

PROPOSAL TO _____
For: Systems Engineering Educational Program. When officially signed by both parties
becomes
MEMORANDUM OF UNDERSTANDING

I. BACKGROUND

Your organizations' customers in the operating forces rely on you to help identify and solve systems engineering and integration problems. **Your organization leadership** has articulated a vision of transformation into a world-class systems engineering and integration organization to enable your employees to better meet their customers' expectations. To achieve this vision, **your organization** must produce engineers with greater systems engineering and integration expertise and knowledge.

To meet this need, **your organization** desires to create a partnership with NPS to educate and train engineers and technicians on tools and technologies relevant to their work. This partnership will offer a Master of Science in Systems Engineering (MSSE) degree with two certificates of accomplishment during a two-year course of instruction delivered using distance learning methods.

Naval Postgraduate School (NPS) seeks to continue to provide excellence in graduate level degree programs, and collaborate with a wider range of Department of the Navy and Marine Corps organizations by taking advantage of distance learning technology.

II. SCOPE OF WORK

The NPS shall design and deliver a systems engineering curriculum that, upon successful completion of the established coursework and projects, will result in the conferring of an accredited Master of Science in Systems Engineering (MSSE) degree to participants in the program. The NPS shall also issue certificates of academic accomplishment to students who complete significant segments of the degree program (see attachment 1). Enrollment will range from 20 to 30 students, principally from the workforce of **your organization**. A minimum number of 20 seats must be filled for NPS to initiate a student cohort program.

This program shall consist of 16 quarter classes (3 hours of instruction a week each) to be offered over a two-year period (see attachment 1). As deemed necessary by NPS and **your organization**, this course load may be supplemented by additional remedial courses. Remedial courses could be provided by a local academic institution.

III. OBJECTIVES

This program is designed to meet your organizations academic requirements for a graduate degree in Systems Engineering. The program can have a technical focus in any specific area but must meet NPS Systems Engineering core course requirements (see attachment 1). The emphasis in this program is typically a strong technical education balanced with courses in management.

IV. INSTRUCTIONAL APPROACH

This program will consist of a minimum of 48 academic quarter credits of coursework taught in two-three hour courses a quarter, for a total of 16 courses. All coursework will be offered through NPS, and any remedial courses, if required, are outside the scope of this proposal. Remedial courses could be delivered by other local accredited academic institutions. Individuals obtaining the MSSE degree must also satisfactorily complete a Capstone Design Project under academic supervision (see attachment 1).

NPS will deliver instruction to your organization's personnel for this degree in a combination of onsite and distance-learning methods that includes video tele-education (VTE) and web-enhanced online courses. During each 12 week quarter, NPS faculty will deliver an agreed number of classes onsite at your location with the remaining being delivered by VTE and/or web-enhanced online courses. The long-range strategic design goal for the program is to provide a well-balanced combination of web-enhanced online and VTE courses augmented with frequent faculty onsite visits. NPS believes this is the ideal instructional approach for distance-learning.

NPS will issue Certificates of Accomplishment at the end of quarters three and six (see attachment 1), as partial fulfillment of our Master of Science in Systems Engineering to students who have successfully completed the required coursework. The respective certificates are Military Systems Engineering Fundamentals at the end of quarter three and Military Systems Engineering Integration at the end of quarter six. Students who complete the entire program of instruction will receive a Master of Science in Systems Engineering. Also, all students who complete the NPS Systems Engineering core courses receive DAU equivalency certificates for ACQ101/201 and SYS201/301 which meet DAWIA level III training requirements for the Systems Planning, Research, Development and Engineering (SPRDE) career field.

V. ORGANIZATION AND STAFFING

NPS has assigned Prof. Wally Owen, DPA, as the manager for this program. Prof. Owen serves as the NPS primary point-of-contact for the entire program. He will handle all aspects of the proposal and application process. He will also ensure that all students meet the graduation requirements set forth by NPS policy for the MSSE degree. Prof. Owen has extensive knowledge and experience in systems engineering and program management

concepts and practices, as well as the management of other distance education degree programs.

Additionally, NPS has assigned Prof. Ben Roberts, Ph.D. as the program manager for instruction. Prof. Roberts serves a key liaison role between faculty, students and academic support on all distance learning instructional delivery issues. Prof. Roberts has extensive knowledge and experience in organizational behavior and distance learning course development, management and assessment methods and techniques. The NPS program management team is dedicated to ensuring **your organization** distance-learning students receive the same high quality of instruction and graduate experience as our resident students. Both Prof. Owen and Roberts shall be available throughout the entire program via e-mail and telephone and will make occasional visits to **your organization** , as required.

VI. RESPONSIBILITIES

NPS shall present a course of study resulting in a Master of Science in Systems Engineering (MSSE) degree for successful program participants (see attachment 1).

NPS will deliver instruction for this degree in a combination of onsite and distance-learning methods that includes video tele-education (VTE) and web-enhanced online courses to personnel at **your organization**.

