotics	1150	1150	
2.11	210	24	1	Physics/Earth Science	1200	1200	
2.13	215	2	1	Biology Prep/Storage	250	250	
	215	2	1	Chemical Storage	120	120	
2.14	215	2	1	Chemistry/Microbiology Prep/Storage	400	400	
2.15	215	2	1	Engineering/Robotics Storage	250	250	
2.16	215	2	1	Physics/Earth Science Prep/Storage	250	250	
	215	2	1	Cold Room	80	80	
2.17	215	2	1	General Laboratory Storage	250	250	
					Sub-total -	***Hegis 200***	***6,300***
2.18	310	3	1	Director	150	150	
2.19	310	3	7	Faculty	120	840	
2.20	310	2	5	Part-time Faculty (Adjunct)	100	500	
2.21	315	2	1	Reception	100	100	
2.22	315	2	1	Work Room	200	200	
2.23	350		1	Conference Room	250	250	
					Sub-total -	***Hegis 300***	***2,040***
2.24	630	15	1	Lounge	300	300	
2.25	630	10	1	Vending Room	150	150	
					Sub-total -	***Hegis 600***	***450***
2.26	730	2	1	Storage Room	300	300	
2.27	750	1	1	Custodial	100	100	
2.27	750	1	2	Waste/Recycling, Hazardous Waste	100	200	
					Sub-total -	***Hegis 700***	***600***
						Total NASF-	***12,630***
						Total GSF-	***21,500***

ROOM USE -	Classroom – Standard	**UNIT CAPACITY -**	24
NASF PER UNIT -	720	**HEGIS CATEGORY -**	110
NUMBER OF UNITS -	2	**TOTAL NASF -**	1,440

FUNCTION: General classroom designed for movable tables and chairs – re-configurable.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for 12 adult size tables and chairs (desk style – two seats per desk). Provide in instructional space a mobile instructor's smart-lectern with computer and monitor; ceiling mounted projector and motorized, concealed ceiling mounted projection screen or flat panel displays; ceiling mounted speakers for AV / intercom and voice augmentation systems; and a camera for lecture capture. Provide (in instructional space) all necessary associated electric, data, and audio/video controls for instructional technology systems.

+ Electrical - Provide one 115v duplex wall outlet 8' on center (a minimum of two per wall). Provide a minimum of two 115v duplex outlets at instructor's workstation.

+ Lighting - Provide ceiling mounted direct / indirect lighting systems with best practices performance for a contemporary technology-rich learning environment, and adequate for two-way distance learning where applicable. Lighting to be zone controlled providing a secondary system for use with AV / IT media. Provide motion control censors minimum. Systems to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of one – single voice, and six data / power / video combination outlets in addition to those associated with the instructor's workstation. See Design Considerations.

+ Flooring - Provide anti-static carpet.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - To be equipped with suitable darkening shades necessary for comfortable AV viewing.

+ Whiteboard - (LSC) - Wall behind lecturer and one sidewall to contain a full width whiteboard (minimum of 16 linear feet).

+ Tackboard - Provide tack trim on all accessible walls.

SPACIAL RELATIONSHIP: Readily accessible to corridor or circulating areas in classroom zone.

UNIT CAPACITY -	40	**ROOM USE -**	Classroom - Large
NASF PER UNIT -	800	**HEGIS CATEGORY -**	110
NUMBER OF UNITS -	2	**TOTAL NASF -**	1,600

FUNCTION: General classroom designed in a lecture configuration.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for 40 adult size tables and chairs (desk style). Provide in instructional space a mobile instructor's smart-lectern with computer and monitor; ceiling mounted projector and motorized, concealed ceiling mounted projection screen or flat panel displays; ceiling mounted speakers for AV / intercom and voice augmentation systems; and a camera for lecture capture. Provide (in instructional space) all necessary associated electric, data, and audio/video controls for instructional technology systems.

+ Electrical - Provide one 115v duplex wall outlet 8' on center (a minimum of three per wall) and a minimum of two at instructor's station.

+ Lighting - Provide ceiling mounted direct / indirect lighting systems with best practices performance for a contemporary technology-rich learning environment, and adequate for two-way distance learning where applicable. Lighting to be zone controlled providing a secondary system for use with AV / IT media. Provide motion control censors minimum. Systems to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of one – single voice, and six data / power / video combination outlets in addition to those associated with the instructor's workstation. See Design Considerations.

+ Flooring - Provide anti-static carpet.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - To be equipped with suitable darkening shades necessary for comfortable AV or TV viewing.

+ Whiteboard - (LSC) - Wall behind lecturer and one sidewall to contain a full width whiteboard (minimum of 24 linear feet).

+ Tackboard - Provide tack trim on all accessible walls.

SPACIAL RELATIONSHIP: Readily accessible to corridor or circulating areas in classroom zone.

UNIT CAPACITY -	4	**ROOM USE -**	Classroom Storage/Work Room
NASF PER UNIT -	200	**HEGIS CATEGORY -**	115
NUMBER OF UNITS -	1	**TOTAL NASF -**	200

FUNCTION: Will serve multi functions, e.g., processing materials, staff conferences, and storage for supplies, etc.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for one table and one work counter. Provide built-in cabinets or shelving for supplies.

+ Electrical - Provide one 115v duplex outlet on each wall. Provide two 115v duplex outlet at desk station.

+ Lighting - Provide lay-in florescent fixtures 2x4 with 2x2 appearance (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ **Outlets** - Provide a minimum of one voice, data / power / video combination outlet on one wall.

+ Flooring - Provide VCT tile with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) - To be equipped with blinds or other suitable darkening devices.

+ Whiteboard - (LSC) - NA.

+ Tackboard - Provide one 6' tackboard.

SPACIAL RELATIONSHIP: Adjacent to circulation/reference desk; direct access to library proper.

