National Test Pilot School

National Flight Test Institute

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Welcome to the National Test Pilot School (NTPS). Flight Test is a demanding and exacting field, and the preparation required to succeed in it is no less so. During your time studying here at NTPS, your patience, talents and skills – both academic and aeronautical – will be challenged as perhaps never before.

The National Test Pilot School was established in 1981 as an independent, non-profit educational institution dedicated to providing graduates who are ready to contribute to the field of Flight Test and Evaluation. By offering a wide range of training programs covering both military and civilian flight test, NTPS provides its students with unparalleled advantages.

Many aerospace companies, military services and government agencies from around the world send their best and brightest to NTPS. We pride ourselves in the ability to offer a diverse training program that can be targeted directly at the specific needs of an organization and its test and evaluation program requirements.

NTPS is designed for the real world of Flight Test, with an internationally recognized team of Test Pilot and Flight Test Engineer instructors, housed in a state-of-the-art facility equipped with cutting edge equipment including a large fleet of aircraft ranging from gliders and helicopters to supersonic jet fighters.

The National Test Pilot School is approved by the Bureau of Immigration and Customs Enforcement to provide training to foreign nationals.

The school has operated continually since its inception and NTPS does not have any pending petitions in bankruptcy, is not operating as a debtor in possession, have filed a petition within the preceding five years, or has had a petition in bankruptcy filed against it within the preceding five years that resulted in reorganization under Chapter 11 of the United States Bankruptcy Code (11 U.S.C. Sec. 1101 et seq.).

Mission of the National Test Pilot School

Our primary objective at NTPS is to educate and train to the highest-level Test Pilots and Flight Test Engineers. Upon successful completion of the program they, will be capable of participating immediately in either a military or civilian developmental, certification or acceptance flight test program. NTPS provides a unique educational program applicable to a diverse student population. Our students, drawn from the worldwide aerospace community, have achieved a high level of maturity as pilots, engineers and managers. NTPS is committed to the fundamental values of honesty, objectivity, integrity, respect for others, and the pursuit of truth and excellence.

Authorization and Accreditation

The National Test Pilot School is a private institution, approved to operate by the California Bureau of Private Postsecondary Education (BPPE) and to award Masters Degrees, and is in compliance with BPPE rules, regulations, and policies. The Master of Science in Flight Test Engineering degree is accredited by the Engineering Accreditation Commission of ABET, Inc.

Any questions a student may have regarding this catalog that have not been satisfactorily answered by the institution may be directed to the Bureau for Private Post-Secondary Education at 2535 Capitol Oaks Drive, Suite 400, Sacramento, CA 95833, www.bppe.ca.gov, toll free telephone number (888) 370-7589 or by fax (916) 263-1897.

As a prospective student, you are encouraged to review this catalog prior to signing an enrollment agreement. You are also encouraged to review the School Performance Fact Sheet, which must be provided to you prior to signing an enrollment agreement.
A student or any member of the public may file a complaint about this institution with the Bureau for Private Post-Secondary Education by calling (888) 370-7589 toll-free or by completing a complaint form, which can be obtained on the bureau’s internet website www.bppe.ca.gov.

Academic Programs

Within the NTPS organizational structure, the National Flight Test Institute (NFTI) fulfills the role of both Graduate School and Office of Sponsored Research. Through NFTI, NTPS awards Master of Science degrees in Flight Test Engineering and Flight Test and Evaluation, depending upon the academic preparation of the student.

The year-long Professional curriculum for Test Pilots and Flight Test Engineers (fixed or rotary wing) emphasizes development of both technical and managerial skills, producing graduates capable of leading, supporting and managing a wide variety of aircraft flight test programs. NTPS teaches both Mil-Spec acceptance for military aircraft and FAR/JAR civilian aircraft certification. In addition, numerous non-credit short-courses are offered, covering a wide spectrum from FAA aircraft certification to night vision goggles testing and avionics systems integration.

Upon completion of the minimum number of credits and a satisfactory project report, students will be awarded the Master of Science degree. Courses are offered throughout the calendar year in modular format. The theoretical phase of each module is one week in duration (five days) with eight hour-long lecture periods each day and addresses a specific topic pertinent to flight test and evaluation, such as Flying Qualities Flight Testing or Modern Flight Controls, followed by a practical phase that is compulsory for all professional course students. Because NTPS provides a large continuing education program to the worldwide aerospace community, ample opportunity exists for students to interact with practitioners in the field.

Academic Research

The National Test Pilot School, through the National Flight Test Institute, participates in a number of research activities.

These activities can be done with partner organizations on a non-interference basis, on a joint research funding basis where NTPS shares part of the cost of the research e.g. in cases where NTPS will benefit from the infrastructure put in place during the research, or as fully funded research projects.

Organizational Structure

NTPS operates with a matrix structure where faculty and staff report to Director NTPS (COO) for operational issues (e.g. scheduling) and to Director NFTI (CAO) for academic related matters (e.g. student records & accreditation). Students should contact the relevant Deputy Director (e.g. Systems or P&FQ) for questions relating to specific coursework.

School Calendar

This catalog outlines the guidelines, policies, procedures and course of study, which will govern your tenure here at the National Test Pilot School. The National Test Pilot School educational and training program consists of two primary phases: the Performance and Flying Qualities Phase, and the Systems Phase. The Performance and Flying Qualities Phase begins in July and the Systems Phase begins in January. The Professional Track may be started either in January (the ‘A’ Class) or July (the ‘B’ Class) of each year. Professional students start with a week’s introduction followed by T&E 4001 Introduction
to Flight Test, and then they begin the academic modules of the applicable phase. Students may register and enroll in an academic course module any time during the calendar year but it is recommended that they complete T&E 4001 Introduction to Flight Test, as soon as practical. The National Test Pilot School reserves the right to adjust the course outline, schedule, aircraft, flight hours, and teaching materials as the situation warrants. The accompanying table shows the typical flow of the program of instruction:

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Academic Regulations and Procedures

Admission

The unique nature of flight test and evaluation requires specialized knowledge embracing engineering, physical science, technical management, and human factors. Thus a strong technical background and superior engineering and science skills are mandatory to ensure success in the thorough, demanding, and specialized course of instruction at NTPS.

There are two ways to gain admission to NTPS, depending upon the program desired. Professional Course students are normally nominated by their sponsoring organization, which initially affirms that the student meets NTPS prerequisites. NTPS admits students to the Professional Course conditionally upon recommendation of the sponsoring organization, pending receipt and evaluation of university transcripts. Professional course students who elect to pursue a master’s degree through NFTI must have an undergraduate technical degree or its equivalent, and for pilots, appropriate licenses and ratings and approximately 750 hours of operational flying time. Pilots and flight test engineers must be certified by an appropriate aviation authority as medically fit for flying duties. Students may also make application as individuals, however the cost of the Professional Course usually precludes individuals from applying. Regardless of the option chosen, all students must meet minimum prerequisites. Enrollment is limited and applications are accepted in order of receipt. For students’ protection in case of course cancellation, pre-registration is required.

All admissions are granted on a competitive basis, and criteria based on an undergraduate minimum grade point average can be misleading. Each applicant is considered individually and criteria may include scholastic ability, maturity, demonstrated accomplishment, statement of purpose, and capacity for growth.

Applicants must possess an earned Bachelor of Science or equivalent degree in an engineering discipline, mathematics, physical science, or technical management. Ideally, U.S. applicants should have earned a minimum overall cumulative grade point average (CGPA) of 2.50 on a 4.00 scale and a minimum CGPA of 3.00 in discipline in their junior and senior years. A master's degree from an accredited institution may satisfy this requirement. Students with other academic degrees will be considered on a case-by-case basis and may be provisionally admitted provided mathematics training through Differential Equations is demonstrated. Advancement to full graduate status is automatically gained after satisfactory completion of 12 credits.

Language Proficiency

English is the recognized language of the International Civil Aviation Organization (ICAO) and NTPS expects all incoming students to meet the ICAO requirements for speaking, reading, and understanding the English language. All applicants whose native language is not English, or who were educated at schools where English is not the language of instruction in all disciplines, must submit evidence of English language proficiency. Evidence consists of an official test report for the Test of English as a Foreign Language (TOEFL) submitted directly to NTPS from the testing agency. English is the only language that is used for instruction at NTPS. NTPS can arrange language training on demand through a second party service provider such as Berlitz. Costs will be provided as requested and will be dependent on the service provider.

Registration

Students who are not attending one of the professional courses are required to register for each course module. Tuition and fee payments are due and payable at the NTPS Business Office prior to the start of instruction. Because of the intensive continuous block instructional format, late registration is not permitted.

Student Responsibilities

Students are responsible for being fully aware of and informed about all procedures and regulations pertaining to their participation in the National Test Pilot School’s educational programs. This information can be found in the NTPS catalog, periodic notices published by NTPS, and for Professional Track (flight) students, in the Federal Aviation Regulations, posted Operational Notes, and the NTPS Master Briefing Guide. Lack of awareness of regulations, standards and procedures is not sufficient reason for waiving any applicable rule.

Attendance

Students are expected to attend all classes, oral presentations, and when relevant, pre- and post-flight briefings, and Technical and Safety Review Boards unless excused for reasons of illness.
Academic Advising

The Director of the National Flight Test Institute will act as the academic advisor for all students enrolled in the master’s degree program. In addition, each course module at NTPS has an assigned staff member who is responsible for its overall conduct and is available to advise and counsel students regarding course particulars. Students are free to call on these advisors whenever assistance or discussion is needed.

Transfer and Experiential Learning Credit

Students may transfer up to 9 Quarter (6 Semester) credits toward the Master of Science degree.

Notice Concerning Transferability of Credits and Credentials Earned at our Institution

The transferability of credits you earn at NTPS is at the complete discretion of an institution to which you may seek to transfer. Acceptance of the MSFTE and the MSFT&E you earn in the graduate program is also at the complete discretion of the institution to which you may seek to transfer. If the credits or degree that you earn at NTPS are not accepted at the institution to which you seek to transfer, you may be required to repeat some or all of your coursework at that institution. For this reason you should make certain that your attendance at this institution will meet your educational goals. This may include contacting an institution to which you may seek to transfer after attending NTPS to determine if your credits or degree will transfer.

