

Nomor: 130017/IT1.A/DA.07/VII/IJZ/1/2020

menyatakan bahwa

Jonatan Kevin Daniel

lahir pada tanggal 10 Agustus 1998 di Tangerang

diterima pada Tahun Akademik 2016/2017

dengan Nomor Induk Mahasiswa 13016025

telah menyelesaikan studi dan memenuhi segala syarat pendidikan kesarjanaan

pada Program Studi

Teknik Kimia

pada tanggal 30 Juni 2020.

Oleh sebab itu, kepadanya diberikan gelar

Sarjana Teknik (S.T.) dengan Predikat Cum Laude

beserta segala hak dan kewajiban yang melekat pada gelar tersebut.

Diberikan di Bandung pada tanggal 18 Juli 2020.



Dekan
Fakultas Teknologi Industri,

Rektor,

Prof. Brian Yulianto, Ph.D.
NIP 197507272006041005

Prof. Reini Wirahadikusumah, Ph.D.
NIP 196810251992032001

Ijazah ini diberikan berdasarkan Surat Keputusan Rektor Nomor: 242/IT1.A/SK/DA.06/2020

Institut Teknologi Bandung terakreditasi A berdasarkan Surat Keputusan BAN-PT Nomor: 5234/SK/BAN-PT/Akred/PT/XII/2017

Ijazah ini dapat diverifikasi di <https://akademik.itb.ac.id/alumni>

Number: 130017/IT1.A/DA.07/VII/IJZ/1/2020

herewith certifies that

Jonatan Kevin Daniel

born in *Tangerang* on *August 10, 1998*

admitted in the Academic Year *2016/2017*

with Student Registration Number *13016025*

has successfully fulfilled all the requirements of the Undergraduate Program in

Chemical Engineering

on *June 30, 2020*

and therefore has been granted the degree of

Bachelor of Science in Chemical Engineering (Cum Laude)

with all the rights and responsibilities belonging to that degree.

Awarded in Bandung on *July 18, 2020.*



Dean of
Faculty of Industrial Technology,

Prof. Brian Yulianto, Ph.D.
NIP 197507272006041005



Rector,

Prof. Reini Wirahadikusumah, Ph.D.
NIP 196810251992032001

This certificate is issued based on the Decree of the Rector No: *242/IT1.A/SK/DA.06/2020*
Institut Teknologi Bandung is accredited "A" based on the Decree of BAN-PT No: *5234/SK/BAN-PT/Akred/PT/XII/2017*
The authenticity of this certificate can be verified at <https://akademik.itb.ac.id/alumni>



INSTITUT TEKNOLOGI BANDUNG

FAKULTAS TEKNOLOGI INDUSTRI

Jalan Ganesha 10 Bandung 40132 Telp. (022) 2504551 Fax. (022) 2509406

TRANSKRIP AKADEMIK

No: 130017/IT1.C07/DA.07/VII/TRS/2020

Nama : Jonatan Kevin Daniel
 NIM : 13016025
 Tempat, Tanggal Lahir : Tangerang, 10 Agustus 1998
 Tahun Masuk ITB : 2016
 Fakultas/Sekolah : Fakultas Teknologi Industri
 Program Studi : Sarjana Teknik Kimia
 Jalur Pilihan Teknologi Bioproses
 Gelar : Sarjana Teknik (S.T.)