UNIT CAPACITY -	24	**ROOM USE -**	Science Laboratory
NASF PER UNIT -	1,200	**HEGIS CATEGORY -**	210
NUMBER OF UNITS -	1	**TOTAL NASF -**	1,200

FUNCTION: Science laboratory for instruction in Biology.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide applicable equipment and services listed on the corresponding *Service and Equipment* list.
Provide 6 free standing stationary laboratory tables (include one drawer and built-in cabinet for storage) with 4 student workstations each. Provide kneehole space for 24 cushioned swivel stools. Provide a minimum of 4 sinks with hot and cold water around the perimeter of the room. Provide each sink with an eyewash unit. Provide space for computer workstation at the other end to support a CPU, monitor, keyboard and mouse. Provide each lab station and the demonstration table with water every 2 students. Provide two distilled water units in convenient locations. All tops are to be of an acid, heat and stain resistant material of sufficient quality to support the function of the room. Provide ADA station as required by code. Provide one instructor's demonstration unit 30" x 72" at front of room (of same quality as the student units, but taller). Unit is to have cabinets and drawers for storage. Provide base cabinets and wall cabinets on sidewalls. Provide one cabinet equipped with lockable doors for 26 microscopes.. Provide in instructional space a mobile instructor's smart-lectern with computer and monitor; ceiling mounted projector and motorized, concealed ceiling mounted projection screen or flat panel displays; ceiling mounted speakers for AV / intercom and voice augmentation systems; and a camera for lecture capture. Provide (in instructional space) all necessary associated electric, data, and audio/video controls for instructional technology systems. Provide space for printer stand/counter in front and back of the laboratory.

+ HVAC - *IMPORTANT* - Room is to be adequately ventilated to dispel fumes or noxious odors. Room is to be ventilated to prevent odors or contaminants from infiltrating into adjoining spaces.

+ Electrical - Provide 115v duplex outlets on walls spaced at 6 foot intervals. Each lab table is to have four 115v duplex outlets. Printers in front and back of the room are to be wired to the students and instructor's computers. Amperage is to be sufficient for the support of 20 microscopes and other equipment without over-loading circuitry.

+ Lighting - Provide ceiling mounted direct / indirect lighting systems with best practices performance for a contemporary technology-rich learning environment, and adequate for two-way distance learning where applicable. Lighting to be zone controlled providing a secondary system for use with AV / IT media. Provide motion control censors minimum. Systems to be in accordance with Maryland Department of General Services guidelines.

+ **Outlets -** Provide a minimum of one – single voice, and six data / power / video combination outlets in addition to those associated with the instructor's workstation. Provide one data/power outlet to each computer workstation. Interconnect printer as required. See Design Considerations.

+ **Flooring -** Provide stain and acid resistant floor covering with appropriate fire rating.

+ **Ceiling -** Provide acoustical tile with appropriate fire rating.

+ **Windows -** To be equipped with suitable darkening shades necessary for comfortable AV or TV viewing.

+ **Whiteboard -** (LSC) Wall behind lecturer and one side wall to contain a 20' unit (minimum) with concealed vertically sliding storage (behind wall unit).

+ **Tacktrim -** Provide on all accessible walls.

SPACIAL RELATIONSHIP: Readily accessible to corridor or circulating areas. Group with other science labs with direct access to Biology preparation/storage room.

Biology Laboratory

SYM	ITEM	Y/N	QTY
GASES			
A	Argon		
CA	Compressed Air		
G	Natural Gas		
LN2	Liquid Nitrogen		
N2G	Nitrogen Gas		
VC	Vacuum		
UTILITIES			
ChW	Chilled Water		
CW	Cold Water	y	
DIW	Deionized Water		
DW	Distilled Water	y	2
HW	Hot Water	y	
PW	Purified Water		
SE	Shower & Eyewash	y	1
ELECTRIC - (Special Additional Requirements)			
V1	110V/10/30A		
V2	208V/30/50A	Provide power for all equipment per manufacturer's. recommendations	
V3	208V/10/50A		
V4	110V/10/30A/ Filtered		
V5	220V		
V6	240V		
MECHANICAL			
ChWS	Chilled Water System		
EX	Exhaust		
LH	Laminare Flow Hood		
PEX	Pump Exhaust		
S	Sink	y	2/4
WD	Wall Drain – recessed		
FH	Fume Hood	y	1
CHEMICALS			

SYM	FURNITURE/EQUIPMENT	Y/N	QTY	Elec.	SIZE
A	Autoclave				in prep rm/chem
B	Bench - Lab	y	6	6	
BC	Bookcase	y	1		
C	Computer	y	24/12		Laptops/wireless
CB	Clean Bench				
CS	Chair	y	24		
D	Desk				
F	File Cabinet				
IR	Instrumentation Rack				
PS	Power Supply	y			at each table & along wall
RF	Refrigerator/Freezer				
UF	Ultra-Cold Freezer				
WB	Dry marker	y	1		front of room
WC	Wall Cabinets w/ Glass Fronts	y			
CA	Base Cabinet w/ Wood Fronts	y			
FPC	Metal Fire Proof Storage Cab.				
DC	Desk Chair				
	Shelving				
SP	**SPECIAL EQUIPMENT**				
BSC	Biological Safety Cabinet	y			what is it?
SSS	Stainless Steel Shelving				
MI	**Miscellaneous**				
	Room Darkening	y			Curtains/shades

Note: The information listed on this page is to be verified by the A/E during the design phase.

UNIT CAPACITY -	24	**ROOM USE -**	Science Laboratory
NASF PER UNIT -	1,150	**HEGIS CATEGORY -**	210
NUMBER OF UNITS -	1	**TOTAL NASF -**	1,150

FUNCTION: Science laboratory will be used for instruction in Microbiology and Chemistry.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide applicable equipment and services listed on the corresponding *Service and Equipment* list.
Provide 24 student workstations in stationary laboratory type furnishings and a 30" x 72" teaching/demonstration table (include space for 24 movable bench height swivel chairs). Provide ADA station as required by code. Lecture area typically in front of room. Lab tables to be single sided with six students per unit. Provide each lab station and the demonstration table with the following utilities: gas, vacuum, water, and air outlets/ every 2 students. Each workstation is to have a sink with the faucet equipped with aspirators. All tabletops are to be of an acid, stain, and heat resistant material of sufficient quality to support the functions of the room. Provide four lockable table drawers per student (twenty-four per unit). Drawers are to be of sufficient size to support the respective discipline. Provide adequate circulation space to permit free movement between stations and to comply with ADA requirements. Provide eyewash unit at each student station. Provide a safety shower in a readily accessible area. Sidewalls shall contain two - 20'l x 3'h x 24”d storage cabinets with shelving in base unit and lockable sliding doors. Cabinets are to have top (same material as Lab Tables) with a 6" back-splash. Provide overhead cabinets 6' from floor to ceiling with sliding lockable doors. Provide lockable storage cabinets sufficient to hold 24 microscopes. Provide two built-in incubators. Provide space for two counter-top drying ovens. Provide in instructional space a mobile instructor’s smart-lectern with computer and monitor; ceiling mounted projector and motorized, concealed ceiling mounted projection screen or flat panel displays; ceiling mounted speakers for AV / intercom and voice augmentation systems; and a camera for lecture capture. Provide (in instructional space) all necessary associated electric, data, and audio/video controls for instructional technology systems.