A maximum of six credit hours or units (nine quarter credits) of transfer credit may be applied towards the Master of Science degree. Transfer credit will be granted under the following conditions:
1. Official transcripts from institutions where credit was earned were received directly from the institutions.
2. The courses were completed with a minimum grade of B or equivalent.
3. The courses were completed within the five-year period immediately preceding the date the Application for Admission was received by the National Flight Test Institute at NTPS.
4. No academic credit is awarded for experiential learning.

This Institution has not entered into an articulation or transfer agreement with any other college or university.

Schedule of Classes

A schedule of courses is published each calendar year by NTPS. NTPS reserves the right to make necessary and appropriate adjustments to the published schedule to include cancellation or rescheduling of any course module.

Continuous Enrollment of Academic Course Students

Students are not considered to be continuously enrolled if they:
1. Fail to enroll in at least one course module at NTPS in any one calendar year period.
2. Do not complete a NTPS master’s degree within five years from their initial enrollment.

Leaves of Absence

Students enrolled in the Academic Track perform their coursework in modules, which can be scheduled according to the student’s particular needs. Leaves of Absence are not granted for the interruption of modules (see Withdrawing from a Course for more details).

The Professional track incorporates sequential, consecutive coursework, and any interruption of study presents a serious problem with continuity of instruction. Thus, leaves of absence are not granted, except in extreme circumstances, and on a case-by-case basis.

Academic Integrity

The National Test Pilot School has a strong commitment to maintaining and upholding intellectual integrity. The National Test Pilot School operates under an honor system, which states that no employee or student will lie, cheat, or steal nor tolerate those who do during the conduct of school activities. NTPS considers activities such as plagiarism, unauthorized procurement of exams, trading or otherwise dealing with exams or exam questions and/or answers and written reports to be a serious breach of ethical conduct and its honor system. A student is subject to expulsion for any unethical conduct or willful conduct contrary to the code of behavior established at NTPS and the general welfare of the student body.
A charge of unethical conduct is an extremely serious matter and shall be detailed in writing to the Director NTPS and shall be signed by the person(s) making the charge. If the Director NTPS deems that there is sufficient evidence to warrant an investigation of any charge formally presented in accordance with the above, he will then notify the President. The President shall appoint an Investigating Board consisting of five members, comprised of three faculty members, one student, and the President who shall coordinate the investigation and act as Chairman of the Investigating Board.

The accused student shall be furnished with a copy of the charge and shall be given ample opportunity to refute the charge either in person or by counsel before the Board of Investigation at a hearing called by the Board.

All members of the Board shall be present at any hearing pertaining to unethical conduct and a unanimous vote of the Board shall be required for expulsion. In the absence of a unanimous vote of the Investigating Board, the charge shall be dismissed.

**Academic Freedom**

NTPS actively promotes a policy of academic freedom. Instructors are encouraged to present a variety of perspectives on their subjects, particularly from the vantage point of their individual experience, education, and reflection, whatever that may be, insofar as they believe it to promote understanding of the subject.

To encourage wide ranging viewpoints, it is NTPS general policy to assign instructors to teach a range of subtopics within their general area of expertise on a rotational basis so that a varied approach to any given subject area is assured.

Students are encouraged to question, challenge, and respond. Faculty and students are free to examine all pertinent data, question ideas and concepts, and to be guided by evidence.

**Academic Standards and Grading System**

Written examinations are graded on a numerical scale for all students. All other assignments such as graded flights, oral, and written reports are assigned a descriptive grade. Practical phases are an essential adjunct to the theoretical phases. Demonstration and practice exercises are not graded. Weighting factors are assigned to specific assignments because not all assignments are of equal scope, and are used in calculating student’s final grade. A final overall grade is determined for class standing.

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Numerical Equivalent</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>A</td>
<td>95 - 100</td>
<td>Nearly perfect in all aspects; little room for improvement</td>
</tr>
<tr>
<td>A-</td>
<td>90 - 94</td>
<td>A few errors; some areas could be improved</td>
</tr>
<tr>
<td>B+</td>
<td>85 - 89</td>
<td>Accomplishes the task with few errors or omissions; covers all important critical tasks or items</td>
</tr>
<tr>
<td>B</td>
<td>75 - 84</td>
<td>An satisfactory grade with normal performance during flight or reporting</td>
</tr>
<tr>
<td>B-</td>
<td>70 - 74</td>
<td>Marginal performance; meets the minimum criteria</td>
</tr>
<tr>
<td>Unsatisfactory (U)</td>
<td>&lt;70</td>
<td>Clearly fails in one or more aspects; requires remedial training; probationary status</td>
</tr>
<tr>
<td>Incomplete (I)</td>
<td></td>
<td>Passing but incomplete</td>
</tr>
<tr>
<td>In Progress (IP) (T&amp;E 4003 and 4220 only)</td>
<td></td>
<td>Satisfactory progress is being made</td>
</tr>
<tr>
<td>Pass (P)</td>
<td></td>
<td>Passing grade (credit)</td>
</tr>
<tr>
<td>Withdrawal (W)</td>
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<td>Withdrawal passing from a course</td>
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<tr>
<td>Withdrawal Failing (WF)</td>
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<td>Withdraw from NFTI – Failing</td>
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</tbody>
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A student who fails to attain an exam grade of at least 70 on assignments is placed on probation. Probation requires a repeat of the examination or assignment after remedial training or study. A second failure to achieve the minimum standard may result in dismissal at the discretion of the NTPS Director.

**Incomplete Grades**

Incomplete grades are temporary grades assigned when extenuating circumstances prevent a student from completing a course. If a student does not complete the course within a time period mutually agreed to with the course advisor, the grade of I automatically converts to WF.
Withdrawing from a Course

Students receive a grade of W if they withdraw from a course before the close of business on Wednesday of the week in which the course module is presented. Withdrawal after Wednesday will result in a WF grade.

Graduation Requirements

Students will graduate with the degree of Master of Science after completing the curriculum requirements in effect at the time of their first enrollment as published in the NTPS catalog or, at their option, current published requirements. Completion of the entire prescribed curriculum is mandatory, including completion of all course work, and where applicable, flight and project assignments, reports, and final capstone (or unknown aircraft) project report. An average grade of B is required for graduation. Students will not be awarded a degree until all debts and obligations owed NTPS have been satisfied and the student is in good standing in accordance with NTPS policies and regulations.

Degree Completion Time Limit

All requirements for a master’s degree must be completed within five years from the date of initial enrollment.

Student Records

In carrying out its assigned responsibilities, the National Test Pilot School collects and maintains information about students. Although these records belong to the School, both School policy and federal law accord students a number of rights concerning these records. The NTPS policy is designed to inform students where records about students may be kept and maintained, what kinds of information are in those records, the conditions under which students or anyone else may have access to information in those records, and what action to take if students believe that the information in their record is inaccurate or that their rights have been compromised. The National Test Pilot School respects the rights and privacy of students in accordance with the Family Rights and Privacy Act (FERPA). Upon graduation, students are provided with a transcript of their academic records. The original records are archived by NTPS for 5 years. Transcripts are kept indefinitely and additional transcripts may be requested from the NTPS Admissions Office.

Non-Discrimination Policy

The National Test Pilot School admits individuals of any sex, race, color, ancestry, religious creed, national origin (some foreign nationals may require US Department of State approval), disability, medical condition, age, marital status, sexual orientation to all the rights, privileges, programs and activities generally accorded or made available to students at the school. NTPS also accommodate persons with disabilities. Please call the National Test Pilot School office to discuss your particular needs. Students who are engaged in flight activities must be medically qualified by the appropriate authority in their home country or the FAA.

Policy on Sexual Harassment and Student Grievances

The National Test Pilot School has a zero-tolerance policy regarding sexual harassment and/or assault. Any employee or student found guilty of such unacceptable behavior is subject to dismissal. The State of California defines sexual harassment as unwanted sexual advances, or visual, verbal or physical conduct of a sexual nature. This definition includes many forms of offensive behavior and includes gender-based harassment of a person of the same sex as the harasser.

- Any occurrence of sexual harassment should be made known to the NTPS administration, i.e., the NTPS Director, who will:
- Fully inform the complainant of his/her rights and any obligation to secure those rights.
- Conduct a full and effective investigation that is immediate, thorough, objective, and complete. All those with information on the matter will be interviewed.
- Make a determination and communicate the results to the complainant, to the alleged harasser, and all others concerned, as appropriate.
- If the allegations are proven, initiate prompt and effective remedial action against the harasser and communicate this action to the complainant.
- Take steps to prevent further harassment and take appropriate action promptly to remedy the complainant’s loss, if any.
- A copy of California pamphlet DFEH-185 is posted on the staff bulletin board. New students/staff are required to familiarize themselves with this policy as part of their incoming indoctrination and to the seriousness of violations of this sexual harassment policy. The above procedures also apply to any student grievance.
NTPS will use the procedures outlined in the Complaint and Grievance Procedures (available upon request) to respond to behavior which goes against the values of NTPS’s community as defined in this statement. NTPS considers the procedures for resolving disputes a part of its educational mission and is committed to a process which provides both peer review and mediation. All complaints and grievances will be addressed through a formal statement; persons who have questions about the Statement should contact the Course Coordinator (CC). Resolution and appeal processes are administrative functions and are not subject to the same rules of civil or criminal proceedings. Because some violations of these standards are also violations of law, students may be accountable to both the legal system and NTPS.

A student or any member of the public may file a complaint about this institution with the Bureau for Private Post-Secondary Education by calling (888) 370-7589 toll free or by completing a complaint form, which can be obtained on the bureau’s internet web site www.bppe.ca.gov.

**Student Services**

**Course and Supporting Materials**

Full-time Master’s Degree students are provided with all training notes and course material. For professional track students, NTPS covers all travel expenses undertaken as a part of the course, all fees for external training facilities and assets used by NTPS during the course, and transportation from and to Los Angeles International Airport at the beginning and end of the course.

**Visa and Immigration Services**

For students attending from countries other than the United States, the student or sponsoring agency is responsible for complying with any legislation or regulations of the United States or any other country governing entry into the United States.

NTPS provides assistance in immigration documentation, including government I20 forms. Additionally, NTPS provides liaison services with the United States Department of State with regards to obtaining authorization for students to engage in defense-related training.

