

| | | | |
|-------------------------|--|-----------------|--------------|
| NAME | CHANG, ING | DEGREES GRANTED | DATE |
| BIRTHDATE | [REDACTED] | M.S. | June 5, 1965 |
| BIRTHPLACE | Anhwei Province, China | Ph.D. | May 17, 1969 |
| PARENT OR NEAR RELATIVE | Mr. Chih-Jui Chang | | |
| ADDRESS OF ABOVE PERSON | #9, 9 Lin; #81, Sec. 2 Hsin Sheng S.Rd. Taipei, Taiwan, China | | |

RECORD OF FELLOWSHIPS ASSISTANTSHIPS AND HONORS

1963-64-Grad. Scholarship in Mech. Eng'g.
 1964-65-Grad. Ass't.-Fellowship in Mech. Eng'g.
 1965-66-Grad. Ass't.-Fellowship in Mech. Eng'g.
 1967-68-Grad. Fellowship in Mech. Eng'g.

DATE ADMITTED TO GRADUATE STUDY: SEPTEMBER 1963

MAJOR FIELD OF STUDY: MECHANICAL ENGINEERING

PREVIOUS COLLEGES ATTENDED AND DEGREES

RICE INSTITUTE
National Taiwan University, B.S. 1961

| COURSE NUMBER AND TITLE | CLASS | CREDITS | GRADES | | | |
|--|-------|---------|--------|----|------|---|
| | | | A | B | C | D |
| September 1963-June 1964 | | | | | | |
| GRADUATE | | | | | | |
| M.E.423-Engineering Mathematics | 3 | 0 | 6 | 2+ | 1 | - |
| M.E.590a-Heat Transfer | 3 | 0 | 3 | 1 | | |
| M.E.623a-Adv.Eng'g. Analysis | 3 | 0 | 3 | 1 | | |
| M.E.673a-Adv. Fluid Dynamics I | 3 | 0 | 3 | 1 | | |
| M.E.682b-Convective Heat Transfer | 3 | 0 | 3 | 1 | | |
| M.E.570b-Mechanical Vibrations | 3 | 0 | 3 | | 1+ | |
| M.E.674b-Adv. Fluid Dynamics II | 3 | 0 | 3 | | 1- | 1 |
| Math.530b-Topics in Applied Math. | 3 | 0 | 3 | | 2 | |
| September 1964-June 1965 | | | | | | |
| GRADUATE | | | | | | |
| M.E.653-Research and Thesis | | | | | 2+ | |
| M.E.693-Advanced Gas Dynamics | 3 | 0 | 6 | 1- | 1 | 1 |
| M.E.655a-Theory of Optimum Aerodynamic Shapes | 3 | 0 | 3 | | 2 | |
| M.E.654b-Theory of Optimum Flight Paths | 3 | 0 | 3 | | 2 | |
| September 1965-June 1966 | | | | | | |
| GRADUATE | | | | | | |
| Engl.571a-Applied Math. III; Distributed-Parameter Problems: Perturbation Theory | 3 | 0 | 3 | 1- | | |
| Elec.605a-Adv. Electromag. Field Theory | 3 | 0 | 3 | | Drop | |
| Mech.694a,b-Hypersonic Gas Dynamics Special Research Topics in M.E. | 3 | 0 | 6 | 2+ | 1 | |
| Engl.671b-Applied Math IV; Approximation Methods; Ordinary & Partial Diff. Equations | 3 | 0 | 3 | | 2 | |
| Mech.615b-Advanced Dynamics (Con't. on back) | 3 | 0 | 3 | | 1- | |

MASTER'S THESIS

DATE ACCEPTED: May 28, 1965

TITLE "Heat Transfer in a Pipe with Fully Developed Turbulent Flow and a Stepwise Change in Wall Temperature According to the Turbulent Transport Theory of W.D. Rannie".

DOCTOR'S THESIS

DATE ACCEPTED: May 14, 1968

TITLE "Radiant Heat Transfer in an Absorbing -Emitting Gas Flowing through a Long Circular Pipe".

PASSED LANGUAGE EXAMINATION.

| LANGUAGE | DATE |
|----------|--------------|
| French | Oct. 3, 1964 |

NOTES

March 17, 1965-Candidacy for the Master's degree approved.
 Nov. 17, 1967-Candidacy for the Ph.D. degree approved.