+ HVAC - *IMPORTANT* - Room is to be adequately ventilated to dispel fumes or noxious odors (See DC Section D8). Room is to be ventilated to prevent odors or contaminants from infiltrating into adjoining spaces. Room should be equipped with auxiliary cooling to compensate for heat generated by Bunsen Burners, incubators and other equipment, particularly at times when other areas of the building do not require cooling.

+ Controls - Provide temperature monitor/sensor to control room’s comfort. Humidity is to be controlled in accordance with room’s requirements – see Design Criteria.

+ **Electrical -** Provide 115v duplex outlets on walls spaced at 6 foot intervals and one at monitor bracket. Lab tables are to have four 115v duplex outlets per unit. Provide four 115v duplex outlets over back-splash on each side cabinet. Outlets are to be spaced at regular intervals. Amperage is to be sufficient for the support of 20 microscopes and other equipment without over-loading circuitry.

+ **Lighting -** Provide ceiling mounted direct / indirect lighting systems with best practices performance for a contemporary technology-rich learning environment, and adequate for two-way distance learning where applicable. Lighting to be zone controlled providing a secondary system for use with AV / IT media. Provide motion control censors minimum. Systems to be in accordance with Maryland Department of General Services guidelines.

+ **Outlets -** Provide a minimum of one – single voice, and six data / power / video combination outlets in addition to those associated with the instructor's workstation. Provide one data/power outlet to each computer workstation. Interconnect printer as required. See Design Considerations.

+ **Flooring -** Provide stain and acid resistant floor covering with appropriate fire rating.

+ **Ceiling -** Provide acoustical tile with appropriate fire rating.

+ **Walls -** Provide painted walls and cove base to match flooring. Paint to be water based epoxy.

+ **Windows -** To be equipped with suitable darkening devices necessary for comfortable AV or TV viewing.

+ **Whiteboard -** (LSC) - Wall behind lecturer and one side wall is to contain a minimum of 16 linear feet (optimum 32 linear feet).

+ **Walls -** Provide painted walls with cove base to match flooring. Paint is to be water base epoxy.

+ **Tacktrim -** Provide on all accessible walls.

SPACIAL RELATIONSHIP: Area is to be readily accessible to corridor or circulation areas. Direct access to adjacent storage and preparation rooms.

Chemistry & Microbiology Laboratory

SYM	ITEM	Y/N	QTY
GASES			
A	Argon		
CA	Compressed Air		
G	Natural Gas	Y	
LN2	Liquid Nitrogen		
N2G	Nitrogen Gas		
VC	Vacuum	Y	
UTILITIES			
ChW	Chilled Water		
CW	Cold Water	Y	
DIW	Deionized Water		
DW	Distilled Water	y	1
HW	Hot Water	y	
PW	Purified Water		
SE	Shower & Eyewash	y	
ELECTRIC - (Special Additional Requirements)			
V1	110V/10/30A		
V2	208V/30/50A	Provide power for all equipment per manufacturer's. recommendations	
V3	208V/10/50A		
V4	110V/10/30A/ Filtered		
V5	220V		
V6	240V		
MECHANICAL			
ChWS	Chilled Water System		
EX	Exhaust	y	
LH	Laminare Flow Hood		
PEX	Pump Exhaust		
S	Sink *	y	10
WD	Wall Drain – recessed		
FH	Fume Hood	y	2

SYM	FURNITURE/EQUIPMENT	Y/N	QTY	Elec.	SIZE
A	Autoclave				
B	Bench - Lab	y	6		
BC	Bookcase				
C	Computer	y	12		For experimental use
CB	Clean Bench				
CS	Stool	y	24		
D	Desk				
F	File Cabinet				
IR	Instrumentation Rack				
PS	Power Supply	y			at each table & along walls
RF	Refrigerator/Freezer				
UF	Ultra-Cold Freezer				
WB	Dry marker	y	1		front of room
WC	Wall Cabinets w/ Glass Fronts	y			Cabinets at lab bench &
CA	Base Cabinet w/ Wood Fronts	y			Along the side of room.
DC	Desk Chair				
FPC	Metal Fire Proof Storage Cab.				
DC	Desk Chair				
SP	**SPECIAL EQUIPMENT**				
BSC	Biological Safety Cabinet				
SSS	Stainless Steel Shelving				
MI	**Miscellaneous**				
	Room Darkening	y			
					*Sinks – 6 in center and 4 on sides of room.
CHEMICALS					

Note: The information listed on this page is to be verified by the A/E during the design phase.

UNIT CAPACITY -	24	**ROOM USE -**	Engineering/Robotics Laboratory
NASF PER UNIT -	1,150	**HEGIS CATEGORY -**	210
NUMBER OF UNITS -	1	**TOTAL NASF -**	1,150

FUNCTION: Laboratory for instruction in Engineering/Robotic Technology.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for 24 portable workstations with built-in storage (include movable bench height swivel chairs). Provide space for 30" x 72" moveable teaching/demonstration table. Lecture area typically in front of room. All tabletops are to be heat resistant, anti-static, non-conductive material of sufficient quality to support the functions of the room. Adequate space to be provided on side walls for 20'L x 3'H x 2'D storage cabinets with shelving in base unit and lockable sliding doors. Provide overhead cabinets 6' from floor to ceiling with sliding lockable doors. Provide in instructional space a mobile instructor's smart-lectern with computer and monitor; ceiling mounted projector and motorized, concealed ceiling mounted projection screen or flat panel displays; ceiling mounted speakers for AV / intercom and voice augmentation systems; and a camera for lecture capture. Provide (in instructional space) all necessary associated electric, data, and audio/video controls for instructional technology systems.