The coursework specified may include project-related visits to countries other than the United States. Students are responsible for obtaining all necessary travel documentation for official course travel.

**Student Housing**

The National Test Pilot School is located at an active airport, thus no on-campus housing is available and has no dormitory facilities under its control. Typically, the students’ sponsoring agencies provide housing as a condition of the students’ employment. The near-by towns of Tehachapi, Rosamond, California City, Lancaster and Palmdale all offer a full range of housing opportunities and amenities for students who wish to avail themselves of them. Unfurnished apartment rental prices typically range from $800pm to $1200pm. Furnished apartments and furniture can be rented for an additional charge. Students who are not registered for professional courses are responsible for their own accommodations while attending classes at the National Test Pilot School. If requested, NTPS will assist students to arrange housing through a registered rental agent.
Facilities and Equipment

Producing world-class Flight Test graduates requires world-class facilities. The NTPS campus is located at 1030 Flight Line Bldg. 72, Mojave, CA at the Mojave Civilian Flight Test Center, a Southern California airport established to accommodate the specialized needs of flight test activities. Mojave has unique facilities, airspace and climate.

The center of NTPS’ training complex is a modern 18,000 square-foot classroom and laboratory building, which adjoins a 24,000 square-foot hangar. Three additional hangars, each approximately 20,000 square feet, are utilized for aircraft maintenance and storage. The building contains seven large classrooms, accommodating up to 100 students, a night vision technology lab, a high-tech data telemetry station, a data reduction lab, video lab, library and a life support equipment lab. There are two student/faculty lounges, a racquetball court, showers and locker rooms. The Professional Course classrooms are equipped with individual data ports so that students may utilize the school’s computer intranet and the world wide web. The NTPS campus was specifically designed for conducting flight test training, and was officially dedicated in a special ceremony in October, 1988.

Library Resources

The NTPS library maintains a select collection of reference textbooks, flight test reports, aircraft flight manuals and video training materials and is managed by a librarian who is available during office hours. NTPS’ diverse student population comes from many locations around the globe, and many students will come and go between learning sessions in residence at NTPS, often with much of their capstone project research being performed from their home place of employment or duty station. To accommodate the research needs of this culturally and geographically diverse group, NTPS focuses on providing state-of-the-art online resources and a web-based virtual library. An on-staff Information Technologist provides the training and consultation services necessary for all students to avail themselves of this world-wide accessible library.
Aircraft Resources

NTPS operates a diverse fleet of over 40 training aircraft and instrumented flying laboratories. These aircraft are representative of worldwide aviation and were specifically selected to demonstrate a broad range of flying qualities and performance capabilities. Several models are unique in terms of their utility as flight test teaching aids, and some aircraft of foreign manufacture feature design philosophies not commonly found in US-designed aircraft. Additionally, a number of NTPS aircraft have been modified and instrumented to duplicate and demonstrate unusual and abnormal flying qualities that the students may encounter during actual flight test.

Aermacchi MB-326 Impala (5). Single engine jet trainer, Instrumented for Performance and Flying Qualities (1 AC). Spin test training, Upset training, Loads and flutter TM system (1 AC).

Beechcraft BE-76 Duchess, One engine inoperative (OEI) flight testing, Night vision goggle compatible.

Bell OH-58C (2), Single engine turbine helicopter, Night vision goggle compatible, Instrumented for Performance and Flying Qualities.

Bell UH-1N Huey, Twin engine turbine helicopter, Night vision goggle compatible, Instrumented for Performance and Flying Qualities, LORAS / FLIR, SAS & Auto Pilot.

Cessna 172 Skyhawk (2), Flight test techniques training.

Cessna 182 Skylane, Flight test techniques training, Garmin 1000 cockpit.
Cessna 441 Conquest. Twin-engine turboprop, tricycle retractable gear, Capable of carrying up to eleven people.

Cirrus SR22 (3), Single engine, piston propeller, Sidestick controls for pitch and roll, Emergency Airframe Parachute System, Dual Garmin 430 navigation systems (1 AC), Large multifunction display (Avidyne FlightMax) (1 AC) Garmin 1000 Avionics (2 AC).

DeHavilland DHC-1 Chipmunk (2), Spin training and formation.

Diamond DA-42 (1), Twin engine FADEC diesel, OEI Flight test demonstrator.

Douglas C-47/DC-3 Turbodak, Twin engine turboprop transport aircraft, Modified for maritime patrol with multi-mode RADAR and FLIR

Gippsland GA-8 Airvan, Single engine recip, Night vision goggle compatible, FLIR and Weather RADAR equipped.
MBB BO-105M (2), Light weight, twin-engine, multipurpose helicopter, Instrumented for Performance and Flying Qualities.

NDN-1 Turbo-Firecracker, Turbine powered single engine, Spin trainer, Upset trainer.

Northrop T-38A (1), Supersonic jet trainer

Piper PA-24 Comanche, Single engine recip / 4 place, Used for flight test technique training

Piper PA-34 Seneca II, Twin engine turbocharged , Instrumented for Performance and Flying Qualities

Sabreliner NA-265 (2), Instrumented for Performance and Flying Qualities (1 AC), Business jet, 2 crew and up to 7 passengers.
Swearinger SA-226 Merlin II. Instrumented for Performance and Flying Qualities, Twin turboprop commuter aircraft.

Laboratories, Systems and Training Aids

Because NTPS provides a high quality-testing environment, various aircraft systems such as radar, electronic displays, FLIR and threat and warning systems are frequently provided to NTPS by their manufacturers for student evaluation and training. Access to resources can be requested by the student.

NTPS provides its students with access to the latest in equipment needed to train them for the high-tech world of modern Flight Test. Here are some brief highlights of this equipment:

Simulators: NTPS owns a number of flight and systems simulators that allow students to explore various conditions and environments that would otherwise be too expensive or dangerous to experience in a real aircraft. Included is a Variable Stability Simulator which can mimic the real-world characteristics of an experimental aircraft. NTPS also has contractual arrangements for students to visit other organizations flight simulator centers for additional training and experience.

Camber Radar: NTPS has contracted with Camber Corp to provide a RADAR simulation program. The RADAR Simulation is a complex, real-world energy level model of the interaction of the emitted radio transmission and the simulated environment. The component based design provides ease of use and allows a user familiar with RADAR systems to quickly prototype complex RADAR systems and modes which include ground, weather, aircraft, ships and ground vehicle returns. Camber Corp is recognized worldwide as an industry leader in sensor simulation.
Telemetry: Much of the data acquisition during flight test is recorded remotely via telemetry. In order to provide a real-life flight test environment for our students, NTPS has assembled a telemetry ground station using state-of-the art equipment. Additionally, a telemetry van can be specially fitted to conduct ground support operations of various student flight test projects.

Forward Looking Infrared: FLIR is used both in the military and civilian operations, and the technology is always changing and improving. Our FLIR courses train tomorrow's flight test personnel to test this growing technology.

NVG Lab: The ability to see in the dark is the focus of much cutting-edge aviation developments, and our Night Vision Goggles lab allows the students a sampling of how such systems operate, their limitations, and what they can expect when flight testing such systems in harsh environments. Experiences learned in the lab are then applied in our NVG-equipped rotary and fixed-wing aircraft.

Ejection Seat training module and Life Support Equipment lab: NTPS stresses safety first and foremost, utilizing a number of training aids to acquaint the students with the use of life support equipment and aircraft emergency egress systems.
# Programs and Curricula

## Master’s Degree Programs

The National Test Pilot School (NTPS), through its academic and research graduate wing, the National Flight Test Institute (NFTI), offers Master of Science degrees in Flight Test Engineering (MS FTE) and Flight Test and Evaluation (MS FT&E).

### Master’s Degree in Flight Test and Evaluation (MS FT&E)

Students with a bachelor’s degree in baccalaureate degree in engineering, physical or computer science, mathematics or technical management are eligible to receive a Master’s Degree in Flight and Evaluation upon successful completion of the minimum number of academic credits.

### Master’s Degree in Flight Test Engineering (MS FTE)

Students who have an undergraduate degree in engineering from an ABET or equivalent university program (e.g. Washington Accord) are eligible to receive the MS FTE degree.

## Program Educational Objectives

Within a few years of graduation, NTPS Master of Science in Flight Test Engineering alumni can be expected to:

- Demonstrate increasingly highly specialized communications skills required to execute safety critical tests in flight and in the control room.
- Successfully integrate the roles of a Flight Test Engineer throughout the aircraft/system design, development and testing process.
- Validate the airworthiness and mission capability of an air vehicle and/or system.
- Attain positions with increasing responsibilities in managing developmental flight test projects.
- Advance the flight test and evaluation discipline through reports, professional papers, journal articles, and/or symposia presentations.

## Credit System

NTPS operates on a Quarter credit system wherein a minimum of 10 clock hours of classroom instruction equals one quarter credit and 30 hours of practical exercises, including preparation, data analysis, report writing and presentation where students work on their own equals 1 quarter credit hour.

## Prerequisites

The prerequisites for enrollment in the Masters programs are a baccalaureate degree in engineering, physical or computer science, mathematics or technical management. Students presenting other undergraduate credentials will be evaluated on a case-by-case basis, but, in general, students with non-technical degrees are not admitted to the programs.

## Curriculum

In order to graduate, students must take a core curriculum and select one of two specialty tracks (Performance & Flying Qualities or Systems). Courses are offered in modules, nominally one week of theory and two weeks of practical exercises. Compulsory core modules include the Capstone Project (T&E 4003), Test Management (T&E 4002) and depending upon their specialty, a P&FQ Flight Test Laboratory (T&E 4007) if doing the Systems specialization or Introduction to Avionics and Weapons Flight Test (T&E 4201) if doing the P&FQ specialization. Throughout the course of instruction, emphasis is given to flight test means of showing compliance with the Federal Airworthiness Regulations (FAR), the Joint Airworthiness Regulations (JAR) and Military Standard (MIL-STD) for piloted aircraft.

The culmination of the master’s degree is a final project. This project serves as comprehensive project that covers much of the material taught during the entire course. All students in good standing must register for T&E 4003, Capstone Project and Report, in the calendar year in which they anticipate submitting their report. Should they be unable to complete their report in that year, a grade of IP (In Progress) will be assigned but they will be required to re-enroll in T&E 4003 in any subsequent year in which they submit their report. Upon submission of a satisfactory report, a grade will be awarded in place of IP.