RECORD OF EXAMINATIONS

May 14, 1965-Passed oral examination for the M.S. degree.
 June 12, 1968-Passed oral examination for the Ph.D. degree.

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James H. Williams
 REGISTRAR

RICE UNIVERSITY
HOUSTON, TEXAS

GRADUATE
OFFICE OF

CHANG, ING

#9, 9 Lin; #81 Sec. 2 Hsin Sheng S.R
 Taipei, Taiwan, China

JUN 28 1969

OFFICIAL TRANSCRIPT

COURSE NUMBER AND TITLE

SEPTEMBER, 1966 - JUNE, 1967

| COURSE NUMBER AND TITLE | CR | PR | GR | SR | GR | SR | GR | SR | GR | SR |
|---------------------------------|----|----|----|----|----|----|----|----|-----|----|
| ECH600A RESEARCH AND THESIS | | | | 0 | | | | | SAT | |
| ECH603A RADIATIVE HEAT TRANSFER | 3 | 0 | 3 | | | | | | 2+ | 1 |
| MECH603A RAREFIED GAS FLOW | | | | | | | | | 1 | |
| ECH600B RESEARCH AND THESIS | | | | 0 | | | | | SAT | |
| ECH699B GAS DYNAM-RADIANT MEDIA | 3 | 00 | 03 | | | | | | 1 | |

SEPTEMBER, 1967 - JUNE, 1968

| | | | | | | | | | | |
|-----------------------------|---|---|---|--|--|--|--|--|-----|--|
| ECH600A RESEARCH AND THESIS | 0 | 0 | 0 | | | | | | SAT | |
| ECH600B RESEARCH AND THESIS | 0 | 0 | 0 | | | | | | SAT | |

JANUARY 1969

| | | | | | | | | | | |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|
| MECH700B NON RESIDENT RESEARCH | | | | | | | | | | |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|

NOTES
(CONTINUED FROM PAGE 1)

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UNDER "NOTES"

James M. Williams
REGISTRAR

JUN 28 1969

OFFICIAL TRANSCRIPT

RICE UNIVERSITY

Office of the Registrar

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COURSE CREDIT Credit is expressed in semester hours.

GRADING SYSTEM

| | | |
|---------------------|----------------------|-------------------------|
| Until Fall 1983 | 1 Very High Standing | P Pass |
| | 2 High Standing | WD Withdrawn |
| | 3 Medium Standing | Sat Satisfactory |
| | 4 Low Standing | F Failure in a course |
| | 5 Failure | taken on a Pass/Fail |
| | | basis |
| Beginning Fall 1983 | A Very High Standing | P Pass |
| | B High Standing | W Withdrawn |
| | C Medium Standing | S Satisfactory |
| | D Low Standing | NG No grade reported |
| | F Failure | I Incomplete |
| | | ** Temporary Incomplete |

RICE DOES NOT RELEASE GRADE AVERAGES OR CLASS RANKS.

DEPARTMENT CODES

| | | |
|-----------------------------|--------------------------------|--------------------------------|
| ACCO Accounting | ELEC Electrical Engineering | MSCI Materials Science |
| ADMN Administrative Science | ENGI Engineering | MUSI Music |
| ANTH Anthropology | ENGL English | NAVA Naval Science |
| ARCH Architecture | ENVI Environmental Engineering | PHED Physical Education |
| ARTS Art | FREN French | PHIL Philosophy |
| BEHA Behavioral Science | GEOL Geology | PHYS Physics |
| BIOC Biochemistry | GERM German | POLI Political Science |
| BIOL Biology | HART History of Art | PORT Portuguese |
| CENG Chemical Engineering | HIST History | PSYC Psychology |
| CHEM Chemistry | LATI Latin | RELI Religious Studies |
| CIVI Civil Engineering | LING Linguistics | RUSS Russian |
| CLAS Classics | MANA Managerial Studies | SOCI Sociology |
| COMP Computer Science | MASC Mathematical Sciences | SPAC Space Physics & Astronomy |
| ECON Economics | MATH Mathematics | SPAN Spanish |
| EDUC Education | MECH Mechanical Engineering | THEA Theatre |
| | MILI Military Science | |