Your organization will name a MSSE program manager at headquarters to interface with the NPS program manager. Similarly, if there are multiple distance sites in **your organization**, a coordinator at each site will be selected to support course instructors in course administration, including operation of video teleconferencing equipment to support video tele-education (VTE) delivery.

NPS shall schedule courses a quarter in advance. The NPS program manager will coordinate with the **your organization** program manager on all scheduling requirements. The NPS MSSE program VTE coursework can be delivered with both courses on a single day (e.g. Tuesday 0800-1100, 1130-1430) or on separate days (e.g. Tuesday 0800-1100 and Thursday 0800-1100). Web-enhanced online courses will be delivered asynchronous over the 12 week quarter.

NPS shall establish that all courses in this program, will confer college credit accepted by the Western Association of Schools and Colleges or similar accreditation body. The only exceptions will be remedial or "refresher" courses that might be required locally.

NPS shall establish that the MSSE degree, as previously described in this document, will be duly recognized by the Western Association of Schools and Colleges or similar accreditation body. As required, similar recognition shall be obtained for any certificates issued for academic accomplishment in connection with this program.

Your organization will approve all Capstone Design Projects. In addition, NPS shall have full responsibility for establishing the didactic criteria and grading of the Capstone Design Projects.

NPS shall issue two Certificates of Accomplishment as partial fulfillment of our Master of Science in Systems Engineering to students who have successfully completed the required coursework at the end of quarters three and six respectively.

NPS shall issue DAU equivalency certificates for ACQ101/201 and SYS201/301 to all students who successfully complete the equivalent NPS Systems Engineering Core courses.

Admission to the degree or certificate program is contingent on an employee meeting admission requirements to NPS. Students must also meet NPS's prerequisites for individual courses. Minimum requirements should require an undergraduate degree in engineering or other technical field with strong academic performance.

Your organization tuition price shall cover all costs associated with the cost of admitting employees into Naval Postgraduate MSSE degree program including enrollment fees, processing fees, university fees associated with maintaining status as a student, diploma and certificate fees, program management and all distance-learning fees. A breakdown of costs is provided in section X. Cost and Methods of Payment of this document.

Your organization assumes costs associated with the purchase of published books for students, but NPS is willing to assume these duties for an additional price (see section X. Cost and Payment Method).

Your organization shall sponsor a minimum of 20 students to meet the NPS student cohort requirement to initiate this program. If you are unable to meet this minimum, the NPS program manager can work with you to help fill seats with other possible interested organizations and work out a cost sharing arrangement.

Your organization shall have full responsibility and control of curriculum baseline for this program. Any other organizations sponsoring students are responsible for their own funding and will be taking the program as offered through this NPS partnership.

Curriculum design will meet the NPS Systems Engineering degree core course requirements which also satisfies DAU equivalency requirements for the DAWIA Systems, Planning Research, Development and Engineering (SPRDE) career field at level III (ACQ101/201, SYS201 and SYS301). This curriculum baseline allows for six additional courses tailored to meet **your organizations** focused needs. The NPS core course requirements and SPRDE level III are annotated on the attached proposed curriculum baseline (see attachment 1). Additionally, course descriptions are provided as attachment 2. Potential faculty vitae will be provided as a separate document.

Your organization will initiate a transfer of funds to procure the NPS MSSE program using a standard funding document at the beginning of each academic year or quarter, dependent on which price option is selected. Other funding options may be available as negotiated with the NPS program manager.

VII. REPORTS

NPS shall provide progress reports on individual classes and their students to **your organization's** program manager within 30 days after the completion of each academic quarter. Reports shall provide grades, assessment of class success, and background on any students who are placed on academic probation. Additionally, NPS will provide a program assessment at the conclusion of each academic year, including recommendations for changes in the program based on the needs of students enrolled.

VIII. DELIVERABLE AND ACCEPTANCE PROCEDURES

All services under this agreement will be considered acceptable to **your organization** unless NPS is notified otherwise, in writing, within fifteen working days of delivery.

IX. EFFECTIVE DATE AND DURATION

Services under this agreement become effective **TBD**, or when both parties have signed it, and will conclude **TBD**.

X. COST AND METHODS OF PAYMENT

Your organization has the option to select either of the two price options (not including textbooks, handouts, educational software, etc...) for the program. An academic quarter is defined as 12 weeks of academic instruction. The price includes any travel or per diem charges incurred by instructors in the conduct of classes onsite at **your organization** and NPS distance learning costs for VTE/online delivery. For VTE courses, **your organization** shall initiate long distance phone calls to the NPS bridge.

Option A- Cost per course (maximum 30): The cost for each course is \$32,500. At this cost per course, **your organization** can allow up to a maximum of 30 students in the program. The total program cost for 30 students is \$520,000 (16 courses x \$32,500), the program cost per student is \$17,333 and the cost per student per course is \$1,083. Payments will be made in advance of each quarter or fiscal year for the appropriate courses. There is no refunds for any student drops. Funds shall have an expiration date of September 30 for the appropriate FY of delivery.