Unlike many of the prior elements of the curriculum, this project is an individual event. Teaming with other students is not permitted (except for the purposes of data collection). Thus every student will have the opportunity to take an assignment,
design a test plan, execute that plan, collect and analyze data, and finally produce reports, both oral and written, as an individual effort. The aircraft chosen for the student is one with which the student is not familiar.

Students who are not registered for one of the NTPS professional courses have the option of arranging for use of NTPS assets or submitting a report based on a work related project with the approval of their academic advisor and their employer. In either case the project must represent original work done without collaboration. The student will design a plan of action, execute that plan, collect and analyze data, and produce final reports, both oral and written. Students who have registered for T&E 4003 but who do not submit a satisfactory report within five years after initial enrollment will be considered withdrawn and receive a grade of W (Withdrawal).

Completion of the master’s degree program alone does not qualify graduates as aircrew members (Test Pilot or Flight Test Engineer). In order to be qualified as an aircrew member, the relevant Professional Course or Category II course must be completed. Upon successful completion, students will be awarded a Certificate of Graduation from NTPS attesting to their qualifications for flight test crew duties as a Test Pilot or Flight Test Engineer in addition to the appropriate MS degree. Graduates qualified as aircrew members will be capable of performing first flight, envelope expansion, and engineering evaluations of performance, handling qualities and/or aircraft systems.

### Curriculum

<table>
<thead>
<tr>
<th>Core Modules</th>
<th>Quarter Credits</th>
<th>Theory</th>
<th>Practical</th>
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<tbody>
<tr>
<td>T&amp;E 4001 – Introduction to Flight Test</td>
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<tr>
<td>T&amp;E 4002 – Test Management</td>
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<tr>
<td>T&amp;E 4003 – Capstone Project and Report</td>
<td>3*</td>
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<tr>
<td><strong>Total Core Credits</strong></td>
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<thead>
<tr>
<th>Performance and Flying Qualities Specialty Modules</th>
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<tbody>
<tr>
<td>T&amp;E 4101 or 4111 – Performance Flight Testing I</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>T&amp;E 4102 or 4112 – Performance Flight Testing II</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>T&amp;E 4103 or 4113 – Flying Qualities Flight Testing I</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>T&amp;E 4104 or 4114 – Flying Qualities Flight Testing II</td>
<td>3</td>
<td>2</td>
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<tr>
<td>T&amp;E 4105 – Modern Flight Controls</td>
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<tr>
<td>T&amp;E 4106 – Loads &amp; Flutter Testing</td>
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<td>2*</td>
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<tr>
<td>T&amp;E 4210 – Civil Aircraft Icing Certification</td>
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<tr>
<td><strong>Total P&amp;FQ</strong></td>
<td><strong>35</strong></td>
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</table>

**Minimum Required Systems Credits** | **4** |

**Minimum Core Credits** | **9** |

**Minimum Total Credits Required to Graduate** | **48** |

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<tr>
<th>Systems Specialty Modules</th>
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<tr>
<td>T&amp;E 4201 – Introduction to Avionics and Weapons Flight Test</td>
<td>3*</td>
<td>1</td>
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<tr>
<td>T&amp;E 4202 – Navigation, Communications, and GPS</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>T&amp;E 4203 – Civil Avionics Systems Certification</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>T&amp;E 4204 – RADAR and EW Systems</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>T&amp;E 4205 – Remotely Piloted Vehicle Systems</td>
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</tr>
<tr>
<td>T&amp;E 4206 – Weapons Integration</td>
<td>3</td>
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<tr>
<td>T&amp;E 4207 – Electro-optical and Infrared Systems Flight Test</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>T&amp;E 4208 – Night Vision Imaging System Evaluation</td>
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<td>1</td>
</tr>
<tr>
<td>T&amp;E 4209 – Helmet Mounted Displays</td>
<td>3</td>
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<tr>
<td><strong>Total Systems</strong></td>
<td><strong>37</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Minimum Required P&FQ Credits** | **2** |

**Minimum Core Credits** | **9** |

**Minimum Total Credits Required to Graduate** | **48** |

* Compulsory subjects.
**Professional Courses**

**Test Pilot / Flight Test Engineer Professional Course**

The Professional Course is the ultimate in flight test education. Graduates of this 50 week course are prepared to perform envelope expansion, civil certification, and military suitability flights meeting FAR/JAR certification or military specifications. This course is designed to equip experienced pilots and engineers with the knowledge and practical experience to certify new or modified aircraft to stringent FAR/JAR certification standards or to recommend the aircraft for specific military missions. This is not a basic flight training course. It is an intense academic curriculum designed to produce world class test pilots and flight test engineers.

The course is structured in two phases: The Systems Phase begins in January and the Performance and Flying Qualities Phase begins in July. Students may join the course either in January (‘A’ Class) or July (‘B’ Class). All students start with a three-week module of general topics and then join the applicable phase. At the end of their first phase there will be a field trip to representative flight test centers and aircraft and avionics manufacturers. The capstone project is a limited evaluation of an aircraft unfamiliar to the student. Course subjects are taught in modular form, generally one week of theory followed by two weeks of practical laboratory exercises flight demonstrations, test planning, data collection and analysis, and reporting.

**Required Modules**

- **T&E 4001 Introduction to Flight Test**
- **T&E 4002 Test Management**
- **T&E 4003 Capstone Project**
- **T&E 4101 or 4111 Performance Flight Testing I**
- **T&E 4102 or 4112 Performance Flight Testing II**
- **T&E 4103 or 4113 Flying Qualities Flight Testing I**
- **T&E 4104 or 4114 Flying Qualities Flight Testing II**
- **T&E 4105 Modern Flight Control Systems**
- **T&E 4106 Structures, Loads and Weapons Testing**
- **T&E 4201 Introduction to Avionics and Weapons Flight Test**
- **T&E 4202 Navigation, Communications and GPS Testing**
- **T&E 4203 Civil Avionics Systems Certification Testing**
- **T&E 4204 RADAR and EW Systems Testing *”**
- **T&E 4205 RPV Systems Testing *”**
- **T&E 4206 Weapons Integration Testing *”**
- **T&E 4207 Electro-Optic and Infrared Systems Testing *”**
- **T&E 4208 Night Vision Imaging System Evaluation Techniques *”**
- **T&E 4209 Helmet Mounted Display Systems Testing *”**
- **T&E 4210 Civil Aircraft Icing Certification Testing**

**Master’s Degree**

Students who complete the Test Pilot / Flight Test Engineer Professional Course will have completed all the required modules for the master’s degree program and will graduate with one of the two master’s degrees, depending on their undergraduate qualifications.

**Pre-requisites**

Pilots: A minimum of 750 hours of pilot-in-command time and a bachelor’s degree in math, science or engineering (or equivalent military academy) plus medically qualified to perform flight duties.

Engineers: A bachelor’s degree in math, science or engineering (or equivalent military academy) plus medically qualified to perform flight duties.

All Students: English language proficiency. Non-native English speakers must pass a Test of English as a Foreign Language (TOEFL).

**Performance and Flying Qualities Professional Course**

One Performance and Flying Qualities Course is offered each year. The Performance and Flying Qualities Course is aligned with the Professional Course and with the exception of the final project and field trip, are coincident. Pilots and engineers attend the same theoretical classes and participate in many of the same practical exercises as the students in the applicable portion of the Professional Course. Emphasis is placed on Federal Airworthiness Regulations, the Joint Airworthiness Regulations and military standards for piloted aircraft. Safety in flight test is stressed in all aspects of the courses.

The Performance and Flying Qualities Course is 26 weeks long beginning in July. Students enrolled in the Master of Science degree program will receive credits towards their master’s degree and can complete the remaining modules on a part-time basis.

**Pre-requisites**

Pilots: A minimum of 750 hours of pilot-in-command time and a bachelor’s degree (or equivalent military academy) in math, science or engineering.
Engineers: A bachelor’s degree (or equivalent military academy) in math, science or engineering, plus medically qualified to perform flight duties.

All Students: English language proficiency. Non-native English speakers must pass a Test of English as a Foreign Language (TOEFL).

**Required Modules**

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<thead>
<tr>
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<tbody>
<tr>
<td>T&amp;E 4001</td>
<td>Introduction to Flight Test</td>
<td></td>
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<tr>
<td>T&amp;E 4101 or 4111</td>
<td>Performance Flight Testing I</td>
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<td>Performance Flight Testing II</td>
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<tr>
<td>T&amp;E 4103 or 4113</td>
<td>Flying Qualities Flight Testing I</td>
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</tbody>
</table>

**Systems Professional Course**

One Systems Professional Course is offered each year. The Systems Course is aligned with the Professional Course and with the exception of the final project and field trip, are coincident. Pilots and engineers in this course attend the same theoretical classes and participate in many of the same practical exercises as the students in the applicable portion of the Professional Course. Emphasis is placed on Federal Airworthiness Regulations, the Joint Airworthiness Regulations and military standards for piloted aircraft. Safety in flight test is stressed in all aspects of the courses.

The Systems Flight Test Course is 24 weeks long. The course is held each year from January to June. Throughout the course there are multiple student-planned projects addressing all of the main systems taught.

There are nine modules in the course, which are the same for either fixed or rotary wing including six mandatory modules. Students enrolled in the Master of Science degree program will receive credits towards their master’s degree and can complete the remaining modules on a part-time basis.

**Pre-requisites**

Pilots: A minimum of 750 hours of pilot-in-command time and a bachelor’s degree in math, science or engineering (or equivalent military academy) plus medically qualified to perform flight duties.

Engineers: A bachelor’s degree in math, science or engineering (or equivalent military academy) plus medically qualified to perform flight duties.

All Students: English language proficiency. Non-native English speakers must pass a Test of English as a Foreign Language (TOEFL).