| Semester 1 | | | | Semester 2 | | | |
|------------|---|-----|-------|------------|---|-----|-------|
| Kode | Mata Kuliah | SKS | Nilai | Kode | Mata Kuliah | SKS | Nilai |
| MA1101-13 | Matematika IA | 4 | AB | MA1201-13 | Matematika IIA | 4 | A |
| FI1101-13 | Fisika Dasar IA | 4 | AB | FI1201-13 | Fisika Dasar IIA | 4 | A |
| KI1101-13 | Kimia Dasar IA | 3 | A | KI1201-13 | Kimia Dasar IIA | 3 | A |
| KU1011-13 | Tata Tulis Karya Ilmiah | 2 | A | KU1101-13 | Pengantar Rekayasa & Desain I | 2 | A |
| KU1001-13 | Olah Raga | 2 | A | KU1201-13 | Pengantar Rekayasa & Desain II | 2 | B |
| KU1072-13 | Pengenalan Teknologi Informasi B | 2 | B | KU1267-13 | Menggambar Teknik | 2 | B |
| | | | | KU1024-13 | Bahasa Inggris | 2 | B |
| Semester 3 | | | | Semester 4 | | | |
| Kode | Mata Kuliah | SKS | Nilai | Kode | Mata Kuliah | SKS | Nilai |
| TK2101-13 | Pengenalan Teknik Kimia | 2 | B | KU4078-19 | Studium Generale | 2 | A |
| TK2201-13 | Neraca Massa dan Energi | 3 | AB | KI2051-13 | Kimia Organik | 3 | BC |
| TK2103-13 | Termodinamika Teknik Kimia | 3 | AB | TK2102-13 | Metoda Pengukuran & Analisis | 3 | BC |
| TK2104-13 | Analisis Matematika Teknik Kimia | 2 | AB | TK2202-13 | Teknik Reaksi Kimia I | 3 | BC |
| TK2105-13 | Statistika Teknik Kimia | 2 | B | TK2203-13 | Operasi Perpindahan Kalor | 3 | A |
| TK2106-13 | Komputasi Teknik Kimia | 3 | B | TK2204-13 | Mikrobiologi Industri | 2 | AB |
| TK2107-13 | Mekanika Fluida dan Partikel | 3 | A | TK2205-13 | Biomolekul dalam Sistem Sel | 3 | AB |
| Semester 5 | | | | Semester 6 | | | |
| Kode | Mata Kuliah | SKS | Nilai | Kode | Mata Kuliah | SKS | Nilai |
| KU2062-13 | Agama dan Etika Protestan | 2 | A | KU2071-13 | Pancasila dan Kewarganegaraan | 2 | A |
| TK3001-13 | Laboratorium Dasar Teknik Kimia | 2 | BC | TK3003-13 | Laboratorium Teknologi Bioproses | 2 | AB |
| TK3101-13 | Proses Pemisahan | 3 | B | TK3201-13 | Peristiwa Perpindahan | 3 | B |
| TK3102-13 | Sistem Utilitas | 3 | B | TK3202-13 | Pengendalian Proses | 3 | B |
| TK3104-13 | Dasar Dasar Teknologi Bioproses | 3 | A | TK3206-13 | Perancangan dan Analisis Bioreaktor | 3 | A |
| TK3203-13 | Pengendalian Lingkungan Industri Kimia | 2 | B | TK3207-13 | Teknologi Enzim | 2 | AB |
| TK4007-13 | Metabolisme Mikrobial | 3 | BC | TK4029-13 | Proses Membran Industrial | 3 | A |
| Semester 7 | | | | Semester 8 | | | |
| Kode | Mata Kuliah | SKS | Nilai | Kode | Mata Kuliah | SKS | Nilai |
| TK4008-19 | Proses Hilir Industri Bioproses | 3 | A | KU4281-13 | Kontroversi Isu Sosial | 2 | A |
| TK4026-13 | Teknologi Pengolahan Partikulat | 3 | A | MG4013-13 | Biokorosi & Biodeteriorasi | 2 | A |
| TK4090-19 | Kerja Praktek | 2 | A | TK4009-19 | Bioproses Industrial | 3 | AB |
| TK4091-19 | Proyek Interdisiplin untuk Teknik Kimia | 2 | A | TK4093-19 | Penelitian Teknik Kimia II | 3 | A |
| TK4092-13 | Penelitian Teknik Kimia I | 2 | A | TK4095-19 | Perancangan Pabrik Bioproses | 4 | A |
| TK4101-19 | Perancangan Proses | 3 | AB | TK4098-19 | Ujian Komprehensif | 1 | AB |
| TK4102-19 | Evaluasi Kinerja Proses | 2 | AB | TK4201-19 | Seminar Keprofesian Teknik Kimia | 1 | AB |
| TK4103-19 | Keselamatan Pabrik Proses | 3 | AB | TK4202-19 | Ekonomi & Manajemen Proyek Teknik Kimia | 3 | A |
| TK4104-19 | Perancangan Produk Kimia | 2 | A | | | | |

A (4): Sangat baik, AB (3,5): Antara baik dan sangat baik, B (3): Baik, BC (2,5): Antara baik dan cukup, C (2): Cukup, D (1): Kurang atau hampir cukup.

Indeks Prestasi (IP) : 3,54
 Lulus tanggal : 30 Juni 2020
 Judul Tugas Akhir : Pengolahan Air Limbah Industri Tekstil dengan Gabungan Bioreaktor Membran Anaerobik dan Proses Aerobik

SKS : 150
 Predikat : Cum Laude

Bandung, 18 Juli 2020

Dekan



Prof. Brian Yulianto, Ph.D.
 NIP 197507272006041005



INSTITUT TEKNOLOGI BANDUNG

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ACADEMIC TRANSCRIPT

No: 130017/IT1.C07/DA.07/VII/TRS/2020

Name : Jonatan Kevin Daniel
 Student ID Number : 13016025
 Place, Date of Birth : Tangerang, August 10, 1998
 Admission Year : 2016
 Faculty/School : Faculty of Industrial Technology
 Study Program : Undergraduate Program in Chemical Engineering
 Option Bioprocess Technology
 Degree : Bachelor of Science in Chemical Engineering