+ Electrical - Provide 115v duplex outlets on walls spaced at 6 foot intervals. Work stations to have two 115v duplex outlets. Amperage is to be sufficient for the support of equipment without over-loading circuitry.

+ Lighting - Provide ceiling mounted direct / indirect lighting systems with best practices performance for a contemporary technology-rich learning environment, and adequate for two-way distance learning where applicable. Lighting to be zone controlled providing a secondary system for use with AV / IT media. Provide motion control censors minimum. Systems to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of one – single voice, and six data / power / video combination outlets in addition to those associated with the instructor's workstation. Provide one data/power outlet to each computer workstation. Interconnect printer as required. See Design Considerations.

+ Flooring - Provide stain and acid resistant floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) To be equipped with suitable darkening shades necessary for comfortable AV or TV viewing.

+ **Whiteboard -** (LSC) - Wall behind lecturer to contain a minimum of 16 linear feet (optimum 32 linear feet).

+ **Tacktrim -** Provide on all accessible walls.

SPACIAL RELATIONSHIP: Readily accessible to faculty offices.

Engineering & Robotic Laboratory

SYM	ITEM	Y/N	QTY
GASES			
A	Argon		
CA	Compressed Air		
G	Natural Gas		
LN2	Liquid Nitrogen		
N2G	Nitrogen Gas		
VC	Vacuum		
UTILITIES			
ChW	Chilled Water		
CW	Cold Water		
DIW	Deionized Water		
DW	Distilled Water		
HW	Hot Water		
PW	Purified Water		
SE	Shower & Eyewash		
ELECTRIC - (Special Additional Requirements)			
V1	110V/10/30A		
V2	208V/30/50A	Provide power for all equipment per manufacturer's. recommendations	
V3	208V/10/50A		
V4	110V/10/30A/ Filtered		
V5	220V		
V6	240V		
MECHANICAL			
ChWS	Chilled Water System		
EX	Exhaust		
LH	Laminare Flow Hood		
PEX	Pump Exhaust		
S	Sink		
WD	Wall Drain – recessed		
FH	Fume Hood		
CHEMICALS			

SYM	FURNITURE/EQUIPMENT	Y/N	QTY	Elec.	SIZE
A	Autoclave				
B	Bench - Lab				
BC	Bookcase				
C	Computer				
CB	Clean Bench				
CS	Chair/Stool				
D	Desk				
F	File Cabinet				
IR	Instrumentation Rack				
PS	Power Supply				
RF	Refrigerator/Freezer				
UF	Ultra-Cold Freezer				
WB	Dry marker				
WC	Wall Cabinets w/ Glass Fronts				
CA	Base Cabinet w/ Wood Fronts				
FPC	Metal Fire Proof Storage Cab.				
DC	Desk Chair				
SP	**SPECIAL EQUIPMENT**				
BSC	Biological Safety Cabinet				
SSS	Stainless Steel Shelving				
MI	**Miscellaneous**				
	Room Darkening				

Note: The information listed on this page is to be verified by the A/E during the design phase.

UNIT CAPACITY -	24	**ROOM USE -**	Science Laboratory
NASF PER UNIT -	1,200	**HEGIS CATEGORY -**	210
NUMBER OF UNITS -	1	**TOTAL NASF -**	1,200

FUNCTION: Science laboratory for instruction in Physics and Earth Sciences.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide 6 stationary laboratory tables with 4 student stations each. Provide a 30" x 72" demonstration table for the instructor. Provide space for 4 adjustable bench height swivel stools at each table. Student stations are to be parallel to instructor's table in three rows of two. Lecture area typically in front of room. Lab tables are to be a flat surface with a 2" lip for clamps. Provide each lab/demonstration table with vacuum, air and Variacs built into the tables to provide DC current All tabletops are to be of an acid, stain and heat resistant material of sufficient quality to support the functions of the room. Sidewall shall contain two large sinks and an eye wash unit. Provide base cabinet (bench) with cabinets above on one wall. Provide a full height cabinet on one wall. Provide space next to each worktable for a computer workstation. Provide in instructional space a mobile instructor's smart-lectern with computer and monitor; ceiling mounted projector and motorized, concealed ceiling mounted projection screen or flat panel displays; ceiling mounted speakers for AV / intercom and voice augmentation systems; and a camera for lecture capture. Provide (in instructional space) all necessary associated electric, data, and audio/video controls for instructional technology systems.

+ HVAC - Room is to be adequately ventilated to dispel fumes or noxious odors. Room is to be ventilated to prevent odors or contaminates from infiltrating into adjoining spaces.

+ Electrical - Provide 115v duplex outlets on walls spaced at 6 foot intervals. Lab tables to be equipped with two 115V duplex outlets per station. Provide strip electric above sidewall bench.

+ Lighting - Provide ceiling mounted direct / indirect lighting systems with best practices performance for a contemporary technology-rich learning environment, and adequate for two-way distance learning where applicable. Lighting to be zone controlled providing a secondary system for use with AV / IT media. Provide motion control censors minimum. Systems to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of one – single voice, and six data / power / video combination outlets in addition to those associated with the instructor's workstation. Provide one data/power outlet to each computer workstation. Interconnect printer as required. See Design Considerations.

+ **Flooring -** Provide stain and acid resistant floor covering with appropriate fire rating.

+ **Ceiling -** Provide acoustical tile with appropriate fire rating.

+ **Windows -** To be equipped with suitable darkening shades necessary for comfortable AV or TV viewing.

+ **Whiteboard -** (LSC) - Wall behind lecturer and one sidewall to contain a minimum of 20 linear feet (optimum 32 linear feet).

+ **Tacktrim -** Provide on all accessible walls.

SPACIAL RELATIONSHIP: Readily accessible to corridor or circulating areas.