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<tr>
<td>T&amp;E 4201</td>
<td>Introduction to Avionics and Weapons Systems</td>
<td></td>
</tr>
<tr>
<td>T&amp;E 4202</td>
<td>Communications, Navigation, and GPS Testing</td>
<td></td>
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<tr>
<td>T&amp;E 4203</td>
<td>Civil Avionics Certification Testing</td>
<td></td>
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<tr>
<td>T&amp;E 4204</td>
<td>RADAR and Electronic Warfare Testing</td>
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<td>T&amp;E 4205</td>
<td>RPV Systems Testing</td>
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<tr>
<td>T&amp;E 4206</td>
<td>Weapons Integration Testing</td>
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<tr>
<td>T&amp;E 4207</td>
<td>Electro-Optic and Infrared Systems Testing</td>
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<tr>
<td>T&amp;E 4208</td>
<td>Night Vision Imaging Systems Testing</td>
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<tr>
<td>T&amp;E 4209</td>
<td>Helmet Mounted Display Systems Testing</td>
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**Category II Test Pilot / Flight Test Engineer Course**

An eighteen-week course demonstrating techniques to evaluate fixed wing aircraft and helicopters for FAA/EASA Part 23/25/27/29 certification. The course contains the projected EASA Category II training requirements. Training includes flight time in various aircraft/helicopters. Systems, Performance, Flying Qualities and the accompanying FAA certification procedures are emphasized.

**Required Modules**

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<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
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<td>Introduction to Flight Test</td>
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<tr>
<td>T&amp;E 4101 or 4111</td>
<td>Performance Flight Testing I</td>
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<tr>
<td>T&amp;E 4102 or 4112</td>
<td>Performance Flight Testing II</td>
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Depending on the customer’s needs the course can be taken in one of three options: A fixed wing aircraft track that includes light / medium propeller and jet aircraft; A rotary wing track that includes single/multi engine helicopters; and a light aircraft track that only utilizes propeller aircraft under 2000kg.

This course includes six mandatory modules. **Modern Flight Control Systems is optional at additional cost. Students will participate in modules together with NTPS Professional Course students. Students enrolled in the Master of Science degree program will receive credits towards their master’s degree and can complete the remaining modules on a part-time basis.**
**FAA Civil Flight Test Certification and Standardization**

**Initial Course**

This course is for experienced flight test personnel who are new to FAA certification procedures. This six-week course consists of classroom lectures, simulator and aircraft flying in both fixed and/or rotary wing aircraft. The course covers performance, propulsion, stability and control, and systems that are pertinent to certification to the Federal Airworthiness Regulations.

Each graduate will have a review of aerodynamic and systems theory, hands on flight test experience and data comparison to the existing FAR’s. They will be current in standardized FAA flight test certification procedures for fixed and/or rotary wing aircraft. The Initial Course accommodates up to 8 students, including 2 pilots.

Graduates will have a thorough working knowledge of the civil aircraft certification procedures and will be capable of actively working on aircraft certification programs either for the manufacturers or the certification authority.

Graduates of the Initial Civil Flight Test Certification and Standardization Course (T&E 4005) who are enrolled in the master’s degree program will receive credits towards their master’s degree. The remainder of the modules can be taken on a part-time basis.

**Refresher Course**

The FAA two-week certification course is intended as a refresher for past graduates of the initial six-week FAA Flight Test Certification and Standardization Course. The course is specifically structured to provide the necessary knowledge associated with certification of aircraft or aircraft components in accordance with U.S. Federal Airworthiness Regulations (FARs).

The National Test Pilot School has trained all FAA Test Pilot and Flight Test Engineer new-hires in this course since 1994. The continual feedback and input from the graduates and the FAA course monitors have been outstanding resources for updating course material.

**Short Courses**

**Pre-TPS Course**

The Pre-TPS Course helps prepare the student academically for the mathematics and physical sciences required for the long course. It also introduces the student to the aircraft performance and handling qualities testing and airborne systems evaluation techniques they will soon utilize. The six-week course is divided into three two week sections:

- Refresher in mathematics (trigonometry, calculus, differential equations) and physical sciences
- Introduction to systems testing
- Introduction to performance and flying qualities flight testing

Familiarization flights and local area orientation introduce the students to our aircraft and the surrounding test area, while also providing an opportunity to refresh flying skills.

This course, offered twice a year since 1976, has proven to be a very successful preparatory course for pilots and engineers prior to entering test pilot schools both in the US and abroad. Foreign students who speak English as a second language find the course particularly useful as an immersion course in technical English and as an exposure to a different culture. Supplemental English language training can also be arranged for those needing to enhance their English skills.

**Introduction to Fixed Wing Performance and Flying Qualities Flight Testing**

This two week short course introduces aircraft performance and handling qualities testing and is ideally suited to newcomers entering the field, experienced personnel who are returning to the field or need refresher training and flight test managers or support personnel newly assigned to a systems flight test program. It also introduces flight test instrumentation, data handling, and a working knowledge of FAA and military specifications pertaining to piloted aircraft. Theory is tailored to prepare for practical in-flight tests. Seven flights are performed in a medium weight transport aircraft that has been instrumented to serve as an inflight laboratory. The students participate as flight test engineers on each of the sorties, gathering data for post-flight analysis. Students present their findings and recommendations on both mission suitability and regulatory compliance in an oral report to the staff.
Two optional sorties may be flown in light aircraft to allow the students to get hands-on experience in performing flight test techniques as a pilot.

Subjects Covered:
- Introduction
- Aircraft Control Systems
- Jet Cruise
- Dimensional Analysis
- Longitudinal Static Stability
- Takeoff and Landing
- Subsonic Aerodynamics
- Longitudinal Maneuvering Stability
- Closed Loop Handling Qualities
- Standard Atmosphere
- Longitudinal Non-Linearities
- Transonic Aerodynamics
- Pitot-Statics
- Lateral-Directional Static Stability
- Mach Effects on Stability and Control
- Drag Polar
- Equations of Motion & Dynamics
- Energy Management
- Propeller Cruise
- Stalls
- Aero-elasticity
- Climb Performance
- Light Aircraft Engine-Out

Introduction to Rotary Wing Performance and Flying Qualities Flight Testing
This two week short course introduces helicopter performance and handling qualities testing and is ideally suited to newcomers entering the field, experienced personnel who are returning to the field or need refresher training and flight test managers or support personnel newly assigned to a systems flight test program. The scope of the course includes performance, handling qualities, data acquisition and analysis, and FAA and military specifications pertaining to piloted helicopters.

Subjects Covered:
- Longitudinal Static Stability
- Helicopter Aerodynamics
- Lateral-Directional Static Stability
- Pitot-Static Theory
- Longitudinal Dynamic Stability
- Hover Performance
- Lateral-Directional Dynamic Stability
- Level Flight Performance
- Control Response
- Climb/Descent Performance
- Low Speed Characteristics
- Mechanical Controls Characteristics
- Height-Velocity Testing
- Engine Characteristics
- Takeoff and Landing Performance
- Standard Atmosphere

The theoretical classes prepare the students to plan and conduct efficient flight tests. Students participate as flight test engineers on several flights in an instrumented helicopter, gathering data for post-flight analysis. They present their findings and recommendations on mission suitability and regulatory compliance in an oral briefing to the staff.

Introduction to Systems Testing
This two-week course is designed for newcomers entering the field, experienced personnel who are returning to the field or need refresher training and flight test managers or support personnel newly assigned to a systems flight test program. In addition to systems theory and operating practice, the principles and techniques of avionics flight testing are emphasized to provide students with a firm understanding and background necessary to participate immediately in any flight test program upon return to their respective organizations. Practical flight exercises are structured to build on material covered in the classroom lectures and to reinforce the students’ knowledge through practical application of theory.

Operational Test and Evaluation (OT&E) Course
The course teaches basic flight test principles, concepts, and processes. Classroom instruction is reinforced by two demonstrations and two project flights designed to provide “hands-on” experience in flight testing. A final project further reinforces classroom instruction. The final project uses operational requirements/capability documents to plan, flight test, and report on how well an aircraft or system meets mission needs. Previous class projects have included fixed wing, rotary wing, air vehicle and avionics systems evaluations.

Military Course:
This course develops a “customer-centric” view of testing by providing an overview of current OT&E philosophies, processes, concepts and issues. Specifically, the course provides an understanding of how OT&E fits into the acquisition process, the interrelationships of DT&E and OT&E, how test objectives are derived from user requirements, and the importance of relating test results to mission requirements. The course is extremely beneficial to anyone involved in OT&E;
to DT&E testers who interface with OT&E; and to Program Office personnel, Program Managers and Test Managers whose programs are subject to OT&E and who need to certify a system ready for OT&E. The course is continually updated based on customer feedback.

*Foreign and Civil Course:*

The course is suitable for foreign government personnel and for civil airline pilots, engineers, and managers who are in a position to evaluate a new aircraft or systems for their government or company, who need to work with the manufacturer to define special mission or customer requirements, and who must evaluate resulting modifications to ensure an operationally viable aircraft.

*Subjects Covered*

- The Acquisition Process
- Performance & Handling Qualities Test
- DT&E and OT&E Philosophy and Processes
- Techniques
- User Requirements Process
- Overview & Laboratory Exercise
- OT&E test criteria development
- Test Crew Resource Management

- Test Planning and Data Concerns
- Crew Station Evaluation Techniques
- Risk Management and Test Safety
- Workload Assessment Techniques
- Reliability, Maintainability, and Availability
- OT&E Lessons Learned
- Testing Integrated Systems

**Courses On-Demand**

**Upset Training Course**

This course familiarizes the pilot with what to expect under upset conditions. It is well suited to those who have not flown in aircraft that are cleared for inverted flight or that can depart controlled flight.

**Formation / Low Level / Chase Training Course**

This course introduces the pilot to the special requirements of these unique flight conditions. The course would be beneficial to any pilot whose job requires formation, low-level, or chase flight.

**Spin Training Course**

This course familiarizes the pilot with the unique environment of an aircraft in a classic spin. Upright and inverted spins are demonstrated and practiced with both pro-spin and anti-spin control inputs. Different recovery techniques are practiced and evaluated.

**Crew Resource Management for Flight Testers - Initial (3 Days)**

This three day short course is designed to introduce Flight Test aircrew and control room members the coordination concepts and procedures, the necessary attitude which recognizes the importance of good aircrew coordination for effective mission accomplishment, and the skills to implement the crew coordination procedures.

**Crew Resource Management for Flight Testers - Refresher (1 Day)**

This one day short course is designed to review Flight Test aircrew and control room members the coordination concepts and procedures, the necessary attitude which recognizes the importance of good aircrew coordination for effective mission accomplishment, and the skills to implement the crew coordination procedures.