| Semester 1 | | | | Semester 2 | | | |
|------------|--|-------|-------|------------|---|-------|-------|
| Code | Course | Units | Grade | Code | Course | Units | Grade |
| MA1101-13 | Mathematics IA | 4 | AB | MA1201-13 | Mathematics IIA | 4 | A |
| FI1101-13 | Elementary Physics IA | 4 | AB | FI1201-13 | Elementary Physics IIA | 4 | A |
| KI1101-13 | General Chemistry IA | 3 | A | KI1201-13 | General Chemistry IIA | 3 | A |
| KU1011-13 | Indonesian Language: Scientific Writing | 2 | A | KU1101-13 | Introduction to Engineering and Design I | 2 | A |
| KU1001-13 | Sports | 2 | A | KU1201-13 | Introduction to Engineering and Design II | 2 | B |
| KU1072-13 | Introduction to Information Technology B | 2 | B | KU1267-13 | Engineering Drawing | 2 | B |
| | | | | KU1024-13 | English | 2 | B |
| Semester 3 | | | | Semester 4 | | | |
| Code | Course | Units | Grade | Code | Course | Units | Grade |
| TK2101-13 | Introduction to Chemical Engineering | 2 | B | KU4078-19 | Studium Generale | 2 | A |
| TK2201-13 | Mass and Energy Balances | 3 | AB | KI2051-13 | Organic Chemistry | 3 | BC |
| TK2103-13 | Chemical Engineering Thermodynamics | 3 | AB | TK2102-13 | Analytical & Measurement Methods | 3 | BC |
| TK2104-13 | Chemical Engineering Mathematical Analysis | 2 | AB | TK2202-13 | Chemical Reaction Engineering I | 3 | BC |
| TK2105-13 | Chemical Engineering Statistics | 2 | B | TK2203-13 | Heat Transfer Operations | 3 | A |
| TK2106-13 | Chemical Engineering Computation | 3 | B | TK2204-13 | Industrial Microbiology | 2 | AB |
| TK2107-13 | Fluid and Particle Mechanics | 3 | A | TK2205-13 | Biomolecules in Cellular Systems | 3 | AB |
| Semester 5 | | | | Semester 6 | | | |
| Code | Course | Units | Grade | Code | Course | Units | Grade |
| KU2062-13 | Protestant: Religion and Ethics | 2 | A | KU2071-13 | Pancasila and Civic Education | 2 | A |
| TK3001-13 | Chemical Engineering Elementary Laboratory | 2 | BC | TK3003-13 | Bioprocess Technology Laboratory | 2 | AB |
| TK3101-13 | Separation Processes | 3 | B | TK3201-13 | Transport Phenomena | 3 | B |
| TK3102-13 | Plant Utility Systems | 3 | B | TK3202-13 | Process Control | 3 | B |
| TK3104-13 | Fundamentals of Bioprocess Technology | 3 | A | TK3206-13 | Bioreactor Design & Analysis | 3 | A |
| TK3203-13 | Environmental Management in Chemical Industry | 2 | B | TK3207-13 | Enzyme Technology | 2 | AB |
| TK4007-13 | Microbial Metabolism | 3 | BC | TK4029-13 | Industrial Membrane Processes | 3 | A |
| Semester 7 | | | | Semester 8 | | | |
| Code | Course | Units | Grade | Code | Course | Units | Grade |
| TK4008-19 | Downstream Processing in Bioprocess Industries | 3 | A | KU4281-13 | Controversy of Social Issues | 2 | A |
| TK4026-13 | Particulate Processing Technology | 3 | A | MG4013-13 | Biocorrosion & Biodeterioration | 2 | A |
| TK4090-19 | Industrial Internship | 2 | A | TK4009-19 | Industrial Bioprocesses | 3 | AB |
| TK4091-19 | Interdisciplinary Project for Chemical Engineering | 2 | A | TK4093-19 | Chemical Engineering Research II | 3 | A |
| TK4092-13 | Chemical Engineering Research I | 2 | A | TK4095-19 | Bioprocess Plant Design | 4 | A |
| TK4101-19 | Process Design | 3 | AB | TK4098-19 | Comprehensive Examination | 1 | AB |
| TK4102-19 | Process Performance Evaluation | 2 | AB | TK4201-19 | Chemical Engineering Professional Seminar | 1 | AB |
| TK4103-19 | Process Plant Safety | 3 | AB | TK4202-19 | Chemical Engineering Economics & Project Management | 3 | A |
| TK4104-19 | Chemical Product Design | 2 | A | | | | |

A (4): Exceptional, AB (3.5): Excellent, B (3): Good, BC (2.5): Satisfactory, C (2): Sufficient, D (1): Poor.

Grade Point Average : 3.54
 Completion Date : June 30, 2020
 Final Project Title : Textile Industry Wastewater Treatment with a Combination of Anaerobic Membrane Bioreactor and Aerobic Process

Units : 150
 Judicium : Cum Laude

Bandung, July 18, 2020

Dean



Prof. Brian Yulianto, Ph.D.
 NIP 197507272006041005