Earth Sciences & Physics Laboratory

SYM	ITEM	Y/N	QTY
GASES			
A	Argon		
CA	Compressed Air		
G	Natural Gas	y	
LN2	Liquid Nitrogen		
N2G	Nitrogen Gas		
VC	Vacuum		
UTILITIES			
ChW	Chilled Water		
CW	Cold Water	y	
DIW	Deionized Water		
DW	Distilled Water		
HW	Hot Water		
PW	Purified Water		
SE	Shower & Eyewash		
ELECTRIC - (Special Additional Requirements)			
V1	110V/10/30A	Provide power for all equipment per manufacturer's. recommendations	
V2	208V/30/50A		
V3	208V/10/50A		
V4	110V/10/30A/ Filtered		
V5	220V		
V6	240V		
MECHANICAL			
ChWS	Chilled Water System		
EX	Exhaust		
LH	Laminare Flow Hood		
PEX	Pump Exhaust		
S	Sink w/ gooseneck faucet	y	4
WD	Wall Drain – recessed		
FH	Fume Hood	Y	1

SYM	FURNITURE/EQUIPMENT	Y/N	QTY	Elec.	SIZE
A	Autoclave				
B	Bench - Lab				
BC	Bookcase				
C	Computer	Y	12		For experimental Use
CB	Clean Bench				
CS	Chair/Stool				
D	Desk	Y	12	Add more space inside & less along wall for hoods, sinks, etc	
F	File Cabinet				
IR	Instrumentation Rack				
PS	Power Supply	Y	12	Built-in to go from AC to DC w/variable current voltage available	
RF	Refrigerator/Freezer				
UF	Ultra-Cold Freezer				
WB	Dry marker				
WC	Wall Cabinets w/ Glass Fronts	Y			
CA	Base Cabinet w/ Wood Fronts	y			
FPC	Metal Fire Proof Storage Cab.				
DC	Desk Chair	Y	24		
SP	**SPECIAL EQUIPMENT**				
BSC	Biological Safety Cabinet				
SSS	Stainless Steel Shelving				
MI	**Miscellaneous**				
	Room Darkening	y			
CHEMICALS					

Note: The information listed on this page is to be verified by the A/E during the design phase.

UNIT CAPACITY -	2	**ROOM USE -**	Prep/Stock Room
NASF PER UNIT -	250	**HEGIS CATEGORY -**	215
NUMBER OF UNITS -	1	**TOTAL NASF -**	250

FUNCTION: Storage necessary for the instruction of Biology.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide an 24" counter top (surface to match lab) with a 6" back-splash on three walls. Provide shelving, for storage of supplies below. Provide appropriate sink.

+ HVAC - Room is to be adequately ventilated to dispel fumes or noxious odors.

+ Electrical - Provide a minimum one 115v duplex outlet on each wall.

+ Lighting - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide one voice and two power / data / video combination outlets. See Design Considerations.

+ Flooring - Provide stain and acid resistant floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) To be equipped with suitable darkening shades.

+ Whiteboard - (LSC) **-** NA

+ Tackboard - NA

SPACIAL RELATIONSHIP: Direct access to Biology Laboratory.

Biology Prep Room										
SYM	**ITEM**	**Y/N**	**QTY**		**SYM**	**FURNITURE/EQUIPMENT**	**Y/N**	**QTY**	**Elec.**	**SIZE**
GASES										
A	Argon				A	Autoclave				
CA	Compressed Air				B	Bench - Lab				
G	Natural Gas				BC	Bookcase				
LN2	Liquid Nitrogen				C	Computer				
N2G	Nitrogen Gas				CB	Clean Bench				
VC	Vacuum				CS	Chair/Stool				
UTILITIES					D	Desk				
ChW	Chilled Water				F	File Cabinet	y	1		
CW	Cold Water	y	1		IR	Instrumentation Rack				
DIW	Deionized Water				PS	Power Supply				
DW	Distilled Water	Y	1		RF	Refrigerator/Freezer	y	1		
HW	Hot Water	Y	1		UF	Ultra-Cold Freezer				
PW	Purified Water				WB	Dry marker				
SE	Shower & Eyewash				WC	Wall Cabinets w/ Glass Fronts	Y			Maybe 1 wall & shelving
ELECTRIC - (Special Additional Requirements)					CA	Base Cabinet w/ Wood Fronts	y			
V1	110V/10/30A				FPC	Metal Fire Proof Storage Cab.	y	1		
V2	208V/30/50A	Provide power for all equipment per manufacturer's. Recommendations			DC	Desk Chair				
V3	208V/10/50A									
V4	110V/10/30A/ Filtered									
V5	220V				**SP**	**SPECIAL EQUIPMENT**				
V6	240V				BSC	Biological Safety Cabinet				
MECHANICAL					SSS	Stainless Steel Shelving				
ChWS	Chilled Water System									
EX	Exhaust				**MI**	**Miscellaneous**				
LH	Laminare Flow Hood					Room Darkening				
PEX	Pump Exhaust									
S	Sink w/ gooseneck faucet	y	1		**CHEMICALS**					
WD	Wall Drain – recessed									
FH	Fume Hood									

UNIT CAPACITY -	2	**ROOM USE -**	Chemical Storage Room
NASF PER UNIT -	120	**HEGIS CATEGORY -**	215
NUMBER OF UNITS -	1	**TOTAL NASF -**	120

FUNCTION: Storage of chemicals necessary for the instruction in the STEM programs.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide non-corrosive shelving and fireproof cabinets for the storage of chemicals. Provide one explosion-proof refrigerator and one fire rated lockable cabinet for the storage of Government regulated chemicals (e.g. alcohol, etc.)

+ HVAC - Room is to be adequately ventilated to dispel fumes or noxious odors. Room is to be ventilated to prevent odors or contaminates from infiltrating into adjoining spaces.

+ Electrical - Provide one 115v duplex outlet on each wall.

+ Lighting - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide one voice and two power / data / power / video combination outlets. See Design Considerations.

+ Flooring - Provide stain and acid resistant floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) To be equipped with suitable darkening shades.

+ Whiteboard - (LSC) **-** NA

+ Tackboard - NA

SPACIAL RELATIONSHIP: Direct access to Chemistry/Microbiology Laboratories.