**Aviation Safety Course (3 Days)**

This three-day course is an introduction to flight safety, which is designed for those persons who are involved in flight operations and have had little or no Flight Safety training.
Academic Modules

The academic modules make up the core of the Master’s degree program and professional courses. However, academic modules can be taken on their own as short courses provided that prerequisite modules have been completed and entrance requirements have been met.

T&E 4001 Introduction to Flight Test
A broad look at most of the factors involved in conducting a flight test program. Subject areas include: operational vs. developmental test and evaluation, test pilot and flight test engineer job descriptions, human factors, regulatory requirements, test planning, safety, data analysis and reporting. The student will employ all of these areas as they plan, conduct, and report on a cockpit suitability evaluation performed on an actual aircraft.

T&E 4002 Test Management and Operational Test and Evaluation
A one-week course designed to provide an overview of the flight test and evaluation process and to examine, in detail, the subjects necessary to manage T&E programs. The course is offered to members of government and industry who are either directly involved with managing flight test programs/projects; interface directly with a flight test program and need to understand T&E management issues; and/or are program office personnel who oversee flight test programs. The subject matter is useful for anyone involved with the management of either DT&E or OT&E.

T&E 4003 Capstone Project
Conduct aerospace or flight test engineering projects under supervision of a faculty advisor (or a designated representative) and prepare acceptable reports. The projects may be one that the student is working on and is responsible for in his/her professional career or it may be an independent project selected with approval of NTPS staff.

T&E 4005 FAA Aircraft Certification Procedures
Course has Elements of Introduction to Flight Test and Test Management and Operational Test and Evaluation with emphasis on FAA regulations and procedures for certification of civil aircraft. Course is open to FAA personnel only.

T&E 4101 Performance Flight Testing I
An intensive overview of the methods used to make performance evaluations of propeller driven aircraft. Emphasis is placed on subsonic aerodynamics, pitot statics and reciprocating engine theory.

T&E 4102 Performance Flight Testing II
A supplement to basic performance flight test theory, aimed at evaluations of turbine and jet powered aircraft. An intensive overview of the methods used to make performance evaluations of jet aircraft. Emphasis is placed on supersonic aerodynamics and turbine/jet engine theory. (Prerequisite: Successful completion of T&E 4101)

T&E 4103 Flying Qualities Flight Testing I
An intensive development of the methods used to determine the static stability of fixed-wing aircraft and the implications of incorrect levels. Subjects include the regulatory requirements and flight test techniques involved to determine the longitudinal, lateral, directional, maneuvering, and flight path stability of single and multi-engined aircraft. Included is an introduction to mechanical flight control systems, Mach effects and roll performance.

T&E 4104 Flying Qualities Flight Testing II
An intensive development of the understanding of fixed-wing aircraft dynamic stability. The course covers the driving factors behind aircraft motion, a discussion of desirable qualities, and classic test and evaluation methods. Academic Subjects include aircraft equations of motion, dynamics requirements and flight test techniques, coupling dynamics, closed-loop handling qualities and spins. Included is a brief review of matrices, vectors, axis transforms, differential equations, and Laplace transforms.

T&E 4105 Modern Flight Controls
The intent of the course is to provide a “top-level” introduction to Modern Flight Control Systems (FCS’s). Basic elements of modern FCS’s are reviewed along with typical basic structures and system elements for modern fly-by-wire FCS’s. Modern analysis and simulation tools are introduced and demonstrated using MATLAB® and SIMULINK®, the advanced
engineering computer programs. Students use the basics of MATLAB and the associated Control system Toolbox during the course. Handling qualities criteria and special issues related to modern complex FCS’s such as Pilot Induced Oscillations (PIO’s) are reviewed. The need for systematic closed-loop handling qualities evaluations is emphasized. The effects of common control system feedback implementations are presented using MATLAB and the NTPS variable stability ground simulator (VSGS). Command path shaping and nonlinearities in the command path, such as response limiters, time delay and rate limiting are also introduced and discussed. Course learning objectives are reinforced when students complete two related mini-design/evaluation projects on the VSGS. The objective of the course is to provide a high level of understanding of the Principles, Issues, and Test Methods related to modern FCS’s not to produce FCS designers. Daily review tutorials, oral exams (2) and a final written exam are included in the course. (Desirable Prerequisite: Completion of T&E 4104)

**T&E 4106 Structures, Loads, Flutter, and Vibration**

An extensive review of vehicle structures, loads and flutter testing takes the student from basic properties of materials through advanced instrumentation methods for determining flutter regions and divergence. Industry standards for determining loads limits and freedom from flutter are addressed as well as possible ways for obtaining required data in a limited amount of flight time. A study of the instrumentation installation on an Aeromacchi MB-326 Impala aircraft enhances the students’ knowledge of the correct test methods for in-flight loads determination. Stores clearance may be considered an extension of aircraft loads and flutter testing. Unique stores load and flutter issues are examined as well as theory and methods for clearing stores for external carriage and separation/launch.

**T&E 4107 Aircraft Performance and Flying Qualities Flight Laboratory**

An introductory flying laboratory designed to satisfy the requirement of engineers and flight test support personnel for practical experience in airplane performance, stability and control, handling qualities, flight test instrumentation data acquisition and analysis, and a working knowledge of FAA and Military Standard pertaining to piloted airplanes.

**T&E 4111 Helicopter Performance Flight Testing I**

An intensive overview of the analytical theory and procedures used to evaluate performance characteristics of helicopters. Emphasis is placed on subsonic aerodynamics, rotor blade aerodynamics, pitot static system performance, hover performance, vertical climb performance and level flight performance.

**T&E 4112 Helicopter Performance Flight Testing II**

This course is a continuation of the intensive overview of theory and flight-test techniques employed during the evaluation of helicopter performance characteristics. Emphasis is placed on turboshaft engine performance, climb and descent performance, takeoff and landing performance, and the performance characteristics of multi-engine helicopters. (Prerequisite: Successful completion of T&E 4111).

**T&E 4113 Helicopter Flying Qualities Flight Testing I**

An intensive overview of helicopter equations of motion, static stability characteristics, and engine failure characteristics. Subjects include an introduction to mathematical analysis techniques, theory and flight test procedures to evaluate helicopter static stability characteristics, and engine failure characteristics evaluation procedures. Also included is a brief introduction to mechanical flight control systems and closed loop handling qualities.

**T&E 4114 Helicopter Flying Qualities Flight Testing II**

An intensive overview of the theory and test procedures to evaluate helicopter dynamic stability, controllability, low speed flight characteristics, and ground handling. Subjects include analysis of helicopter dynamic motion, airworthiness certification requirements and flight test techniques for dynamic stability and low speed flight, automatic flight control systems, ground handling test methodology, and closed-loop handling qualities testing. (Prerequisite: Satisfactory completion of T&E 4113).

**T&E 4115 Helicopter Performance and Flying Qualities Flight Laboratory**

This course is designed to satisfy the demand for pilots, engineers, flight test support, and management personnel who need to learn practical experience in helicopter engineering flight test theory and procedures. Scope of the course includes performance, handling qualities, data acquisition and analysis, and FAA and military specifications pertaining to piloted helicopters.
Classroom academics are tailored to prepare the students to plan and conduct efficient flight tests. Six flights are performed in an instrumented helicopter. On each of the flights, students participate as flight test engineers gathering data for post-flight analysis.

Students also assemble and present their findings and recommendations on mission suitability and regulatory compliance in an oral briefing.

**T&E 4201 Introduction to Avionics and Weapons Systems Flight Test**

This course provides the ground work for all subsequent systems modules. This module is designed to provide the “big picture” of Systems testing. The course identifies the differences between systems and vehicle testing with emphasis on digital architecture. 1553 Data Bus architecture is described in detail, and the student is also exposed to ARINC 429, Mil-Std 1760, Firewire, EBR-1553 and other future applications. Time, Space, Position Information is described in its relation and importance to Systems testing. Software development and test and its impact on Flight Test is discussed in detail. The impact to the aircrew in the area of workload and Human Factors is addressed in this module as a first test with new systems. A detailed review of basic electrics, electromagnetics and antennas is presented in this module. Classroom instruction is reinforced with in-class exercises and an available flight demonstration lab (T&E 4201a) and flight evaluation (T&E 4211).

**T&E 4202 Communications, Navigation and GPS Flight Testing**

This course provides the student with an understanding of Avionic Communications and Navigation equipment, their modes of operation and the procedures for evaluating this equipment. The importance of antenna patterns and the methods of conducting Electromagnetic Interference and Compatibility tests will be shown. The module also provides a tutorial in Basic Navigation which will allow non-flyers to converse in the same language as pilots. This course addresses those systems which provide operators with voice communications and data transfer such as radios and data links. The student will be able to identify the parameters which need to be evaluated in these systems in order to show spec compliance or mission suitability. Additionally, the module will address navigational systems that provide position, velocity or acceleration to the operator. An overview of the theory of operation of these systems, typical accuracies and employment is covered.

**T&E 4203 14 CFR Part 23/25/27/29 Avionics Certifications**

The primary emphasis in this academic module will on the evaluation of civil avionics systems and the means of showing compliance with the applicable Federal or Joint Regulations. Since many of the civilian requirements are now applicable in military aircraft, this module is especially important for those individuals involved with showing military compliance with these civil requirements. The importance and proper evaluation of the Flight Management System in today’s automated cockpits will be emphasized. The student will be instructed in the proper evaluation and test of proximity warning systems such as Traffic Alert and Collision Avoidance (TCAS) and Terrain Awareness and Warning Systems (TAWS). Autopilots, Flight Directors, Automated Landing Systems, Weather RADAR, Reduced Vertical Separation Minima and civil certification of GPS will be examined. A history of the FAA, its certification criteria, regulations and other documentation as well as the Human Factors impact to certifications will be addressed. Controls and Displays implementation and Software considerations in the certification process as well as considerations for complex systems are also identified.

**T&E 4204 Flight Test of RADAR and Electronic Warfare Systems**

The basic concept and modes of operation as well as RADAR fundamentals are explained in detail. The course is designed to assist the student in the development and test of airborne RADAR systems. The student is afforded hands-on operation of the Camber Corporation RADAR toolkit. This simulation is a complex, real-world, energy level model of the emitted radio transmissions and incorporates a digital terrain database to show the student effects of changing RADAR parameters on RADAR performance. Lectures cover basic RADAR theory as well as the multi-mode operation of today’s airborne applications. The student will learn the most correct and efficient methods of demonstrating specification compliance and performance of airborne RADARs.