Option B- Cost per student (minimum 20): The cost per student is \$26,000. At this cost per student, **your organization** must guarantee a minimum enrollment of 20 students. The total program cost for 20 students is \$520,000 (20 students x \$26,000) and the cost per student per course is \$1,625. With this option, if you are unable to fill all 20 seats within your

organization, NPS will open and actively advertise the program to help you fill open seats. The NPS program manager will work with **your organization** program manager to fill seats with other organizations of your prefer before opening seats to other Navy organizations. Under this option, if the total seat requirement is not achieved, this agreement shall be terminated and **your organization** can pursue other options. Total payment of \$13,000 per student will be made at the commencement of each year of the program (based on total number of students enrolled) or made as installment payments per course each quarter. Funds shall have an expiration date of September 30 for the respective fiscal year.

Approximate percent breakdown of cost per course:

Labor: 80% (includes faculty labor, academic support labor and program management labor to deliver all instruction and includes all admissions/application processing fees)

Travel: 10%(includes faculty travel and per diem for 4 or 5 onsite trips per quarter 16 to 20 trips per year and periodic program management travel as required for support of distance learning instruction and certificate ceremonies at the end of quarter 3 and 6)

DL costs: 10% (includes all distance learning technical support, communications bridging and equipment recapitalization to deliver VTE and online features of delivery methods)

Course materials price, for either tuition option: If desired, NPS will procure, handle and distribute all course materials in advance of class (eg. textbooks, handouts, software, etc...) at an additional fixed price of \$150 per student per course. If this option is selected, prior to each quarter, NPS will verify the number of students and provide **your organization** an additional non-labor material proposal to support courses. **Your organization** has the option to provide all materials at their own expense. If **your organization** chooses this option, NPS will provide a list of textbooks, educational software, and a single copy of handouts (for local reproduction) within three weeks of the start of each course. **Your organization** should ensure all students have access to a laptop (portable) computer for class and a desktop computer at home and/or work for after class assignments.

NPS prefers funding be submitted using a standard funding document as a fixed price project order. **Your organization** will initiate a transfer of funds to NPS using a standard funding document at the beginning of each quarter or fiscal year for option A and beginning of each academic year for option B, or as negotiated with the NPS Program Manager.

XI. RESOLUTION OF DISAGREEMENTS

Any disputes resulting from disagreements will be settled mutually by both parties. In the event representatives hereunder are unable to resolve any dispute within 30 days of its presentation by either party, the representatives will refer the dispute to a mutually acceptable third party.

XII. AMENDMENTS

This agreement may be amended by mutual consent. Amendments must be in writing. Tasks or courses may be added, length of agreement extended, and costs may be adjusted as determined and agreed to by both parties.

XIII. TERMINATION PROCEDURES

This agreement may be terminated in whole or in part whenever **your organization** or NPS determines that termination is in the best interest of the Government, notwithstanding a contrary view that may be held by the other party. In the event of early termination, NPS will be reimbursed for actual costs incurred or obligated in support of this agreement up to the date of termination. Similarly, **your organization** will be reimbursed for overpayments exceeding actual cost borne by NPS at time of termination.

XIV. AUTHORIZATION

Accepted by:

Accepted by:

Your Organization

Phil E. DePoy, Ph.D.
Director, Meyer Institute of
Systems Engineering

Date:

Date:

CURRICULUM BASELINE

TYPICAL COURSE OF STUDY (all courses 3 hours long)

*** NPS- Systems Engineering core courses

✓ NPS- DAU equivalent SPRDE courses

QUARTER 1

✓ MN3221 (3-0)

*** Principles of Acquisition & Program Management- 1

✓ SI4107 (2-1)

*** Fundamentals of Systems Engineering

QUARTER 2

✓ MN3222 (2-1)

***Principles of Acquisition & Program Management- 2

✓ SI4008 (2-1)

***Systems Engineering & Integration

QUARTER 3

✓ SI4009 (2-1)

***Systems Architecture for Systems Engineering

Focused Course

Determined by your specific needs

NPS Military Systems Engineering Fundamentals Certificate award at end of quarter 3.

QUARTER 4

SI4100 (3-0)

***Systems Analysis

Focused Course

Determined by your specific needs

QUARTER 5

SI3011 (3-0)

*** Eng Economics & Cost Estimation

Focused Course

Determined by your specific needs

QUARTER 6

SI0810 (0-8)

***Capstone Design Project- Requirements Generation

Focused Course

Determined by your specific needs

NPS- Military Systems Engineering Integration Certificate award at end of quarter 6.

QUARTER 7

SI0810 (0-8)

***Capstone Design Project- Synthesis of Alternatives

Focused Course

Determined by your specific needs

QUARTER 8

SI0810 (0-8)

***Capstone Design Project- Concept Definition

Focused Course

Determined by your specific needs

NPS- Master of Science in Systems Engineering degree awarded at program completion.

Attachment (1)