UNIT CAPACITY -	2 Employees	**ROOM USE -**	Preparation Room
NASF PER UNIT -	400	**HEGIS CATEGORY -**	215
NUMBER OF UNITS -	1	**TOTAL NASF -**	400

FUNCTION: Preparation & storage of non-chemical items in Chemistry and Microbiology.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide applicable equipment and services listed on the corresponding *Service and Equipment* list. Provide 18" counter top (surface to match lab) with 6" back-splash on three walls. Provide shelving, for storage of non-chemical supplies below. Provide work surface along two walls with lockable overhead cabinets for storage of supplies. Provide a sink with hot and cold water and double drain board along one wall. Provide wall-mounted deionizer near sink. Furnish drying rack above sink area. Provide autoclave and glassware washer (provide special plumbing and all necessary services as required by manufacturer). Provide eyewash unit.

+ HVAC - Provide hood over work surface. Provide hoods for equipment in accordance with code and safety requirements. Room is to be adequately ventilated to dispel fumes or noxious odors. Room is to be ventilated to prevent odors or contaminates from infiltrating into adjoining spaces.

+ Electrical - Provide one 115v duplex outlet on walls at 6 foot intervals. Workstations to have four 115v duplex outlets. Provide electric to equipment in accordance with manufacturers recommendations.

+ Lighting - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide at a minimum two-single voice and two data / power / video combination outlets on opposite walls. See Design Considerations.

+ Flooring - Provide stain and acid resistant floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ **Windows -** (if applicable) To be equipped with suitable darkening shades.

+ **Misc. -** (LSC) - Provide 4 linear feet combination white-board and cork board unit in appropriate location.

SPACIAL RELATIONSHIP: Direct access from Chemistry/Microbiology laboratory.

Chemistry & Microbiology Prep/Storage

SYM	ITEM	Y/N	QTY
GASES			
A	Argon		
CA	Compressed Air		
G	Natural Gas		
LN2	Liquid Nitrogen		
N2G	Nitrogen Gas		
VC	Vacuum	Y	
UTILITIES			
ChW	Chilled Water		
CW	Cold Water	Y	
DIW	Deionized Water		
DW	Distilled Water	y	1
HW	Hot Water	y	
PW	Purified Water		
SE	Shower & Eyewash		
ELECTRIC - (Special Additional Requirements)			
V1	110V/10/30A		
V2	208V/30/50A	Provide power for all equipment per manufacturer's. recommendations	
V3	208V/10/50A		
V4	110V/10/30A/ Filtered		
V5	220V		
V6	240V		
MECHANICAL			
ChWS	Chilled Water System		
EX	Exhaust		
LH	Laminare Flow Hood		
PEX	Pump Exhaust		
S	Sink	y	2
WD	Wall Drain – recessed		
FH	Fume Hood	y	1

SYM	FURNITURE/EQUIPMENT	Y/N	QTY	Elec.	SIZE
A	Autoclave	y	1		
B	Bench - Lab				
BC	Bookcase				
C	Computer				
CB	Clean Bench				
CS	Chair/Stool				
D	Desk				
F	File Cabinet				
IR	Instrumentation Rack				
PS	Power Supply				
RF	Refrigerator/Freezer	y	1		
UF	Ultra-Cold Freezer				
WB	Dry marker				
WC	Wall Cabinets w/ Glass Fronts	y			
CA	Base Cabinet w/ Wood Fronts	y			
FPC	Metal Fire Proof Storage Cab.	y	1		
DC	Desk Chair				
SP	**SPECIAL EQUIPMENT**				
BSC	Biological Safety Cabinet	Flammables, Acid, Base cabinets			
SSS	Stainless Steel Shelving				
MI	**Miscellaneous**				
	Room Darkening				
CHEMICALS					

Note: The information listed on this page is to be verified by the A/E during the design phase.

UNIT CAPACITY -	2 Employees	**ROOM USE -**	Preparation Room
NASF PER UNIT -	250	**HEGIS CATEGORY -**	215
NUMBER OF UNITS -	1	**TOTAL NASF -**	250

FUNCTION: Preparation and storage for Engineering/Robotics Laboratory.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide 24" counter top (surface to match lab) with 6" back-splash on three walls. Provide shelving, for storage of non-chemical supplies below. Provide work surface along two walls. Provide a sink with hot and cold water and double drain board along one wall. Provide wall mounted deionizer near sink. Furnish drying rack above sink area.

+ HVAC - Room is to be adequately ventilated to dispel fumes or noxious odors. Room is to be ventilated to prevent odors or contaminates from infiltrating into adjoining spaces.

+ Electrical - Provide one 115v duplex outlet on walls at 6 foot intervals. Workstations to have four 115v duplex outlets. Provide electric to equipment in accordance with manufacturers recommendations.

+ Lighting - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide at a minimum two-single voice and two data / power / video combination outlets on opposite walls. See Design Considerations.

+ Flooring - Provide stain and acid resistant floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) To be equipped with suitable darkening shades.

+ Misc. - (LSC) - Provide 4 linear feet combination white-board and cork board unit in appropriate location.

SPACIAL RELATIONSHIP: Direct access from Engineering/Robotics laboratory.

UNIT CAPACITY -	2	**ROOM USE -**	Prep/Stock Room
NASF PER UNIT -	250	**HEGIS CATEGORY -**	215
NUMBER OF UNITS -	1	**TOTAL NASF -**	250

FUNCTION: Storage necessary for the instruction of Physics and Earth Science Laboratory.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide an 24" counter top (surface to match lab) with a 6" back-splash on three walls. Provide shelving, for storage of supplies below. Provide eyewash unit.

+ Electrical - Provide one 115v duplex outlet on walls at 6 foot intervals. Workstations are to have four 115v duplex outlets. Provide electric to equipment in accordance with manufacturers recommendations.

+ Lighting - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide at a minimum two-single voice and two data / power / video combination outlets on opposite walls. See Design Criteria.

+ Controls - Provide temperature monitor/sensor to control room's comfort.

+ Flooring - Provide stain and acid resistant floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Walls - Provide painted walls and cove base to match flooring. Paint to be water based epoxy.