**T&E 4205 Remotely Piloted Vehicle Testing**

This two week Course addresses the unique testing requirements when evaluating an RPV. It is assumed that the participants are generally knowledgeable in manned aircraft flight testing as this course builds on that knowledge. The students will be involved with no fewer than five RPV missions utilizing the NTPS FAA approved Remotely Piloted Vehicle (RPV). Course lectures will introduce the students to RPV-specific testing when compared to manned Fixed and Rotary Wing testing. Issues such as data latency, senescence, Human Factors, Data Link coverage, Failure Modes, Telemetry issues, Navigation, sensor cueing and integration through the autopilot will be addressed. The final exercise will be a student-directed project investigating either a specific sensor payload integration or assessing one aspect of performance or handling qualities. This
course is offered twice during the Academic year; in the Spring the final exercise is on an avionics sensor; in the Fall the final exercise is replaced with a student-directed project investigating the RPV’s ability to conduct Performance and Handling Qualities Flight Test Techniques (FTTs).

**T&E 4206 Air-to-Air and Air-to-Ground Weapons Integration**

This module begins with an overview and description of Mil-Std-1760D, Interface Standard for Aircraft/Store Electrical Interconnection System as the baseline for Weapons Integration. The proper evaluation of a Stores Management System is covered in detail by using specific test cases. A generic set of evaluation guidelines is presented for Air-to-Air and Air-to-Ground weapons testing, and no less than 20 weapons types are presented as examples. Safety footprints, hazard analysis and special considerations for live-fire exercises are addressed. Error budgeting and analysis are discussed in relation to weapons accuracy and consistency.

**T&E 4207 Electro-Optics and Infrared Systems Flight Testing**

A review of basic Infrared and Electro-optic theory focuses on the application of these theories. The initial portion of the course reviews radiation theory while the remainder presents a detailed analysis of typical active and passive Electro-optical systems components. The instruction stresses the most correct and efficient means of evaluating these systems and predicting systems performance in both ground and flight environments. The course will also address infrared countermeasures and counter-countermeasures and how to evaluate their effectiveness.

**T&E 4208 Night Vision Imaging Systems Theory and Evaluation Techniques**

This course is designed to provide technical and human factors information regarding NVGs, NVIS (NVG compatible) lighting, and the integration of both in the aircraft. Emphasis is placed on system evaluation techniques, which are based on years of practical experience in a number of different aircraft. Topical information in the academic lectures is reinforced during NVG lab and aircraft demonstrations.

**T&E 4209 Helmet Mounted Displays**

This course is designed to provide technical and human factors information regarding Helmet Mounted Display (HMD) systems. Emphasis is placed on various approaches to system design that impact usability and methods of test that will identify potential deficiencies. Topical information in the academic lectures is reinforced during laboratory and classroom demonstrations.

**T&E 4210 Civil Aircraft Icing Certification**

An in-depth discussion of icing cloud microphysics and atmospheric thermodynamics, FAA icing certification requirements, and ground and flight test procedures necessary to validate aircraft ice protection systems and show compliance with the Federal Aviation Regulations.

**T&E 4301 Independent Research**

Independent research on a topic selected with the approval of the student’s advisor.
Financial Information

Tuition Fees

Tuition is determined by contract for each student, and often varies due to the specific requirements specified by the sponsoring agency, including variations in the types of aircraft to be flown by the student. The tuition and all fees are detailed in the contract.

The National Test Pilot School is committed to providing a superb educational experience at a reasonable cost. For more detailed information about tuition and fees, contact the Business Office at 661/824-2977.

Tuition for the current academic year is posted on the NTPS website (http://www.ntps.edu/HTML/Schedule/). Bills for tuition are issued when a student registers and are payable on the first day of class. There are no incidental fees at NTPS but, if a student employs NTPS assets such as aircraft or simulators during his or her project research, the use of those assets and any fees for such use will be negotiated on an individual basis. All fees are payable in U.S. dollars. If a loan is obtained, the student will have to repay the full amount of the loan plus interest, less the amount of any refund, and that, if the student receives federal student financial aid funds, the student is entitled to a refund of the money not paid from the federal financial aid funds. If you, the student, default on a federal or state loan, both the following may occur: (1) The federal or state government or a loan guarantee agency may take action against the student, including garnishing an income tax refund; and (2) The student may not be eligible for any other government financial assistance at another institution until the loan is repaid. The National Test Pilot School is not a Title IV university and therefore cannot participate in federal or state financial aid programs and does not provide any other form of financial aid or student loans.

Refund/Cancellation Policy

STUDENT’S RIGHT TO CANCEL: Students have the right to cancel the enrollment agreement and obtain a refund of charges paid through attendance at the first class session, or the seventh day after enrollment, whichever is later.

A full refund of all fees will be available if requested in writing to Director NTPS. Refunds will be made on a pro rata basis starting from the first day of commencement of the course.

The method of delivery in communication by the student will be in writing, whether withdrawal can be accomplished by conduct or not. The date that the withdrawal is considered effective, is the date that the communication from the student is received by NTPS.

A pro rata refund is calculated as follows:

- The amount owed equals the daily charge for the program (total institutional charge, divided by the number of days or hours in the program), multiplied by the number of days student attended, or was scheduled to attend, prior to withdrawal. The effective date for this computation will be the date the requested refund was received by NTPS.
- All amounts paid by the student in excess of what is owed shall be refunded.
- All amounts that the student has paid shall be subject to refund.
- For purposes of determining a refund, a student shall be considered to have withdrawn from an educational program when he or she withdraws or is deemed withdrawn.

Fees can be applied in full for a later course.

NTPS shall refund any credit balance on the student’s account within 45 days after the date of the student’s completion of, or withdrawal from, the educational program in which the student was enrolled.

NTPS shall maintain a cancellation and withdrawal log, kept current on a monthly basis, which shall include the names, addresses, telephone numbers, and dates of cancellations or withdrawal of all students who have cancelled the enrollment agreement with, or withdrawn from, the institution during the calendar year.

The National Test Pilot School reserves the right to cancel any course and return all fees in the event of insufficient registration. In this event, NTPS will not be responsible for any expenses incurred by the registrants, including but not limited to airline cancellation charges or hotel deposits.
# Courses (2014)

<table>
<thead>
<tr>
<th>Professional Course</th>
<th>Cost</th>
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<tbody>
<tr>
<td><strong>Test Pilot / Flight Test Engineer Professional Course</strong> (1 Year)*</td>
<td>$915,000/pilot $510,000/eng</td>
</tr>
<tr>
<td>January 06, 2014 - December 19, 2014 (Class 14A) / June 23, 2014 - June 19, 2015 (Class 14B)</td>
<td></td>
</tr>
<tr>
<td><strong>Performance and Flying Qualities Professional Course</strong> (6 Months)*</td>
<td>$600,000/pilot $300,000/eng</td>
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<tr>
<td>June 23, 2014 - December 19, 2014 (Class 14B)</td>
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<tr>
<td><strong>Systems Professional Course</strong> (6 Months)*</td>
<td>$410,000/pilot $300,000/eng</td>
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<tr>
<td>January 06, 2013 – June 20, 2014 (Class 14A)</td>
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<tr>
<td><strong>Test Pilot / Flight Test Engineer Course</strong> (Category II)</td>
<td>$320,000/pilot $170,000/eng</td>
</tr>
<tr>
<td>June 09 – October 10, 2014 (Light A/C) $170,000/pilot $90,000/eng</td>
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<tr>
<th>Short Courses</th>
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<tr>
<td>Pre-TPS Course</td>
<td>$25,000/pilot $25,000/eng</td>
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<tr>
<td>November 04 – December 13, 2013 (Class 14A) / May 12 – June 20, 2014 (Class 14B) November 10 – December 19, 2014 (Class 15A)</td>
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<tr>
<td><strong>Introduction to FW Performance &amp; Flying Qualities Flight Testing</strong></td>
<td>$9,900</td>
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<tr>
<td><strong>Introduction to RW Performance &amp; Flying Qualities Flight Testing</strong></td>
<td>$12,000</td>
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<tr>
<td>March 10 – March 21, 2014</td>
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<tr>
<td><strong>Introduction to Systems Testing</strong></td>
<td>$9,900</td>
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<tr>
<td><strong>Operational Test and Evaluation (OT&amp;E) Course</strong></td>
<td>$9,900</td>
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<tr>
<td>October 15 – November 01, 2013 / February 11 – February 28, 2014 / April 22 – May 9, 2014 / October 7 – October 24, 2014</td>
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<tr>
<td><strong>RPV Flight Testing</strong></td>
<td>$15,000</td>
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<td>May 26 - June 6, 2014 / November 24 - December 9, 2014</td>
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<tr>
<td><strong>Night Vision Imaging System Evaluation</strong></td>
<td>$12,500/pilot $9,500/eng</td>
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<td>November 4 - November 15, 2013</td>
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<table>
<thead>
<tr>
<th>Courses Scheduled On Demand</th>
<th>Cost</th>
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<tbody>
<tr>
<td><strong>Civil Flight Test Certification and Standardization Course</strong> - Initial FW/RW (6 Week)</td>
<td>$75,000/pilot $40,000/eng</td>
</tr>
<tr>
<td><strong>Civil Flight Test Certification and Standardization Course</strong> - Refresher FW (2 Week)</td>
<td>$25,000/pilot $15,000/eng</td>
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<tr>
<td><strong>Technical Pilot Course</strong></td>
<td>$20,000</td>
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<tr>
<td><strong>Upset / Spin / and Formation / Low-Level / Chase Training</strong></td>
<td>$10,000 / $15,000 / $10,000</td>
</tr>
<tr>
<td><strong>Crew Resource Management for Flight Testers</strong> - Initial</td>
<td>$1,500</td>
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<tr>
<td><strong>Crew Resource Management for Flight Testers</strong> - Refresher</td>
<td>$500</td>
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<tr>
<td><strong>Avionics Civil Certification Course</strong> (Part 23/25)</td>
<td>$9,500</td>
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<tr>
<td><strong>Part 23/25 Avionics Civil Certification Course</strong> (1 Week, Academics Only)</td>
<td>$2,500</td>
</tr>
<tr>
<td><strong>Avionics and Weapons Systems Flight Test</strong> (Academics Only)</td>
<td>$2,500</td>
</tr>
<tr>
<td><strong>English Training prior to Pre-TPS</strong> (8 Weeks)</td>
<td>With Accommodation/$40,000 Without Accommodation/$32,000</td>
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* These modules are limited to US citizens or organizations approved by the US Department of State.
### Individual Academic Modules (2014)