+ Windows - (if applicable) To be equipped with suitable darkening devices.

SPACIAL RELATIONSHIP: Direct access from Physics laboratory.

UNIT CAPACITY -	2	**ROOM USE -**	Laboratory Storage
NASF PER UNIT -	250	**HEGIS CATEGORY -**	215
NUMBER OF UNITS -	1	**TOTAL NASF -**	250

FUNCTION: General laboratory storage for the STEM complex.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide an 18" counter top (surface to match lab) with a 6" back-splash on three walls. Provide shelving, for storage of supplies below.

+ HVAC - Room is to be adequately ventilated to dispel fumes or noxious odors. Room is to be ventilated to prevent odors or contaminates from infiltrating into adjoining spaces.

+ Electrical - Provide one 115v duplex outlet on each wall.

+ Lighting - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide one voice and data / power outlet on one wall. See Design Considerations.

+ Flooring - Provide stain and acid resistant floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) To be equipped with suitable darkening shades.

+ Whiteboard - (LSC) **-** NA

+ Tackboard - NA

SPACIAL RELATIONSHIP: Direct access to corridor.

UNIT CAPACITY -	1 employee, 2 visitors	**ROOM USE -**	Office
NASF PER UNIT -	150	**HEGIS CATEGORY -**	310
NUMBER OF UNITS -	1	**TOTAL NASF -**	150

FUNCTION: Office for STEM director.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for double pedestal desk and desk chair, two side chairs, two bookcases and two file cabinets. Provide space for microcomputer workstation and printer stand. Provide shelving for storage of materials, brochures and departmental supplies.

+ Electrical - Provide one 115v duplex outlet at 6' intervals on each wall. Provide one 115v duplex outlet at each desk and workstation.

+ Lighting - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of two voice, and two data / power / video outlets readily accessible to the desk and workstation.

+ Flooring - Provide anti-static carpet with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) **-** To be equipped with vertical blinds or other suitable darkening devices.

+ Misc. - Provide 4 linear feet cork board unit in appropriate location

SPACIAL RELATIONSHIP: Readily accessible from general circulating area.

UNIT CAPACITY -	1 employee, 2 visitors	**ROOM USE -**	Faculty Office
NASF PER UNIT -	120	**HEGIS CATEGORY -**	310
NUMBER OF UNITS -	7	**TOTAL NASF -**	840

FUNCTION: Office for instructors and visitors.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for one double pedestal desk, desk chair, two side chairs, one bookcase and two legal size file cabinets. Provide space for microcomputer workstation and printer stand.

+ Electrical - Provide one 115v duplex outlet at 6' intervals on each wall. Provide one 115v duplex outlet at each desk and computer workstation.

+ Lighting - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of one voice, and two data / power / video outlets. Provide one voice and data receptacle at desk and workstation.

+ Flooring - Provide anti-static carpet with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - To be equipped with vertical blinds or other suitable darkening devices.

+ Misc. - (LSC) - Provide 4 linear feet combination white-board and cork board unit in appropriate location.

SPACIAL RELATIONSHIP: Adjacent to classroom/laboratory and readily accessible from general circulating area.

UNIT CAPACITY -	1 employee	**ROOM USE -**	Office
NASF PER UNIT -	100	**HEGIS CATEGORY -**	310
NUMBER OF UNITS -	5	**TOTAL NASF -**	500

FUNCTION: Office/Workroom for part-time (adjunct) instructors.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for one pedestal desk, desk chair, one bookcase and one legal size file cabinet. Provide space for microcomputer workstation and printer stand.

+ Electrical - Provide one 115v duplex outlet at 8' intervals on each wall (exclude shelving area). Provide one outlet at each computer workstation.

+ Lighting - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of one voice, and two data / power / video outlets. Provide one voice and data receptacle at each desk and workstation.

+ Flooring - Provide anti-static carpet with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - To be equipped with vertical blinds or other suitable darkening devices.

+ Misc. - (LSC) - Provide 4 linear feet combination white-board and cork board unit in appropriate location.

SPACIAL RELATIONSHIP: Adjacent to classroom/laboratory and readily accessible from general circulating area.

UNIT CAPACITY -	2	**ROOM USE -**	Reception
NASF PER UNIT -	100	**HEGIS CATEGORY -**	315
NUMBER OF UNITS -	1	**TOTAL NASF -**	100

FUNCTION: Reception area for STEM complex.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

- **+ Room Layout -** Provide space for one desk/microcomputer workstation (linked to the college WAN),
- **+ Electrical -** Provide one 115v duplex outlet on each wall. Provide two 115v duplex outlet at desk station.
- + **Lighting** - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.
- + **Outlets** - Provide a minimum of one voice, and two data / power / video outlets. Provide one voice and data receptacle at desk/workstation.
- **+ Flooring -** Provide anti-static carpet.
- **+ Ceiling -** Provide acoustical tile with appropriate fire rating.
- **+ Windows -** (if applicable) - To be equipped with vertical blinds or other suitable darkening devices. Provide an interior window to provide view of the circulation/reference desk and the entrance door.
- **+ Whiteboard -** (LSC) - NA.
- **+ Tackboard -** NA.

SPACIAL RELATIONSHIP: Readily accessible to corridor or circulating areas.

UNIT CAPACITY -	2	**ROOM USE -**	Work Room
NASF PER UNIT -	200	**HEGIS CATEGORY -**	315
NUMBER OF UNITS -	1	**TOTAL NASF -**	200

FUNCTION: Will serve multi functions, e.g., processing materials, sorting mail, staff conferences, location for file server/CD-ROM jukebox, storage for supplies, etc.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for one desk/microcomputer workstation (linked to the college WAN), one table to seat six, one work counter. Provide built-in cabinets or shelving for supplies. Provide space for the file server/jukebox.

+ Electrical - Provide one 115v duplex outlet on each wall. Provide two 115v duplex outlet at desk station.

+ **Lighting** - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ **Outlets** - Provide a minimum of one voice, and three power / data outlets and one video. Provide one voice and data receptacle at desk/workstation.

+ Flooring - Provide VCT tile with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) - To be equipped with vertical blinds or other suitable darkening devices. Provide an interior window to provide view of the circulation/reference desk and the entrance door.

+ Whiteboard - (LSC) - NA.

+ Tackboard - NA.

SPACIAL RELATIONSHIP: Direct access to conference room.

UNIT CAPACITY -	10	**ROOM USE -**	Conference Room
NASF PER UNIT -	250	**HEGIS CATEGORY -**	350
NUMBER OF UNITS -	1	**TOTAL NASF -**	250

FUNCTION: Conference Room with Distance Teleconferencing capabilities.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for 10 people in movable adult size chairs and with a conference table suitable for teleconferencing. Furnishings and corresponding equipment shall be designed in accordance with current industry standards for teleconferencing. Consultant is to review room design and make recommendations as required.

+ Treatments - Special attention is to be given to room comfort (HVAC), lighting, and acoustical treatment necessary to the function of the room. Room is to be free of obstructions that inhibit the viewing area.

+ Electrical - Provide two (in floor) 115v duplex outlets beneath conference table. Provide one 120 volt 20 amp quad outlet on (center) rear wall, two 120 volt 20 amp quad outlets on (center) of front wall. Provide two 115v duplex outlets on each side wall.

+ Lighting - Provide ceiling mounted direct / indirect lighting systems with best practices performance for a contemporary technology-rich learning environment, and adequate for two-way distance learning where applicable. Lighting to be zone controlled providing a secondary system for use with AV / IT media. Provide motion control censors minimum. Systems to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide voice, data, and video receptacles on front and rear walls for video-teleconferencing equipment. Provide necessary outlets ceiling mounted speakers, wall mounted flat panel display, and other components. See "Room Layout" for design standards.

+ Flooring - Provide anti-static carpet with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ **Windows -** (if applicable) **-** To be equipped with vertical blinds or other suitable darkening devices necessary for comfortable AV or TV viewing.

+ **Misc. -** Provide 4' cork board unit in appropriate location

SPACIAL RELATIONSHIP: Readily accessible to corridor or circulating areas.

UNIT CAPACITY -	10	**ROOM USE -**	Lounge
NASF PER UNIT -	300	**HEGIS CATEGORY -**	630
NUMBER OF UNITS -	1	**TOTAL NASF -**	300

FUNCTION: Lounge area for informal gathering of students, faculty, and staff.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for approximately 15 adults in a lounge type environment. Provide for a minimum of two wall mounted flat panel displays with functionality to allow occupants to utilize the display via personal devices.

+ Electrical - Provide two 115v duplex outlets on all walls.

+ **Lighting** - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of six combination power / data outlets. **See room layout above.**

+ Flooring - Provide anti-static carpet with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) **-** To be equipped with vertical blinds or other suitable darkening devices necessary for comfort.

+ Misc. - (LSC) - Provide 4 linear feet combination white-board and cork board unit in appropriate location.

SPACIAL RELATIONSHIP: Direct access to vending area.

UNIT CAPACITY -	10	**ROOM USE -**	Vending Room
NASF PER UNIT -	150	**HEGIS CATEGORY -**	630
NUMBER OF UNITS -	1	**TOTAL NASF -**	150

FUNCTION: Area for a variety of vending machines for food, beverages, crackers, ice cream, etc.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide space for a minimum of 12 vending machines, money changer and two condiment tables. Room should also contain a built-in closet for the storage of supplies.

+ Electrical - Provide electric outlets suitable to accommodate a variety of vending equipment. Voltage and amperage is to be in accordance with manufacturer's recommendations. Provide two 110v outlets should be provided on wall opposite vending machines.

+ **Lighting** - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Plumbing - Provide cold water lines and drains sufficient to accommodate the above referenced machines.

+ Flooring - Provide suitable floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - **To** be equipped with suitable darkening devices necessary for comfort.

+ Misc. - Provide whiteboard / tack-board

SPACIAL RELATIONSHIP: Direct access to lounge area.

UNIT CAPACITY -	2 Employee	**ROOM USE -**	Storage Room
NASF PER UNIT -	300	**HEGIS CATEGORY -**	730
NUMBER OF UNITS -	1	**TOTAL NASF -**	300

FUNCTION: General storage of equipment and supplies necessary to operations of the STEM complex.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide shelving and cabinets on three walls for the storage of equipment and supplies. Provide space for double pedestal desk, desk chair, side chair and bookcase. Provide cubicle to house office furniture.

+ Electrical - Provide 115v duplex outlets on all walls at 6 foot intervals.

+ **Lighting** - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of one voice, and three combination voice / video and data outlets

+ Flooring - Provide VCT floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) **-** To be equipped with vertical blinds or other suitable darkening devices.

+ Misc. - Provide 4' cork board unit in appropriate location

SPACIAL RELATIONSHIP: Provide double doors with direct access to corridor.

UNIT CAPACITY -	1 Employee	**ROOM USE -**	Storage Room
NASF PER UNIT -	100	**HEGIS CATEGORY -**	730
NUMBER OF UNITS -	3	**TOTAL NASF -**	300

FUNCTION: Custodial, Waste-Recycling and Hazardous Waste rooms necessary to the operation of the STEM complex.

DESIGN CRITERIA: The A/E team is to review the *Design Criteria, Design Supplements,* & other informational items included in the Program for further requirements. The A/E shall resolve any inadvertent conflict in the documents with the College, during the design stage.

+ Room Layout - Provide shelving and cabinets on three walls for the storage of equipment and supplies.

+ Electrical - Provide 115v duplex outlets on all walls at 6 foot intervals.

+ **Lighting** - Provide lay-in direct / indirect florescent fixtures 2x4 (energy conservation type), to be in accordance with Maryland Department of General Services guidelines.

+ Outlets - Provide a minimum of one voice, and one combination power / data / video outlet.

+ Flooring - Provide VCT floor covering with appropriate fire rating.

+ Ceiling - Provide acoustical tile with appropriate fire rating.

+ Windows - (if applicable) **-** To be equipped with vertical blinds or other suitable darkening devices.

+ Misc. - Provide 4' cork board unit in appropriate location

SPACIAL RELATIONSHIP: Provide direct access to corridor.