<table>
<thead>
<tr>
<th>Core Academic Modules</th>
<th>Cost</th>
<th>Course Dates</th>
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<tbody>
<tr>
<td>T&amp;E 4001 Professional Long Course Introduction</td>
<td>$5,000</td>
<td>Jan 6 - Jan 24, 2014, Jun 23 - July 11, 2014</td>
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<tr>
<td>T&amp;E 4003 Capstone Project</td>
<td>$2,500</td>
<td>TBD</td>
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<thead>
<tr>
<th>Performance &amp; Flying Qualities Academic** Modules</th>
<th>Cost</th>
<th>Course Dates</th>
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<tbody>
<tr>
<td>T&amp;E 4101 Performance Flight Testing I</td>
<td>$2,500</td>
<td>July 14 - July 18, 2014</td>
</tr>
<tr>
<td>T&amp;E 4111* Helicopter Performance Flight Testing I</td>
<td>$2,500</td>
<td>July 14 - July 18, 2014</td>
</tr>
<tr>
<td>T&amp;E 4102 Performance Flight Testing II</td>
<td>$2,500</td>
<td>Aug 04 - Aug 08, 2014</td>
</tr>
<tr>
<td>T&amp;E 4112* Helicopter Performance Flight Testing II</td>
<td>$2,500</td>
<td>Aug 04 - Aug 08, 2014</td>
</tr>
<tr>
<td>T&amp;E 4106 Structures, Loads, Flutter, and Vibration</td>
<td>$4,000</td>
<td>Nov 03 - Nov 07, 2014</td>
</tr>
<tr>
<td>T&amp;E 4107 Introduction to Airplane Performance &amp; Flying Qualities</td>
<td>$9,900</td>
<td>See FW P&amp;FQ Short Course</td>
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<tr>
<td>T&amp;E 4115 Introduction to Helicopter Performance &amp; Flying Qualities</td>
<td>$12,000</td>
<td>See RW P&amp;FQ Short Course</td>
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<tr>
<th>Systems Academic** Modules</th>
<th>Cost</th>
<th>Course Dates</th>
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<tr>
<td>T&amp;E 4201 Introduction to Avionics &amp; Weapons Systems Flight Testing</td>
<td>$2,500</td>
<td>Jan 27 - Jan 31, 2014</td>
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<tr>
<td>T&amp;E 4205* RPV Flight Testing</td>
<td>$15,000</td>
<td>See RPV Flight Testing Short Course</td>
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<tr>
<td>T&amp;E 4206* Air-to-Air and Air-to-Ground Weapons Integration</td>
<td>$4,000</td>
<td>June 9 - June 13, 2014</td>
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<tr>
<td>T&amp;E 4207* Electro-Optic and Infrared Systems Flight Testing</td>
<td>$2,500</td>
<td>Apr 7 - Apr 11, 2014</td>
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<tr>
<td>T&amp;E 4208* Night Vision Imaging System Evaluation Techniques</td>
<td>$5,000</td>
<td>Apr 28 - May 2, 2014</td>
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<tr>
<td>T&amp;E 4209* Helmet Mounted Display Test and Evaluation</td>
<td>$2,500</td>
<td>May 12 - May 16, 2014</td>
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<tr>
<td>T&amp;E 4210 Civil Aircraft Icing Certification</td>
<td>$1,500</td>
<td>TBD</td>
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* These modules are limited to US citizens or organizations approved by the US Department of State.

** Pricing information for an entire module (including labs) is available upon request.

STRF Fee $ 17.50 (50c per $1000 of tuition)

** Pricing information for an entire module (including labs) is available upon request.

* These modules are limited to US citizens or organizations approved by the US Department of State.

** Pricing information for an entire module (including labs) is available upon request.

STRF Fee $ 17.50 (50c per $1000 of tuition)
State of California Student Tuition Recovery Fund (STRF)

The State of California created the Student Tuition Recovery Fund (STRF) to relieve or mitigate economic losses suffered by California residents who were students attending schools approved by, or registered to offer Short-term Career Training with the Bureau for Private Post-Secondary and Vocational Education (Bureau).

You must pay the state-imposed assessment for the Student Tuition Recovery Fund (STRF) if all of the following applies to you:

1. You are a student in an educational program, who is a California resident, or are enrolled in a residency program, and prepay all or part of your tuition either by cash, guaranteed student loans, or personal loans, and
2. Your total charges are not paid by any third-party payer such as an employer, government program or other payer unless you have a separate agreement to repay the third party.

You are not eligible for protection from the STRF and you are not required to pay the STRF assessment, if either of the following applies:

1. You are not a California resident, or are not enrolled in a residency program, or
2. Your total charges are paid by a third party, such as an employer, government program or other payer, and you have no separate agreement to repay the third party.

The State of California created the Student Tuition Recovery Fund (STRF) to relieve or mitigate economic losses suffered by students in educational programs who are California residents, or are enrolled in a residency programs attending certain schools regulated by the Bureau for Private Postsecondary and Vocational Education.

You may be eligible for STRF if you are a California resident or are enrolled in a residency program, prepaid tuition, paid the STRF assessment, and suffered an economic loss as a result of any of the following:

1. The school closed before the course of instruction was completed.
2. The school's failure to pay refunds or charges on behalf of a student to a third party for license fees or any other purpose, or to provide equipment or materials for which a charge was collected within 180 days before the closure of the school.
3. The school's failure to pay or reimburse loan proceeds under a federally guaranteed student loan program as required by law or to pay or reimburse proceeds received by the school prior to closure in excess of tuition and other costs.
4. There was a material failure to comply with the Act or this Division within 30 days before the school closed or, if the material failure began earlier than 30 days prior to closure, the period determined by the Bureau.
5. An inability after diligent efforts to prosecute, prove, and collect on a judgment against the institution for a violation of the Act.
Faculty and Staff

In aspiring to meet its mission goals, the National Test Pilot School has assembled an highly qualified team of practicing professionals. Its faculty of test pilots, flight test engineers, and scientists possess broad experience in industry, defense, air transportation, and academia and has the teaching experience necessary to integrate the theory of the classroom with the realities of the cockpit.

Senior Management of NTPS

Peterson, Allen L.

Hill, Michael L.
Director of Business Operations and Test Pilot Instructor. B.S., California Polytechnic University, M.S., M.B.A., Embry-Riddle Aeronautical University. Graduate, U.S. Naval Test Pilot School.

Ingham, Lester A.
Director, NFTI & FTE Instructor. B.Eng., P.D.E. Stellenbosch University. M.S., National Flight Test Institute. Ph.D., Stellenbosch University, FTE Graduate NTPS.

McShea, Robert.
Deputy Director, Systems Testing. Flight Test Engineering Instructor. B.S., Syracuse University.

Lewis, Gregory V.
Vice President/ Director and Test Pilot Instructor. B.S., M.S., Massachusetts Institute of Technology. M.S., Golden Gate University. Graduate, US Air Force Test Pilot School. FAA Designated Engineering Representative.

Solski, Ed.

Pecile, Nicola.
Chief of Operations, B.S. M.S., Italian Air Force Academy, University of Rome, Graduate EPNER.
Instructors of NTPS

**Antonio, Chuck.**
Aerospace Medicine and Night Vision Systems Pilot Instructor. B.S., Georgia Institute of Technology. B.S., Armstrong State University. M.D., Medical University of South Carolina.

**Arush, Ilan.**

**Cherry, Steve.**

**Clarke, Ken.**

**Donovan, Terrence J.**

**Di Francesco, Gabriele.**
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**Donovan, Terrence J.**

**Di Francesco, Gabriele.**
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**Hebmann, Rigel.**
Test Pilot Instructor, Empire Test Pilot School Graduate, Former EPNER Commandant. B.S., French Air Force Academy.

**Nelson, Kent.**
Operational Test and Evaluation Instructor. B.S., University of Wyoming. M.S., University of Southern California. Graduate, USAF Test Pilot School.

**Norton, John.**
Operational Test and Evaluation Instructor. B.S., United States Air Force Academy. M.S., Aeronautical Science, Embry-Riddle Aeronautical University. M.S., Mechanical Engineering, California State University, Fresno. Graduate of Flight Test Short Course, National Test Pilot School.
Olson, Ryan.

Lotterio, Marco.
P&FQ Instructor. M.S., University of Pisa.

Reukau, Paul.
Flight Test Instructor, BS in Aerospace Engineering, MS in Mechanical Engineering

Searfoss, Rick.

Speedy, Nigel.

Stewart, Russ.

Swaney, Mark.
Systems Instructor. B.S., University of Cincinnati, M.S. University of Southern California. Graduate, U.S. Naval Test Pilot School.

Tsolekas, Ioannis.

McElroy, Chris.
Systems Instructor, B.Sc. (Hons) Computer Science, University of Strathclyde, UK. M.S. Aeronautical Science and Human Factors, Embry-Riddle Aeronautical University. Incorporated Engineer UK.
Support Personnel

Matos, Lynda.
Business Support Manager.

Gonzalez, Veronica
Librarian/Administration Specialist

Litchfield, Brandon.
Life Support Officer & Assistant Scheduler.

Davies, Sonnett.
Receptionist

Holliday, Maria.
Scheduler.

Nik Matos
Maintenance

Stanton, Sindy.
Student Services

Whittemore, Andrea,
Assistant Registrar.

Delaney, Mike.
Technical Support/Flight Test Engineer, B.S. University of Pittsburgh.

Lewis, Steve.
Network Administrator, Multi-Platform Certified Network Engineer, Advanced Career College MCSE, MCP+I, A+.

Graduate Assistants

Milliard, Craig.
B.S., Embry-Riddle Aeronautical University.

Richard Starke.
B.S., University of Cape Town.